HUMAN SERVICES RESOURCE SCHEDULER

An Interactive Qualifying Project Report

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Degree of Bachelor of Science

By

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Michael Tramantana

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Benjamin Wong

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Stephen Zangerl-Salter

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Approved:

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Professor Frank Noonan

__Abstract__

The United Way of Central Massachusetts is a coordinator for human service providers. Currently they do not have a comprehensive on-line database that specifies the schedules of service providers and their requirements for providing service. Also, the service provider's community events are not coordinated on a schedule that is easily accessible and kept up to date. The IQP group took the existing Redbook database that the United Way utilizes in its daily operations, and put it online. Also, the group made an online Calendar to help with the scheduling of community events.

Table of Contents

Chapter 1: The Introduction

The United Way

The United Way is a national system of volunteers, contributors, and local charities built on the proven effectiveness of local organizations helping people in their own communities. United Way of America is the national membership organization that supports nearly 1400 independent local United Ways across the country with services and training. For this IQP the project team was fortunate enough to help the local United Way in Worcester, MA. From the beginning of this project the staff at the United Way of Central Massachusetts, including Jean Strock, VP Community Services and Volunteer Development, have been extremely helpful and supportive to the project's research and work. The individual service providers that the United Way supports also expressed great appreciation for the project team's efforts to improve the Information and Referral process that takes place in the Worcester Community.

The United Way of Central Massachusetts sponsors and organizes many programs to improve the quality of life in the Worcester County area. Some of these programs include *Worcester's Promise*, the *Volunteer Center* and *First Call for Help*. *Worcester's Promise* is an alliance in the support of our children and youth. The United Way of Central Massachusetts acted as a steering committee for the Worcester Youth Summit. This summit formed task forces to develop action plans to achieve five commitments by the year 2000. The first commitment is to provide 1490 more mentors for the children of the Worcester County area. Another commitment is to increase the number of safe places and structured activities outside of school by 25. The third commitment is to ensure that all children under the age of 18 have health insurance. Teaching young people marketable skills by opening opportunities to preschool literacy, school-to-career, and out-of-school-to-career efforts is another commitment. The fifth

and final commitment is to increase the activeness of youth service by 10% and improve the overall quality of that experience. The task force set five goals for *Worcester's Promise*; achieve the five commitments, oversee resource development and distribution, increase media attention to the five commitments, coordinate the efforts of the five task forces and report to the community on the progress of these goals. *Worcester's Promise* is an extension of America's Promise developed at the President's Summit for America's Future (Philadelphia, April 1997).

Another program that the United Way helps to maintain is the *Volunteer Center*. Some of the activities of the *Volunteer Center* include volunteer recruitment and referral, specialized programs for specific groups of volunteers, volunteer recognition activities, and technical consultation on volunteer management. The *Volunteer Center* associates with local and national volunteer management groups. By mobilizing and maximizing volunteer resources, expanding volunteer opportunities and strengthening the capacity of organizations to manage their volunteer resources, the *Volunteer Center* of the United Way of Central Massachusetts works in support of the UW of CM's mission statement.

United Way of Central Massachusetts MISSION

United Way of Central Massachusetts is an organization of donors striving for excellence in meeting the human service needs of the community through the development and effective distribution of resources to achieve the greatest impact.

Overview of Group Response

The group used lessons learned in their classes in both Telecommunication and System Analysis and Design in both the planning and execution of the project. Charting out the problem statement, the group found that they would need to get feedback from the current users of the

system. The group then proceeded to start to send out questionnaires to some of the service providers. With a lower then expected turnout the group then decided to do telephone questionnaires. Also at one point the group attempted to get a focus group together of both the social workers and the service providers whom both represented potential users of the system. After receiving feedback from the users, the group began to program the prototype. Then once the prototype was done, the group made trips to certain service providers, where demonstrations were performed and more feedback was gathered.

How to Proceed

The remaining chapters of this report will go step-by-step through the process the project team used to design and implement a prototype of a solution to some of the problems mentioned above.

Chapter 2 contains information that is relevant to performing case management in human services. It will describe how efficiency can help a case manager satisfy their client's needs. It will also discuss the use of Information Technology within the human service industry and its positive effects. The goal of the Human Services Resource Scheduler is to enhance each of these areas; this will also be discussed in Chapter 2.

Chapter 3 contains the complete methodology of this project. This includes mentioning the research into the system user's needs as well as identifying some of the constraints of this system.

Chapter 4 will describe in detail two of the technical aspects of this project that are not directly related to the human service industry but have a large impact on this project and the development of the prototype. The first technical feature to examine is Iris, the software package used by the United Way that houses all the information about the service providers in the Worcester County area. The second feature will discuss the United Way's web server, Hosting

Solutions. It is planned that the prototype be implemented via the Internet; therefore, the project team will need to know some technical details regarding Hosting Solutions.

Chapter 5 explains the design of the prototype in great detail. This includes mentioning the computer languages that were used to design the web pages and the database structure that exists behind the web pages. It will also describe the functionality of the prototype.

Chapter 6 will evaluate the prototype based on the results of the field tests. When testing the prototype there were three key service providers who aided the process, Suzanne Buglione of Henry Lee Willis Community Center, Betty Beaulac of Pernet Family Health, and Beth Vietze of Worcester Family Ties Networks. This chapter will describe the interviews with these service providers as well as tests of the prototype with Prof. Frank Noonan of WPI and Jean Strock of the United Way.

Chapter 7 is a chance to describe in more detail some of the recommendations proposed by these service providers. It also is an opportunity to develop some ideas that the project team has concerning the future of this project.

Chapter 8 will discuss the conclusions made about the human service industry and how the use of information technology can benefit not only the human service industry, but also all organizations that need and use information.

Following Chapter 8 will be an appendix of charts, surveys and screen shots with detailed descriptions of the prototype. For convenience, a glossary of selected case management terms and technical terms that will be used through out this report is included. Any term that is underlined will be included in alphabetical order in the glossary. Finally there is a list of references that were found useful during the project team's work on the Human Services Resource Scheduler.

Chapter 2: Problem Statement:

The Community Calendar

The original project was to complete a calendar which service providers would utilize in order to post events they sponsored for the public. The idea behind the system was that each service provider would be responsible for maintaining all there own information thereby cutting back on the amount of strain on the United Way, and that by utilizing this system the different organizations would be able to coordinate their meetings.

Before this project was undertaken, the only way to get information about events out was to do massive mailings to service providers. This process was time consuming and expensive. By utilizing the Internet, up to date information is always available at practically no cost. This also offered easier access to community information thereby making it possible for collaborative projects between service providers.

First Call for Help & The Redbook

The IQP project team was asked by the United Way to help improve the *First Call for Help Program.* This program is a telephone helpline service. People in Worcester County can call 755-1233 to speak to a trained information and referral (IR) specialist. The helpline also offers bilingual and TTY service. *First Call for Help* is a free program that can link callers with the most appropriate programs for their needs. This program collects and maintains data of over 1500 local agencies and programs for need assessment and planning. The directory that contains all of this information is commonly referred to as the Redbook. The Redbook is used extensively by service providers in the Worcester County area. *First Call for Help* also publishes a help directory cataloging over 400 service programs and agencies. It offers connections to many groups and IR services.

A goal of the *First Call for Help* program is to help people help themselves and to help other people help others. The United Way can achieve this goal because the helpline is open to the public as well as individual service providers. Ordinarily a service provider will call *First Call* on behalf of a client in order to find certain programs that the client may need. This refers to helping other people help others. Often, this process can be quite time consuming and the client's needs may not be adequately met. For example, if a client visits an individual service provider and requests a service not provided at that site, the service provider may call the *First Call for Help* program at the UW. The service provider asks the IR specialist for any services available that may fit the client's needs. If this information is not accurate and timely the client can get bad service. Also, the information about particular programs are not readily available, in this case the IR specialist has to do some digging to find a program that is suitable for a particular client. This may require the specialist to call back. By the time the specialist can contact the service provider with a program it may be a few days later. Then the service provider has to contact the client in order to give them information about a particular program. This process can sometimes take up to two weeks! In some instances the client has lost interest or does not need the service or program any more. This results in wasted effort and inefficiency on the part of the IR specialist and the service provider.

If the service provider has a copy of the Redbook they may choose to search for a program that a client needs without calling *First Call*. The <u>case manager</u> can conveniently get information regarding a program or service in order to aid their client. The Redbook only offers a brief description of human service agencies and the programs they offer. If the case manager requires more information they will need to contact the service provider and inquire about the program of interest. The information that is contained in the Redbook can quickly become out-of-date. This can be frustrating for a case manager who is trying to contact a service provider.

Often the case manager will manually edit the Redbook by crossing out incorrect information and entering the correct contact or other information about such a program. This makes the Redbook difficult to read for other users. Also, if the case manager learns of a program that is offered by an agency and it is not listed in the Redbook, they may manually write that into the book as well. By the time the case manager has the Redbook for only a month it is already written all over and stuffed with note paper and sticky pads. It probably will be another year before this agency receives a new Redbook that reflects these changes. Also, the clients suffer by not receiving timely advice about useful programs because the case manager was too busy hunting for relevant programs while trying to keep their Redbook accurate. It should be noted that this is not always the case that the Redbook proves to be a very useful tool for any service provider who uses it. However, a way to alleviate some of these problems would be to introduce some information technology into this human service activity.

Likely Scenarios

Scenario A

Case manager, Jane Doe, has a client in her office requesting services for AA meetings and AlAnon meetings. The client also needs low cost daycare facilities and medical services that accept Medicare and Medicaid. Jane Doe will now provide the client with service providers offering these services by using the Redbook. She searches through the book for Alcohol related programs in her service area. She finds that "Happy Family Services" offers both low cost daycare and alcohol related support groups. Jane calls "Happy Family" because their number is listed in the Redbook and she asks to speak to John Doe because he was listed in the Redbook as the contact for these programs. Jane makes an appointment with her client to see John for these services. To find medical services accepting Medicare and Medicaid, Jane searches the Redbook again for those two terms and she finds that Dr. Jonathon Doe offers all kinds of medical

services. After calling Dr. Doe, Jane's client has an appointed with him and the service plan has been completed. The client goes on to keep those appointments and their needs are met by these other service providers.

Scenario B

Jane Doe has the same client in her office and the client has the same needs as in scenario A. So Jane begins by searching through the Redbook. She finds an entry by "Happy Family Services" and as she begins to read the list of programs offered she notices that the page with the information on the alcohol programs has been torn out some time ago. Oh well, she'll try another service provider. She finds a church offering AA meetings and gives the schedule to the client after she called Fr. John Doe for the information. They don't offer support groups for families of alcoholics but a different service provider on the other side of town does. After calling the service provider Jane gives the support group schedule to the client. Unfortunately, the client's family cannot attend the support group during the operating hours. Jane calls the service provider back and the service provider recommends a different service provider to Jane that has a support group operating on a different schedule. This service provider is not listed in the Redbook; so Jane writes the information down on a stick-it pad and inserts it into the Redbook. The client is satisfied with this support group even though it is located in the next town over. Jane now searches through the Redbook for low cost daycare. She does not have the information about "Happy Family Services" daycare program because that page was, also, torn from the Redbook too. She finds a day care facility located in a school near the client's home. The client is excited as she calls the service provider. After giving the client the information on the program the client rejects the service because the cost is too high. Jane asks a co-worker if he knows of any low cost daycare facilities. He suggests one to Jane and gives her a business card. Jane calls the number on the business card to contact ABC agency regarding their daycare

program. She asks for John Doe, the name on the card, but he has resigned and no longer works at ABC agency. Jane holds while the secretary at ABC agency tries to find someone that knows about the daycare facility they provide. After three minutes of holding, the secretary informs Jane that no one is available to give her information about the daycare facility but if she calls back later maybe someone can help her. Jane gives the telephone number to the client and begins searching for medical services. She remembers referring a previous client to Dr. Doe so she also refers this client to him. Jane has finished helping the client but the client still does not have low cost daycare service yet. She encourages the client to call on his own because she has already spent too much time helping this client and there are other clients waiting.

Scenario C

Jane Doe is in her office using the Human Services Resource Scheduler (HSRS) when her 1:00 appointment arrives. The client explains his needs, these are the same needs as scenario A and B, and asks Jane for help. Jane goes to the search page of the HSRS and enters alcohol as the search criteria, a list of seven different service providers is outputted. Jane chooses the one that is closest in location to her client and prints out all the information about the program. The client is very satisfied. Jane enters a new search for low cost daycare, and only two day care facilities are offered. One of the facilities is in a medical clinic that accepts Medicare and Medicaid. Jane receives all of this information by viewing the description of the clinic. The client notices that the clinic offers the medical services he is looking for. Jane prints the information about the day care program and about the clinic for the client. Within ten minutes all of the client's needs have been met and Jane is free to give her client more advice if he wishes or to serve another client if the current client is satisfied; the current client is very satisfied and leaves thanking Jane repeatedly. As the client leaves, Jane's phone rings; it is another service provider requesting information about a certain program. Jane uses the HSRS to find the

information, then she faxes it to the caller and makes a personal recommendation based on her experience.

These scenarios were designed to portray several examples of what may happen when the Redbook is used. All the scenarios are completely fictional, but are based on observations and interviews with Redbook users. Scenario A was a perfect example of using the Redbook to help clients quickly and efficiently. Scenario B was a little more realistic, although the average use of the Redbook is probably somewhere in-between A and B. Scenario C is designed to be an after image of the use of the Redbook when the Human Services Resource Scheduler has been implemented. It is more likely that scenario C could have a corresponding scenario D as in A to B. Most likely the use of the HSRS would fall somewhere between C and D.

Possible Solutions

In light of the problems with the Redbook, there are several areas that obviously could use some improvement. The first of these is the accuracy of the information. When the Redbook is first published it uses the information that is contained in the United Way's Iris database. If this information is not accurate, the Redbook will not be accurate. So the first step is to ensure that the United Way always has the most relevant and up-to-date information concerning all of their affiliated service providers and their programs. Currently, the process to submit an update of the Redbook to the United Way by an individual service provider is done using a paper form and sent via mail or fax. However, the United Way only publishes these changes periodically so even if a change is submitted, it may not be used for up to six months. Real time updating of the Redbook would keep all the data contained in it accurate and relevant. If the United Way had access to these real time updates they could in turn keep their Iris database accurate. Real time updating of information by the service providers is a possible solution to inaccurate information.

Another problem identified in using the Redbook is the delay in time that it takes for a client to receive information about a service that can benefit the client. Often the case manager wishes to confirm any information about a program listed in the Redbook and this requires a call to the organization. Often the first person that is reached at the organization does not have that information and they need to pass it along to someone who does. This may not happen right away and by the time the person in charge of the program contacts the case manager, who inquired about the program, a great deal of time has passed. Accurate information will eliminate a need for a confirmation call to the organization. But this does not change the fact that there is still a time lag. In order to increase the response time to help serve the client more efficiently it may be necessary to implement a device where service providers can hear of the newest programs available and get all the important information about such a program in a convenient and efficient manner. A community calendar is such a device, and if there were a central location where all service providers can see this information or make more information available it would successfully solve this problem.

Chapter 3: Literature Review

Case Management

The primary system users of the Human Services Resource Scheduler will be case managers working in the Worcester County area at different organizations providing human services. It was necessary for the project team to examine the role that case managers play in the human service industry. In order to do this it is necessary to examine the field of case management, the home of case managers. By understanding case management, the project team was able to develop a system that accurately meets case manager's needs.

Joel Fischer offers several working definitions of how case management (social casework) can be described. (Fischer 10) Each definition points toward one human, or group of humans as in a human service agency, helping another human, or group as in a family, solve problems. This definition can be enhanced to fit the project team's particular scenario. The United Way works with human service agencies so the system had to be implemented to help multiple people get similar tasks accomplished. Service providers work with individuals as well as families and some even offer group events for children, fathers, etc… Most clients that need help are very poor; some have mental problems and others are very ill or too old to take care of themselves. In light of these constraints, case management, as it refers to this project, can be described as a commitment by society to help people in need.

For this project, the group members focused on a particular function of caseworkers, information and referral. When a caseworker or case manager is developing a service plan for a client they may need to refer the client to programs outside of their agency. In this event, the case manager needs to contact other agencies or give the client information about programs offered by other agencies that will assist the client. The project team focused on making this

process faster, more accurate and more efficient. However, case management extends far beyond information and referral.

It is obvious that social case work or case management will always be needed because there will always be people within society that need help. Therefore, it is important for case managers to approach their job, which may seem impossible because one person cannot help everyone, with certain goals and means of measuring the achievement of these goals.

An issue that caseworkers often deal with is how to effectively deliver human services to clients and measure the results of these services. Some clients that service providers in the Worcester County area serve are the homeless. It is difficult to deliver services to them, such as medical benefit information as is the case with MassHealth, if they are not willing to come to a location for help. An effective way of implementing effective service delivery is to set up programs that operate continuously and target specialized needs within a community. Many of the programs sponsored by the United Way mentioned in Chapter 1 are an example of this.

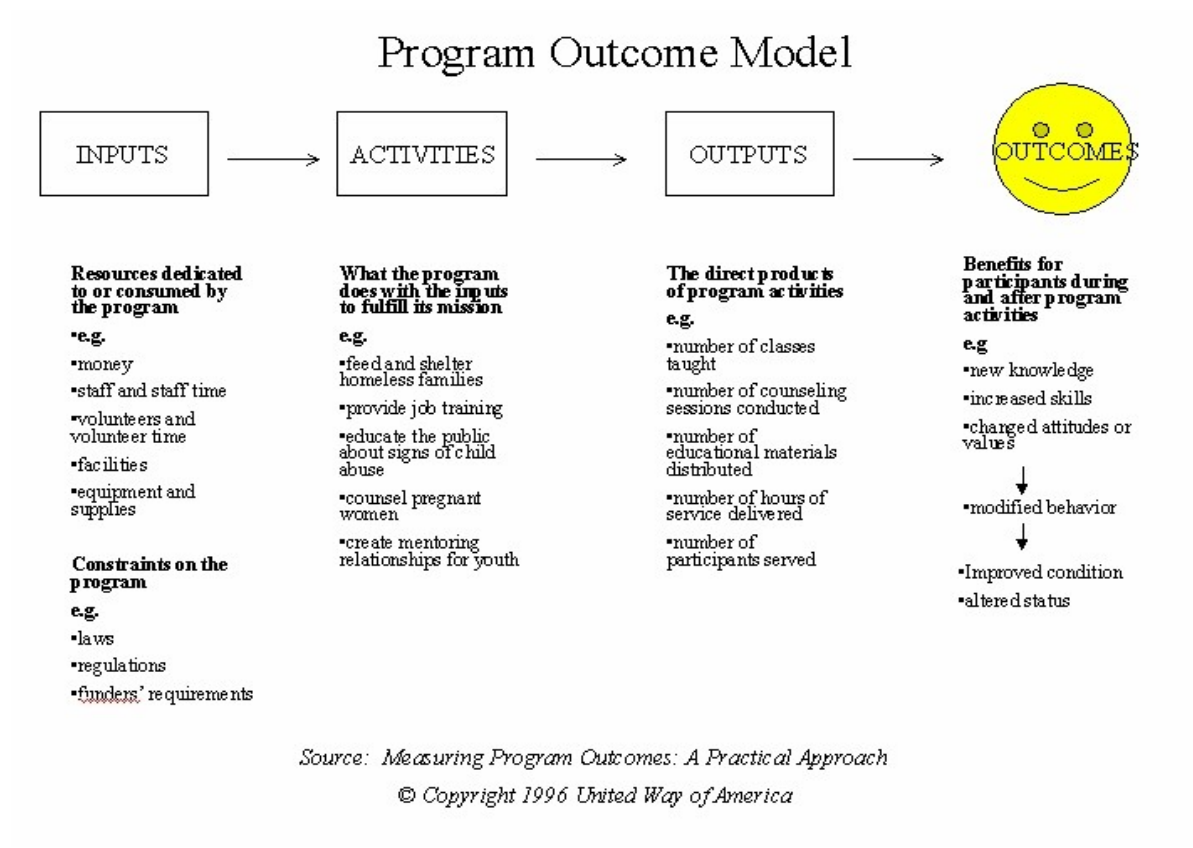*Figure 3.1 System Development Phases*
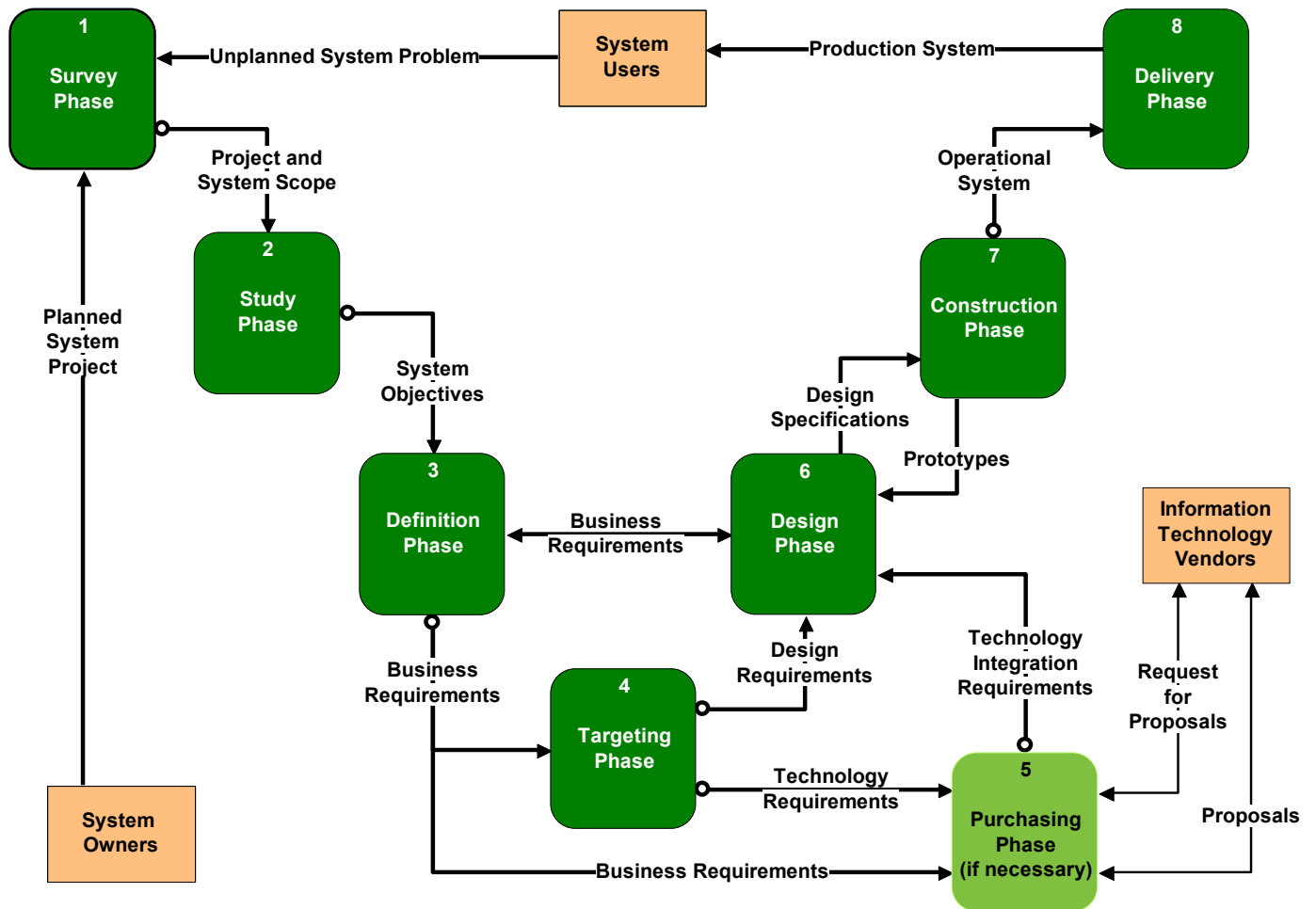
Another issue that develops from this is how to monitor and develop successful programs. How can a service provider judge what makes a program successful or not? By approaching the situation from a managerial standpoint, caseworkers have developed a way to monitor, and consequently, develop successful programs. Case managers must analyze the inputs to a program, the activities of the program, the outputs of a program and finally the

<u>outcomes</u> of a program. (see *figure 3.1*) This model is a successful measuring tool against a seemingly infinite task; so long as society exists there will be a need for case managers.

Once a service provider is operating under certain guidelines they can start to analyze the performance of their programs. Over the life of monitoring, performance experts have deducted that performance measurement should focus on six facets. Financial accountability is the first <u>benchmark</u> of monitoring program performance. Case managers should keep track of the money within the service providing agencies. Next is to see what outcomes can come from the money being monitored. Outcome measurement gives realistic figures to the work being done. The third focus is to adhere to standards of quality in service delivery. Different accreditation boards have been established to define quality levels of service. To appease funders, the fourth focus measures information on the program participants. This focus collects data on clients, which is a key feature of the new system developed. As a fifth guideline, caseworkers like to match key performance indicators. These are performance measures produced by public accounting firms. Finally, a most obvious measurement of program performance is the overall satisfaction of the client with the service. Measuring this also provides assurance to funders of programs.

Figure 3.2 Program Outcome Model

Program Outcome Model

INPUTS	→	ACTIVITIES	→	OUTPUTS	→	OUTCOMES
Resources dedicated to or consumed by the program		What the program does with the inputs to fulfill its mission		The direct products of program activities		Benefits for participants during and after program activities
•e.g.		e.g.		e.g.		e.g
•money		•feed and shelter homeless families		•number of classes taught		•new knowledge
•staff and staff time		•provide job training		•number of counseling sessions conducted		•increased skills
•volunteers and volunteer time		•educate the public about signs of child abuse		•number of educational materials distributed		•changed attitudes or values
•facilities						↓
•equipment and supplies		•counsel pregnant women		•number of hours of service delivered		•modified behavior
		•create mentoring relationships for youth		•number of participants served		↓
Constraints on the program						•Improved condition
e.g.						•altered status
•laws						
•regulations						
•funders' requirements						

Source: *Measuring Program Outcomes: A Practical Approach*
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Using the program outcome model (see figure 3.2) and measuring performance following the previous six guidelines enables case managers to manage their organization successfully and efficiently.

Efficiency

Often case managers are too busy setting up programs and running events for the community that they do not have a chance to examine the processes of their agency. If they go too long with out an analysis of current programs these programs will become inefficient. Now, the caseworkers have to work even harder just to keep the programs successful. When caseworkers are involved with making quick fixes to existing programs they are ignoring the

19

overall efficiency of the system. This section will offer some guidelines on how to monitor efficiency and why it is important to run an efficient human service agency.

It is important to monitor the efficiency of programs in the human service industry because there is scarcity in this field. Scarcity is a lack of resources. These resources can range from financial issues to limited volunteer hours. Scarcity always exists in the human service industry because there are endless activities or programs that case managers would like to implement. As long as people in society need help, case managers will need more resources than are available and thus scarcity will exist.

There are several things that case managers can do to counteract scarcity. One is to maximize the resources of the agency. This will minimize the strain of scarcity on the human service agency. To maximize resources, case managers often have to prove to funders the value of the programs they provide. Performance analysis, as discussed previously, is one way to prove the worth of a program. When funders can compare results of programs to past results or competitor results they can choose which program is the most effective and thus, how to allocate their donations.

When trying to maximize resources, case managers must avoid the trap of <u>allocative efficiency</u>. This occurs when case managers fight for funds. Often, the funders will donate their money to the most efficient program. When case managers strive to create efficient programs in order to receive more funding they may lose site of the effectiveness of their programs. If the funds are allocated to the most efficient programs, some agencies that run more effective but less efficient programs will not receive the funding they need. As a result, some programs that clients need may not be provided. This results in inefficiency in the human service industry as a whole.

However, case managers often cannot increase their funding. The budget comes once a year and they must allocate resources within the agency with what they have. In order to operate more efficiently in this scenario case managers must strive to produce more or better outcomes while using fewer resources. This is known as efficiency through minimization. Increasing resources is efficiency through maximization. (Pruger 10) By implementing performance analysis and following the *Program Outcome Model (See Figure 3.1)*, case managers have a reference on how to improve their programs. This can help to increase the quality and quantity of outcomes while reducing the inputs.

Once a service provider is operating efficiently they will notice that the program will be more successful. This is primarily because now there is a means to judge the quality of these programs. But also, programs that operate efficiently tend to produce higher quality outcomes. The caseworker that is operating within an efficient program will tend to be more organized and thus, they can better serve their clients. This results in greater client satisfaction. Also, if a program is efficient the caseworker will be able to spend more time developing a better service plan. The new system implemented in this project also provides faster information and referral services. Thus, case managers can provide a larger quantity of IR services to their clients. Information technology makes this possible.

Information Technology

With advances in technologies, computers have taken a new role in helping Human Services; however the integration of computers has been slow. Before, computers tended to be used more as a labor saving device; however computers are being used to help aid decisions and daily activities.

Social service as a whole has been slower than most industries to utilize computers. This is due in part to the lack of funding in a number of branches of this industry. However with the current drops in the prices of what were once considered super computers, the introduction of computers into the Social Service industry is now in reach.

The Federal government has tried to help cut the prices of instituting technology in the workplace for the Social Service industry. It has done so by making more grants available which can be used for both training and purchasing of equipment. Such steps have started to help the industry but other factors are still holding the process back.

A major reason that the Human Service industry is having problems implementing computers in their daily routines is because of lack of training and people's hesitance to change to a new system. An example of this was seen when the group visited Henry Lee Willis. The group was told of a new computer that was delivered to one of the organization's branches. Apparently the computer just sits there as a paperweight. At first this was due to a lack of formal training, however even though the training has been done, the computer is not utilized. Suzanne Buglione told the project team that some of her employees are just plain scared of technology. It seems that this attitude exists throughout most of the human service industry.

The Human Services Resource Scheduler is an excellent example of how information technology can improve the efficiency of case managers. The HSRS accomplishes this by offering live updates of existing records in the Redbook. This provides the case manager with more accurate information. The search functions also let the case manager peruse the Redbook faster and more conveniently. The information on the web pages are available all the time so case managers can get information on programs even if the agency sponsoring the program is closed. The HSRS lets the case manager avoid making tedious phone calls back and forth to different service providers in order to gather information on programs. This way, case managers

can offer a higher quality of service to their clients. Clients can also keep a print out of the information on the program that interests them. Clients that visit frequently may find that the HSRS is so easy to use that they can peruse the Redbook themselves. This will free some time for the case manager to work on other things, like spending more time developing a higher quality service plan. Therefore, clients are more satisfied and outcomes have a higher quality. (See *figure 3.2*) If funders see these results, service providers may see an increase in their funding and therefore they can operate more efficiently.

Chapter 4: The Methodology

The project objective was to improve the way the Redbook is used and increase its effectiveness by implementing information technology. The project team focused on creating a web page that could perform all the functions of the Redbook as well as offering some other improvements, like the Community Calendar. The procedure for implementing a prototype of the Human Services Resources Scheduler (HSRS) included surveying and understanding user needs for human service providers in Worcester, Ma., designing the software to meet those needs and testing the system. Of course, there were many other micro functions included in the process. *(See Figure 3.1)*

The *System Development Phases* (Whitten,9) represent the steps that need to be taken when designing a final system for a business. The Human Services Resource Scheduler developed by the project team was only a prototype. Prototyping is done in the definition phase of systems development. However, in order for the group to understand the concepts behind designing the Human Services Resource Scheduler the entire development cycle was implemented. A few of the final steps in the development cycle were not completed because they are not relevant for creating a prototype. There were also time constraints that prohibited the implementation of these phases.

For the survey phase contacts were established when the project commenced. The group met with Prof. Noonan to discuss the scope of the Human Services Resource Scheduler. The project would include an investigation of the operations of the Redbook at the United Way. The project team would also develop a working prototype of an online Human Services Resource Scheduler. The community calendar is the scheduler. As the project progressed an on-line version of the Redbook was added to the requirements of the prototype.

Surveying the System Users

An option for extracting user information was to hold a focus group of service providers. This proved to be too difficult of a task to accomplish considering the short time frame and lack of communication with the service providers. The project team decided that the best way to get user information was to mail a survey to several service providers. Jean and Prof. Noonan provided a diverse list of service providers to ensure that the survey results would be balanced (*See Figure 4.1*).

Figure 4.1 Service List

Service List

Henry Lee Willis
Community Center, Inc.
Barbara L. Ward
Neighborhood Services Coordinator
45 Freedom Way
Worcester, MA 01605

Henry Lee Willis
Community Center, Inc.
Suzanne M. Buglione
Director of Community Services
110 Lancaster Street
Worcester, MA 01609

Mass Health c/o Department of Transitional Assistance
Mara Rivera
Community Representative
9 Walnut Street, 4th Floor
Worcester, MA 01608

Family Services of Central MA
Diane Pougere, LICSW
Director
31 Harvard Street
Worcester, MA 01609

Worcester Community Housing Resources, Inc.
Maria Alma Navedo
11 Pleasant Street, Suite 300
Worcester, MA 01609

Mass. Job Training, Inc.
Roxanne Leland
Recruiter / Job Developer
332 Main Street, Suite 601
Worcester, MA 01608

Family Health & Social Service Center
Elaine K. Gardella, M.Ed.
26 Queen Street
Worcester, MA 01610

There were several things that the survey needed to achieve. The first concern was to determine some of the system constraints. In order to do this the project team needed to know what levels of computing resources each of these service providers have. Therefore, at least one

of the questions would have to ask what system they have in place now. Preliminarily, the project team was planning to provide the Human Service Resource Scheduler via the Internet but this would not be possible if the service providers did not have access to the Internet. The survey needed to confirm that most of the service providers could access the Internet. Also, the survey would have to provide information regarding what the system planned to accomplish. After much discussion the project team determined that the readers would spend limited time reading and answering this survey. This led the team to believe that a bulleted list of benefits of the HSRS would be ascetically pleasing to the readers of the survey. Also, the survey was directed towards service providers and, therefore, group members would have to reduce the amount of technical terms used in the project narrative so the readers would be able to understand the new system. Most importantly, the project team needed to have a way to read the responses to the survey. In order to make replying to the survey convenient, the project team decided to put Mike's phone number, mailing address and e-mail address on the survey for replies or questions. Also, group members included Jean's address at the United Way as well as a fax number of the United Way for replies. Jean agreed to collect any responses she received and inform the project team of such a response. Other questions were added to the survey in order to extract information about any problems or concerns that service providers may have with the current Redbook. The final version of the survey (see appendix A: *Nov 11th Survey*) was mailed to approximately one dozen different service providers within the Worcester County area. The project team requested that the surveys be returned by Nov 15th 1999 in order to give enough time to analyze the results and possibly collect more information.

After receiving several replies to the survey via mail the project team regrouped and decided that in order to gather more information group members should schedule some interviews with the system users. These interviews would be done primarily over the phone. In

one case the project team interviewed Mara Rivera and Kathleen Nichols of the Health Benefits Management Program c/o DTA at their office in Worcester. This particular interview lasted considerably longer than the phone interviews, primarily because the phone interview was designed to be quick and easy because of the difficulty in being able to contact users. (see appendix B: *Phone Interview*) Although the project team conducted the same interview as the phone interview, having a live interview opened up more channels for conversation. This gave the group members a better insight into areas within the human service industry that they had not seen before. Also, the visit to the Health Benefits Management Program demonstrated the atmosphere in which this system would be used. Team members noted at the conclusion of the interview that this particular agency desperately needed organization of their events and programs. For example, the project team asked Mara and Kathleen what type of programs they would post to the Community Calendar. They both mentioned an upcoming health fair; however, neither knew the date of this event. The event was less than a month away and they could only narrow down a possible date to within a two-week period. This was a great example of how important a more dynamic community calendar will be to these service providers.

The phone interviews mentioned previously provided the project team with a larger supply of information from a more diverse group of service providers. Group members successfully contacted and interviewed Betty Beaulac at Pernet, Suzanne Buglione and Barbara Ward at Henry Lee Willis Community Center, and Gordon Hargrove at Friendly House Incorporated. Each of these interviews was useful because these service providers are among the most active in the Worcester County area. The project team knew that their information would be particularly useful to many other service providers that were not interviewed.

Through the interview process alone, the group members noticed how difficult it was to get in contact with a particular person at an agency. This illustrated to the team how important

this system really was. In some cases, group members were never able to get in touch with certain people in an agency and they tried to contact these individuals for approximately one month! If they were clients or case managers trying to assist clients, they would have been very ineffective at their job because of the inefficiency at each agency. The need for this system was becoming clearer everyday.

During the study phase of the Human Services Resource Scheduler project, the group members had several meetings and interviews with Jean Strock of the United Way. The purpose of these interviews was to develop an understanding of the functions of the United Way and the processes that the service providers go through when using the *First Call for Help Program*. Some of the activities involved in the study phase were completed prior to the official start of the project. For example, the project team needed to learn about Iris. The group members ordered an information packet about Iris from Benchmark Enterprises in an effort to learn more about the system that the team would be using. Each group member received a two-hour training video as well as a manual on how to use Iris. The packet was sufficient to introduce the project team to the human service industry and very helpful in understanding Iris.

In an effort to provide more resources concerning information and referral Jean suggested joining an IR newsgroup. The project team did so, the news group is called ir-networker and it's members provided valuable information regarding Iris and the human service industry. But, the newsgroup was not enough; the project team needed to have direct contact with the system users, the service providers in the Worcester County area. During the October 28th 1998 meeting with Jean, she suggested that the project team survey these resource providers, as discussed earlier, in order to extract information about their needs and also to help the project team define what some of the constraints were.

Community Calendar

Many of the early meetings with Jean were spent discussing the new community calendar that was implemented. After many brainstorming sessions the project team developed some goals for the community calendar. The first goal was to make the calendar available to any person who wanted to attend an event listed in the calendar. Secondly, the calendar would have to be self-maintaining. Jean would be the administrator of this system and she did not have the time to maintain such a large program. For convenience it was decided that the calendar should be on the same web site as the Redbook information. The idea here was that one bookmark would be able to link the user to both functions of the system. Finally it was agreed that any user that participated in the Redbook portion of this project should also be able to post events to the Community Calendar. These postings should contain a detailed description of the events to be held.

The Design Plan

After interviewing the previously mentioned individuals the project team was prepared for the definition phase. The needs of the users were easily grouped into two categories. The first is feasible solutions to practical needs and the other is wish list items. Many of the service providers wanted this project to be custom tailored to their agency. However, in order to make this project a success it must be useful to everyone who uses it. Some of the suggestions were too unrealistic to even consider. Many of the service providers wanted to be able to house a personal web page within this system. That is something that just is not feasible because this is the United Way's system and something of that nature would require the United Way to pay more money to their web page host, Hosting Solutions. Other wish list items are just not relevant to this project and therefore they will not be discussed.

Criteria

The foundation of the HSRS had to contain all of the existing elements of the Redbook. Users needed to be able to find information about a particular program. Currently, the users either know the name of the service or agency they are looking for, or they call an IR specialist who searches for available programs. The HSRS needs to let the user browse through the contents of the Redbook via agency name or program name. Also, the users need search capabilities within the system. The front page of the web site will include functions for reading the database and searching the database.

When service providers have to make a change to their information contained in the Redbook there is a specific process that they go through. Currently, this process is rather tedious and ineffective. The United Way provides Redbook change forms that the service provider receives when they receive their copy of the Redbook. If the service provider wishes to change the information contained in the Redbook, they have to fill out the change form and either mail or fax it back to the United Way. Periodically, the United Way publishes a list of changes that have been made to programs. However, program listings may go unchanged for an extended period of time, approximately six months, after the change form has been submitted to the United Way.

In order to enhance these procedures the project team wants to implement real time updates to programs. To ensure that service providers can only change their information and not another provider's information, the project team needs to implement security features around any functions of the system where information can be altered. On the front page of the web page the project team will include functions for editing information that is contained in the database and deleting information contained in the database. Both of these functions will have security and password protection should be sufficient.

Additionally, the project team will include a write function that is also password protected. This feature will enable users to add new programs to their existing information. The real time creation of new programs is a feature that the current system of the Redbook has great difficulty in handling. When interviewing service providers the group members discovered that new programs are often heard of "through the grapevine" rather than from a formal source. Even still, when this information is received details are often sketchy.

Community Calendar

The previous five functions will also have to be implemented on the Community Calendar. This will give users the ability to add events to the calendar as often as they choose. Also, once their event is posted they can choose to delete the event or change the information about the event. Browsing through the calendar will be implemented differently because there is a significantly different format to the calendar. Rather than reading certain programs by name, users will be able to view events according to the date of the event. The user also has the ability to search for events many months or years ahead.

Constraints

When working with any problem there are always some constraints as to the possible solutions to the problem. In the non-profit human service industry in particular there are constraints that can severely limit the ability to improve a current system. In the eyes of a human service provider, there can never be a shortage of things that can be done to help the people of a community. A service provider may come up with several ideas that can benefit society and have great impact or even offer a small improvement. Ideally, the human service provider would like to see that these ideas are put into action and implemented. However, more often than not, many of these programs cannot develop beyond the planning stage because of the severe

constraints within the human service industry. While working on this project, the project team experienced this first hand.

The first constraint the project team faced was that there was no budget for the project. Before working on this project group members knew that WPI does not supply any funding for an IQP. However, they were not prepared to face the fact that they would only be able to work with whatever was already in place. The project team did not plan on changing any of the business processes associated with the Redbook; they merely wanted to improve upon them. When group members inquired about funding for the project the United Way said that they cannot fund anything because of a by-law that states they can only conduct funding at certain times of the year. The project team also realized that this same scenario existed for the individual service providers. Therefore, the project team had to model the system around the system and resources that already existed. The group member's assumption was that no service provider would spend any money to use whatever service the system offered. This limited the solution only to service providers that had Internet access.

Many service providers did not have powerful computing resources, if they had any at all. While the project team interviewed service providers the team members discovered that they do not view a computer as the valuable tool that it is. Rather, it is seen as an expensive piece of equipment that does not provide a service for a client. This is a reasonable view because $2000 spent on a computer does not go as far as spending $2000 on a service for a client. Within the human service industry they can stretch their funds out quite resourcefully. The project team learned that many service providers did not have computers at all. The ones that did have computers had outdated 386 and 486 machines. Also, the staff in these locations were not properly trained on how to use a computer or the Internet.

This was devastating to the group member's project expectations! As WPI students, the group members have a tendency to do anything with the newest technology by using the fanciest and top of the line applications. Now the project team would have to cater the system to users with little computer or Internet experience as well as users with slow computers and an inability to view certain features of more advanced programs. The most important aspect of the web site was to give fast and accurate information. If the web page takes five minutes to load and even longer to navigate it would not be a solution; it would only be another problem.

Along with the criteria previously discussed these constraints gave the project team more criteria to follow. The system required a web page that would load quickly. This meant the team could use minimal graphics and colors. The only information team member's could put onto the page was relevant information. The project team had to use the most basic of web programming ability. This eliminated the option of using frames within the HTML page because slower computers cannot handle that type of output. Also, the project team could not use any Java programming because older machines and Internet browsers also cannot handle the background programming involved with Java. After the project team defined these constraints they had to eliminate many options that were developed in the early brain storming sessions.

The configuration phase was one of the phases that are not relevant for the development of a prototype. Considering the previously mentioned criteria and constraints, the HSRS was fully defined and the team was left with no other implementation options. Since there was only one candidate solution the project team discussed the application architecture to be used on the HSRS. The project team considered all of the functions that the HSRS needed to implement and decided to use a database to store all the Redbook information and all of the calendar entries. This will be discussed in more detail in chapter five. The group also decided to use a web development programming language that is suitable for database access. Before choosing a

33

specific platform the project team needed to know the operating system of the United Way's web page. This will also be discussed in chapter five.

Since the project team did not have a budget the activities of the procurement phase were not fully implemented. One activity the project team performed was research of other community calendars and web pages that converted an Iris database into a web page. The project team found several other web sites where service providers of larger cities had already made their Iris database available online. The project team also found several varieties of community calendars online. Although the Iris converted web pages appeared similar to the HSRS, the community calendars were quite different. They did not offer the functionality needed for the HSRS. Their security features were particularly weak. It appeared to the project team that they were venturing into new ground with the HSRS.

The design phase was the next logical procedure the project team implemented. The project team assumed that any users of this system would already have the necessary hardware in place or would soon. Therefore network designing within the United Way and other service providers would not have to be implemented. The project team designed databases, user interfaces and programs to implement the Human Services Resource Scheduler. The design issues for these views will be discussed in more detail in Chapter 5. Iris and Hosting Solutions were very important to the design of the HSRS and they will be discussed in more detail in the next chapter.

The activities of the construction phase took the most effort on the part of the project team. This phase spanned all three terms of the project giving it the longest duration of any other phase. The building of the Human Services Resource Scheduler started in December,1998 and continued through March,1999. This process will be discussed in more detail in Chapter 5. The testing of the HSRS with the system owners and users will be discussed in Chapter 6.

Technically, the <u>delivery phase</u> could never have been implemented because the HSRS project did not call to go beyond the design of a prototype. However, the project team performed several of the functions included in the delivery phase. For example, after completing the construction phase, the project team continued to add new features and improve the coding. Also, some changes were made to the format and interface of the web pages after the field evaluations. This kind of continuing development, improvement and maintenance usually never ends for an information system. The delivery phase becomes a continuous process to maintain quality and functionality. The technical support for the HSRS ended at the end of D term when the project ended.

Chapter 5: Technical Systems Descriptions

The IRIS System

"IRIS is an information and referral software program used by over 600 agencies in 5 countries and territories." (Introducing Iris 2.0 Training Video #1) The software is used for storing and generating information across service programs to increase efficiency and organization in client tracking and case management. From family support, to elderly services, to child organizations, IRIS can be applied to a wide range of services and organizations.

Inside the program, IRIS provides a friendly graphical user interface, allowing caseworkers to extract the information necessary in a quick and organized fashion (Iris Information & Referral Software, 1999). From searching by subject keywords to generating fast and accurate statistics reports, IRIS tracks down the clients needs and displays the referral information. Searches can be divided among different categories from zip codes to countries to programs or any other combinations. Taxonomy searches and other complex keyword searches are also part of the program. Reporting features in IRIS promises customizable reports that gives users the option to export their data to Lotus 1-2-3, Excel or other market available spreadsheet software for further data analysis.

In addition to these features, both IRIS version 1.0 and 2.0 can scale to handle systems with millions of records, providing unnoticeable performance changes. At the same time, remaining fully year 2000 compatible with uptime stability, IRIS v1.0 was designed to run under the MS-DOS platform, while IRIS v2.0 can extend its networked environment across computers using Windows 95, 98, NT, Novell, LANtastic, Banyan Vines, and AS400 networks. It is a truly durable software, flexible enough to stretch across multiple platforms, while fitting

into organizations operating under different systems with entirely different needs. Though the word Network here is by no means related to the Internet or mass public access with IRIS.

Currently used by United Way of Central Massachusetts is IRIS version 2.0, which runs under United Way's PCs equipped with Microsoft Windows 98. With the computers networked together in a <u>LAN</u> internally in the Worcester location, the software allows data sharing and file transfer capabilities inside the site. By default, IRIS has a feature that prompts for the organization or subject category and then extracts information and referral data onto HTML format. Internet Browsers can interpret files in this format into actual information contents once the HTML files reside on the web servers. Meaning these files can be made publicly available via the Internet. Perhaps the only limitation of the software is its inability to update or change the extracted files directly through the Internet.

When extracting the HTML files out from the IRIS software program. One needs to make sure an open directory is readily available for the storage of the extracted files. In addition to that, the file "foxtools.fll" needs to be copied to the folder where the files will be stored to prevent a PRO2ERROR message from the software. Depending on the setting of the IRIS system, the streaming of the files will prompt for a printer with "generic / Text only" format. If a printer with such settings do not already exist in Windows, the HTML files generated may become completely corrupted with strange ASCII characters encoding. This will be explained further in detail in the appendix section.

Hosting Solutions

Hosting Solutions specialize in high-end web hosting for small to mid-sized businesses and personal web sites. Even prior to the start of the project, Hosting Solutions already hosted a

web site for the United Way of Central Massachusetts. With its service up around the clock, 7 days a week, Hosting Solutions host hundreds to thousands of web sites.

From the hardware standpoint, Hosting Solutions uses Intel Pentium II 300 MHz web servers (http://www.hostingsolutions.net/network.html,1999) , connected directly to the Frontier GlobalCenter backbone via a high-speed Ethernet connection. Though the Frontier GlobalCenter acts as the network backbone for numerous other companies. Hosting Solutions do not have exclusive ownership of Frontier GlobalCenter. Using exclusively SCSI hard drives with RAID configurations, the service backs up all web site data in real-time. From the software standpoint, all servers operate under Microsoft Windows NT 4.0 Server Edition with Internet Information Server 4.0 installed. No Unix-based operating systems exist or are used to manage any portion of the sites.

United Way is currently under the basic hosting plan with a disk space storage limit of 25 megabytes. Currently the hosted sites are not metered, meaning there are no file count upload or download limit restrictions. Also there are no file transfer limits; one can upload an infinite amount of data as long as the stored data doesn't exceed the actual 25 megabytes quota. Along with the basic plan, 10 POP3 email accounts are also included through Microsoft Exchange Server 5.5 running under Windows NT 4.0 Server. These email accounts can be used as autoresponder addresses by the account users or web developers, as well as forwarded to other accounts an unlimited number of times.

Access to the hosting solutions system requires username and password authenticity. Currently only 1 ftp account is given with the basic plan, leaving ftp as the only option of transferring files onto the server. And 1 dedicated IP is given to host the web domain as well as the ftp address. The bandwidth, data transfer capacity, is also not metered. Leaving your site open to the busiest traffic without restrictions.

All WebPages are hosted under Internet Information System 4.0. This means that it is not Unix oriented, and has a different variation on the pages hosted. CGI-Bin is supported, but without a traditional Unix based system, the service will have a different interpretation of the Perl codes (McMillan,326). NT Perl will be required, and the hosting service won't recognize Unix commands or other Unix function calls with Perl. On the client side web development, Java applets and JavaScript is allowed. On the server side, ASP, Active Server Pages, is enabled with VBScript and JScript enhancements. FrontPage 98 extensions are also available upon request.

Active Server Pages has the ability to call upon Access Databases anywhere in the server's file system using ODBC technology. ODBC represents Open Database Connectivity, (Coronel,631)and it stands as a language allowing the web interface to communicate with the contents in a database file as long as a DSN is installed. To setup the DSN with Hosting Solutions simply email or call the administrators to request that one be made. One is already used to create the DSN called "unitedwaycm" to communicate with the current Access Database in the United Way directory. All sites hosted under Hosting Solutions currently cover 2 free DSN links per domain. Any additional DSN made under the same basic plan will be charged. Though a rare and undocumented method of DSN-less connection do exist.

With the current network structure, Hosting Solutions currently have a 1000 connection limit, meaning that up to 1000 separate users can connect to the same web site at one time before rejecting any new users. This number may seem low, but having 1000 people hit the same web site simultaneously is not an everyday phenomenon. As of January 26, 1999 the Frontier Global Center, Hosting Solution's upstream provider, upgraded their networks to an OC-12 circuit backbone. Due to a number of complaints with the poor network traffic and transfer packets loss at Frontier GlobalCenter, the new circuit now serves up to a speed of 622 Megabits per second.

Once again, Hosting Solutions is not the only service using Frontier GlobalCenter's OC-12 circuit, meaning they have to share the same medium with other organizations as well.

It is absolutely crucial to understand the structure and software setup of the IRIS database and the Hosting Solutions sites structure prior to developing any web site for United Way. What is applicable and functional under the Unix apache web servers will not work with the NT environment. Also any Unix functions and scheduled processes will also not work in this server. Special precautions need to be taken before the extracting of the HTML files from the IRIS database. Not all information stored should be made publicly available. Files extracted consisting of the *** characters should be hidden, and not be made visible to the public. Not all HTML files streaming out of IRIS follow the same field format either. It is definite that much reformatting needs to take place before the HTML information becomes readily available for insertion to the Access Database.

Chapter 6: Programming with ASP, SQL, Access Database

Active Server Pages, or ASP were utilized in this project as the interface between the users and the database. ASP allows for the use of most main stream programming languages to be utilized for behind the scenes programming in a web page. Since the project required that people directly access the First Call's Database through the Internet, ASP was chosen as the platform.

The group was all enrolled in WPI's Telecommunications class, which was teaching Active Server Pages. Since the group was in the process of learning how to use the pages, the group decided that the best course of action was to use ASP as the interface. The other possibility has been to use Perl, which has been used in the first prototype, however since only one group member knew Perl, and the entire group was learning ASP it was decided to go with ASP.

Once the decision to go with ASP was made, a programming language had to be chosen. Active Server Pages by default use Visual Basic Scripting. All three-group members had taken a class in Visual Basic 4.0 and so VB scripting did not have a large learning curve (Walther,260).

All the web pages, which acted as an interface for the project, were writing in a basic text editor such as Notepad. The commands of read, write and modify were used throughout the project as basic building blocks. The original codes for these basic functions were obtained from a web site. Whenever a certain command needed to be implemented, it would be pasted right into that section of code and then modified to be applicable in that section of code. Then, the web pages were uploaded to the server where they could be tested.

VB scripting makes it extremely easy to directly access an <u>ODBC</u> compatible Database, such as Microsoft Access. Fortunately, the Internet Service Provider not only supported Active

Server Pages, but also supported Microsoft Access Databases.   The logical choice from there was to have the Database be a Microsoft Database.

The database itself was created during the initial stages of prototyping.   It was the groundwork for the system in that not only did it contain all the information that was held in the system but also dictated the structure that the data had to follow.   The first focus was to make sure that the database would capture all the required fields.   Looking at the current requirements of the system solved this.   Then the special requests of the project were considered and implemented into the database.

The problem that arose next was to find a way to move the files from the current Database located at the United Way of Central MA's main Worcester Branch to a Microsoft Access Database housed on Hosting Solutions.

The major problem with getting the two databases to have the same information was that they were not compatible databases and so there would have to be some intermediate step.   Since this process was going to take time to program it was decided that it would be completed somewhere near the end of the programming phase.   However, it was decided that an intermediate step was to be utilized.

The programming that was completed first was the basic commands that would read and write from the database online.   Although this seems like it would not be too hard, from complications in both code that was found online and issues with the Internet Service Provider, it proved to be a hassle.   To send commands to the Database the programming language, Structured Query Language, SQL was utilized.   This is a standard language that ODBC compatible Databases utilize.   That last fact will be important for future groups who are to update the database because if they use an ODBC compatible database that is stronger than

Microsoft Access, they will be able to directly dump it into the programming code without having to make massive changes.

The SQL command determines just what is being read, or written and whether or not the results are to be sent back in order or just as is.

Read : to read from the database, a line of code that contains the SQL code which is the instructions for the database is implemented in visual basic. The SQL command determines just what is being read, and whether or not the results are to be sent back in order or just as is.

Write: to write to the database, a line of code that contains the SQL code is implemented in visual basic. The SQL command determines where the results are being written along with how many times to write it.

 Modify: to modify an existing record, a line of code that contains the SQL code is implemented in visual basic. The SQL code determines what is being written and over which record is it written over.

To get the web pages to use SQL you had to create a <u>DSN;</u> open the database source; do your process to the database, and then close the <u>DSN</u>

(http://www.attitude.com/users/kathi/asp/start.html, 1999). The exception to this is if it was to keep using a particular table from the database, then one could leave the database open until all the coding was done.

With the basic coding work done, the programming of the interface could begin. Information for the interface was pulled together from interviews along with recommendations from Jean Strock. Slowly the program started to take shape and soon the program was complete except for the part of the system that was to take the information from the existing database at the United Way of Central MA's location and put it online.

A problem arose: The current database located at the United Way of Central MA was made by IRIS. The IRIS program is more than just the database; it also includes the interface along with a number of other features for the database; for example, the ability to take the current database and turn it into web pages. The web pages made by IRIS had to be changed so that an organization could search through the records that were stored, whereas with IRIS it was not possible. The requirement for this project was to have a search engine to help make it possible for someone to look up a number of organizations that fit a particular object. Therefore, by taking the database and making it into an Access Database the group would be able to make the search engine along with the ability for an organization to update its particular listing.

The plan was that the group would just take the streamed out HTML files that the IRIS database would provide and then write a program that would put them all into the Access Database. The group was counting on the fact that since the IRIS program was going to stream the database out it would do it uniformly; however the group soon learned that was not the case. At first the output seemed to be accurate with the database; however the bump in the road was hit when IRIS tried to turn a record into an HTML file, and the record was not complete. This caused the IRIS program to produce a web page that was not uniform. In turn, this made it impossible for our program to read the file and input it into our database.

A number of different solutions were attempted and finally a filtering method was produced. Each file produced by the IRIS had special HTML code inside of it. For example, if a word appeared in bold the code in HTML would be <B> word in bold</B> and so when a file was produced with the incorrect number of <B> in it, it was determined that it did not conform to standards and therefore would not be processed. This caused a number of records to be stepped over and so new filters had to be developed.

For files that did not make it through the first filter, a new approach was taken; these files were searched for what information was missing. Once it was determined that even just a little bit of information was salvageable, the information was put into the Access Database. This was both a good thing and a bad thing. It presented the possibility for information to be input into the database that may not be perfect; however, it was discussed with Jean Strock and was determined to be better than having less then 33% of the files make it in.

By going through this newer filter, 70-90% of the files were at least partially entered into the database. This was a lot more files and considering that the Iris Database had holes in it; a good amount of information was saved. However a new problem arose: what to do about the files that did not make it through the process. This was confronted by making the administration input screen list what files were being processed and whether or not they were put into the database. Then, the administrator could go back and physically put into the system the information that didn't make it.

Chapter 7: Field Evaluation

The field evaluations were actual presentations laying out the problems that were originally posed to the group. When given, they are a demonstration of the prototype which goes over two main portions of the system: the calendar and information referral system. The calendar portion consisted of a calendar, which organizes events based on information inputted. Respectively, the information referral system acts as a database replica of the actual IRIS database. The feedback and comments received in return are crucial information that reflect our performances and progress. They are good indications of how close our prototype actually comes to matching the current system. Also, how efficiently we are solving the underlying problems in their opinion.

General Demonstration Description:

The following is a brief description of the format that the demonstrations followed. All of the demonstrations started off at the intro screen. (*See Figure 7.1*) This screen serves as the startup screen for the entire project. It includes links to all the features that the program has to offer. At the startup of the presentation, the group described the current situation and how the program was to alleviate some of the bottlenecks in the system. To get the users more tuned in with what was going on, different scenarios were utilized.

Figure 7.1
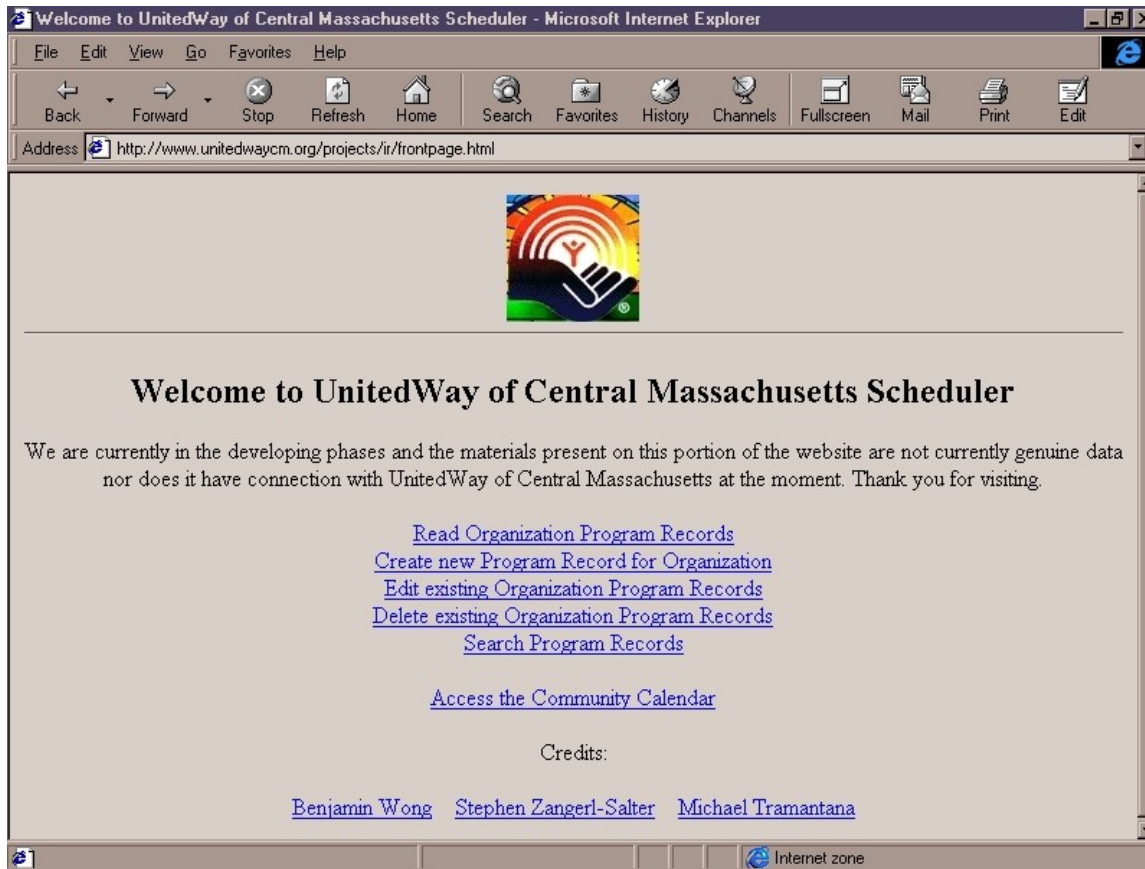
To demonstrate the first feature of the system, the read of the database of service providers in the Redbook, the audience was given the following scenario: A Social Worker was looking for a particular service provider and knew the name of it. By clicking the link "Read Organization Program Record" (*See Figure 7.1*) the program brought up the Read Page (*See Figure 7.2*).

Figure 7.2
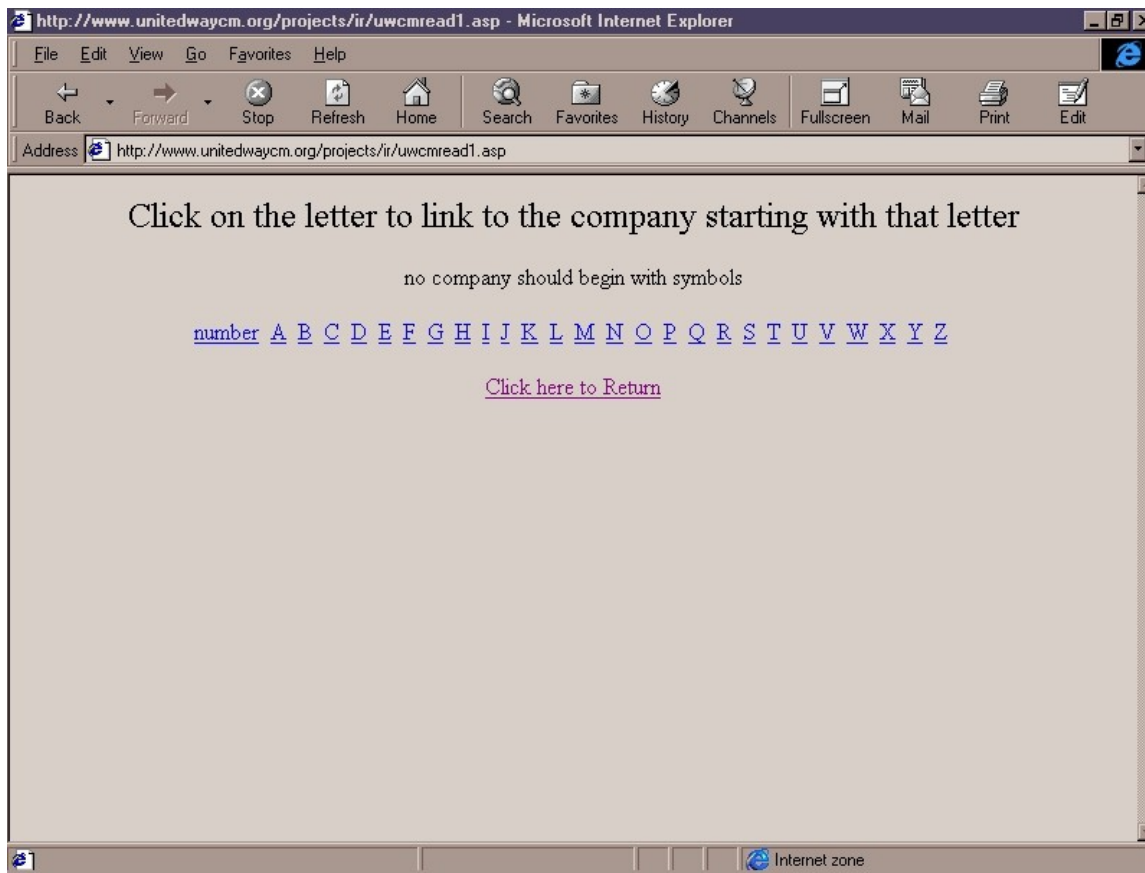
This page listed the set of alphabets across the top, and gave instructions as to what to do. Since the social worker knew what the name of the service provider was, they could then click on the appropriate letter to list all the agencies that began with that letter.

The scenario was shown that they were looking for the United Way of Central MA.. This meant that the social worker would click on the U. By doing so the program displayed all of the programs that started with U (*See Figure 7.3*).

Figure 7.3
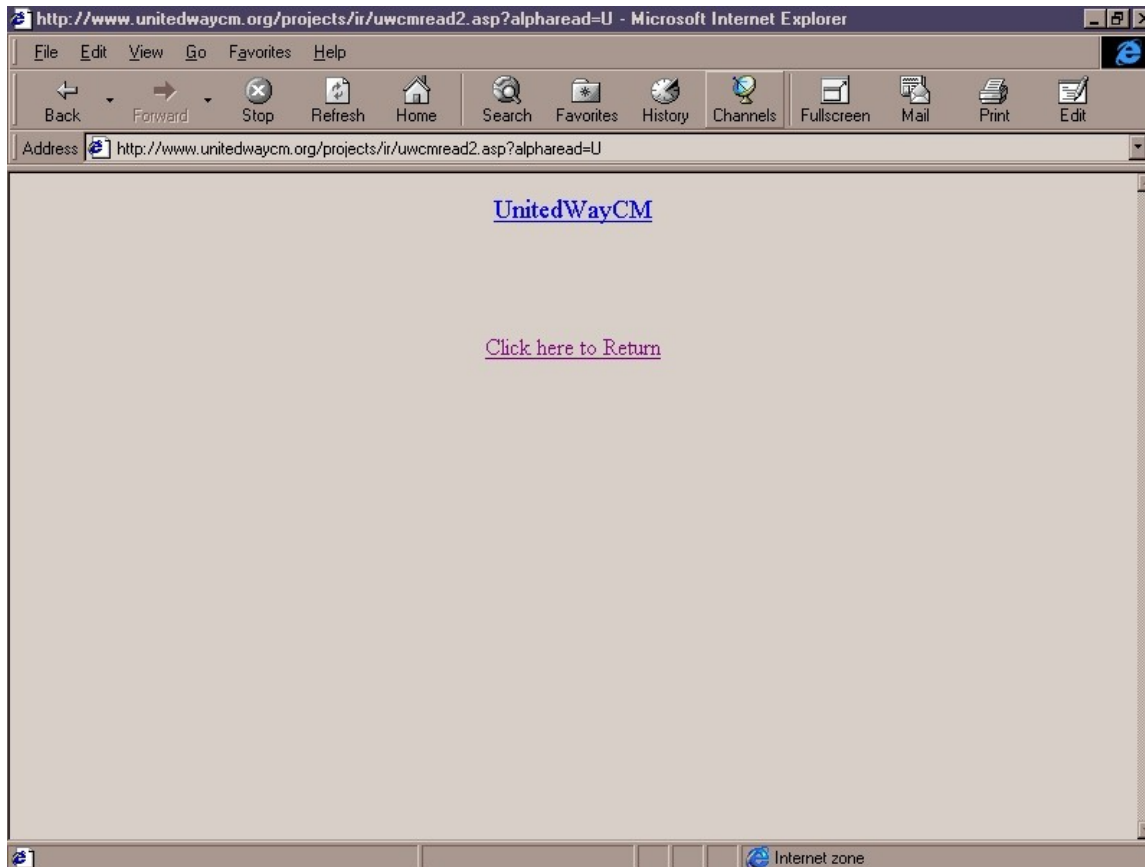
Then the social worker would click on the name of the organization that they were looking for: UnitedWayCM. This would display a form containing the information about that organization (*See Figure 7.4*).

Figure 7.4
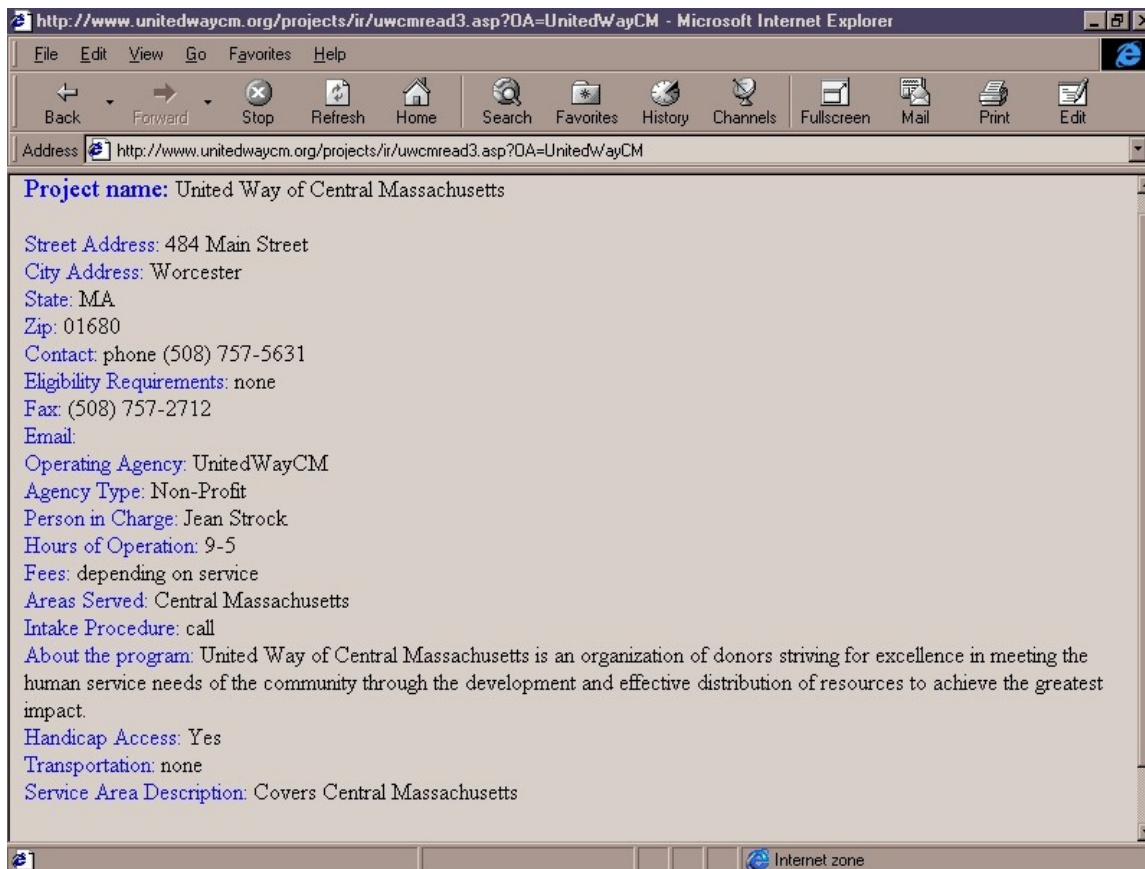
The next scenario demonstrated was for a service provider to add a program. Again the user starts out at the main screen (*See Figure 7.1*). Then the choice "Create new Program Record for Organization" was selected. This brought up a password verification screen (*See Figure 7.5*).

Figure 7.5
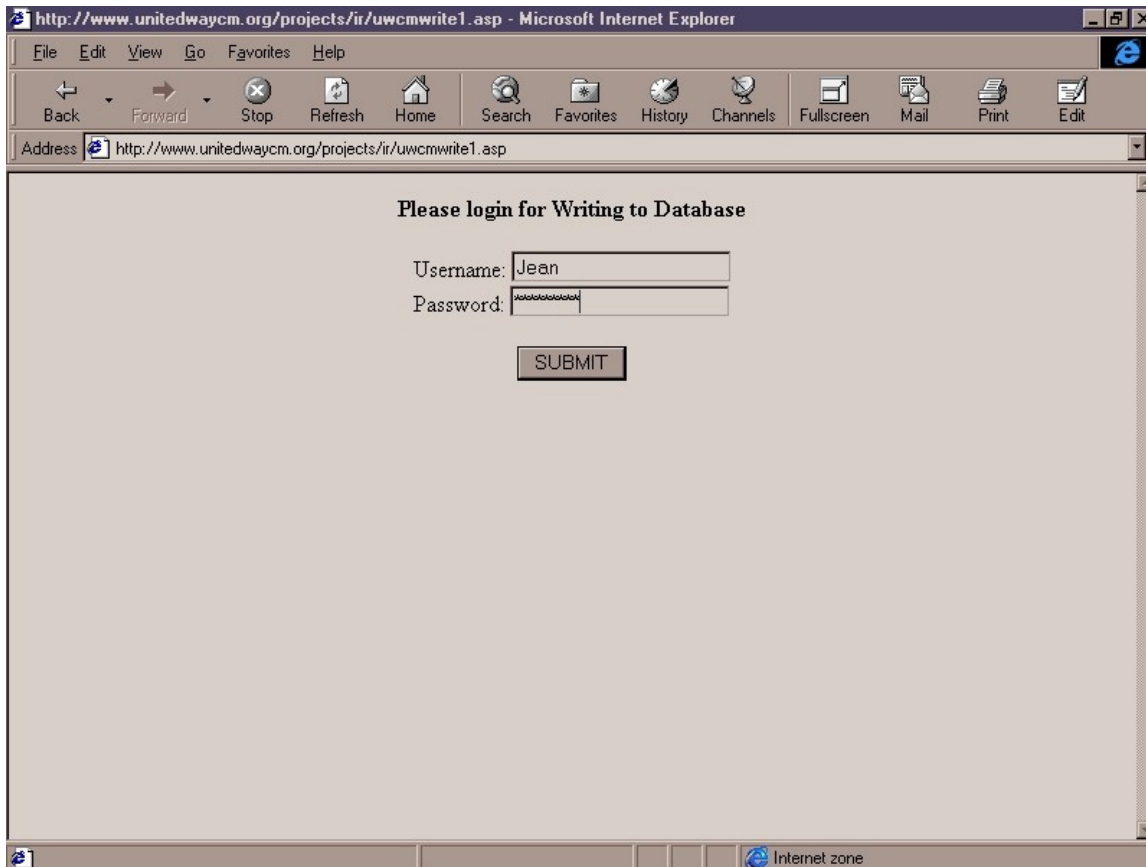
At this point the group gave a quick description of the security protocols embedded in the system. This included the password screens and special lines of code which made sure that users could not just type in the URL of the screen; rather, they had to go through the sequence of logging in to be able to get to screens.

Once the user was logged in, a form appears for them to fill out. This form was to contain all the pertinent information about the new program including contact information (*See Figure 7.6*)

Figure 7.6

After completion of the form, the user was given feedback upon the outcome of the form

(*See Figure 7.7*).

Figure 7.7
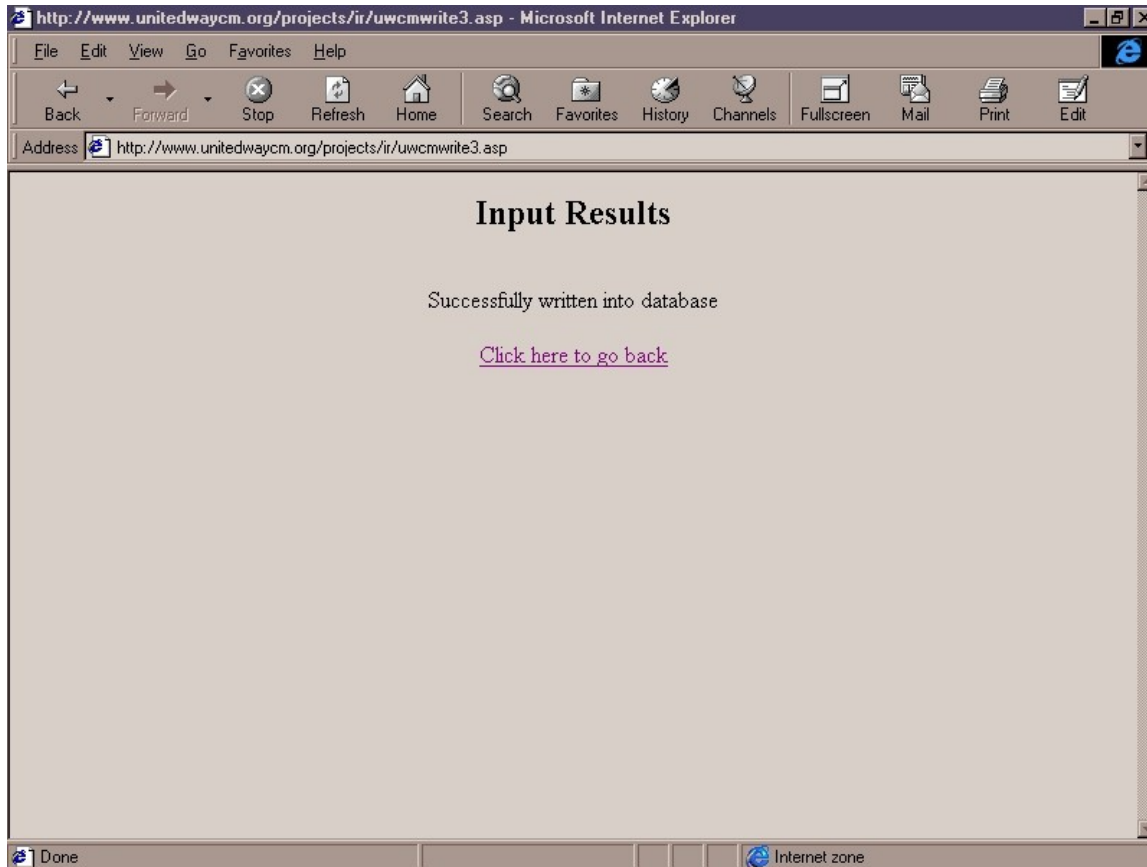
The next feature of the system is the Modify function. Under the scenario of a service provider wanting to change some information about one of the their own programs. The main screen was again brought up (*See Figure 6.1*) and the link "Edit existing Organization Program Records." brought up a password verification screen (*See Figure 7.8*).

Figure 7.8
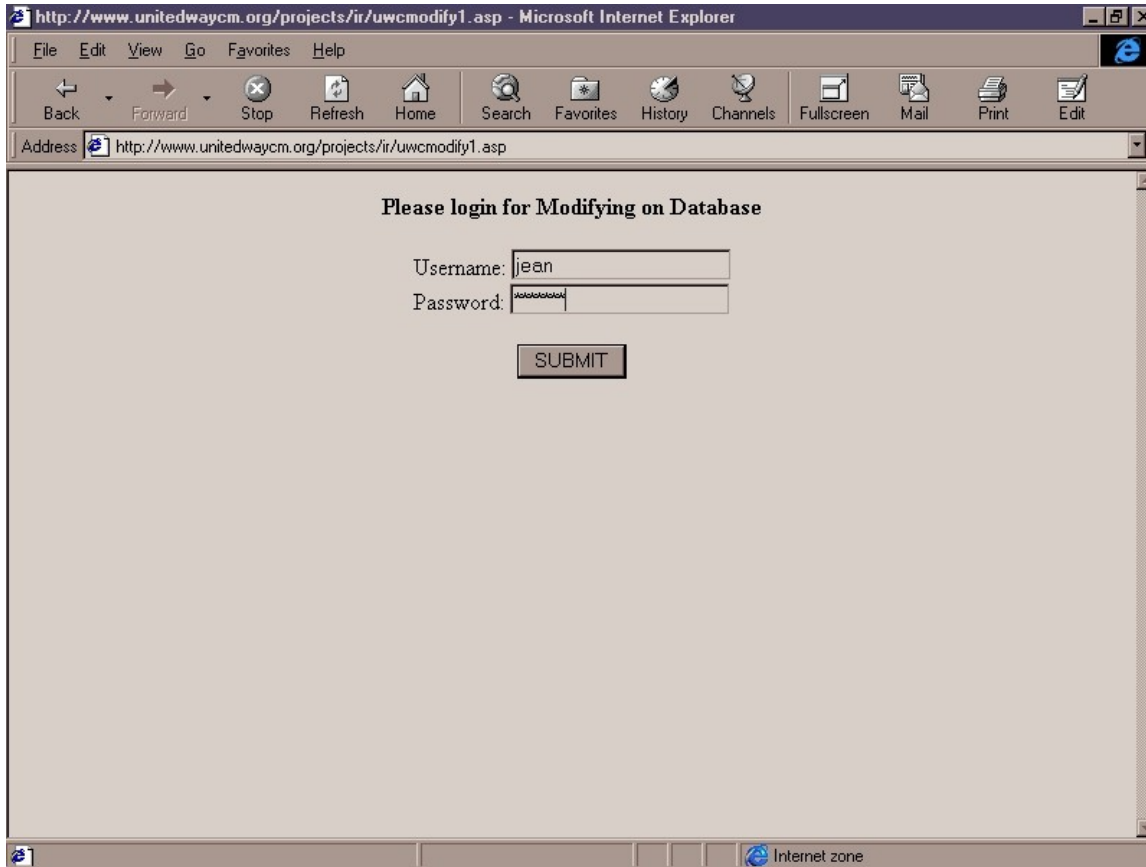
Upon logging in, the user was brought to a listing of all of the different projects that their particular organization had in the database (*See Figure 7.9*).

Figure 7.9
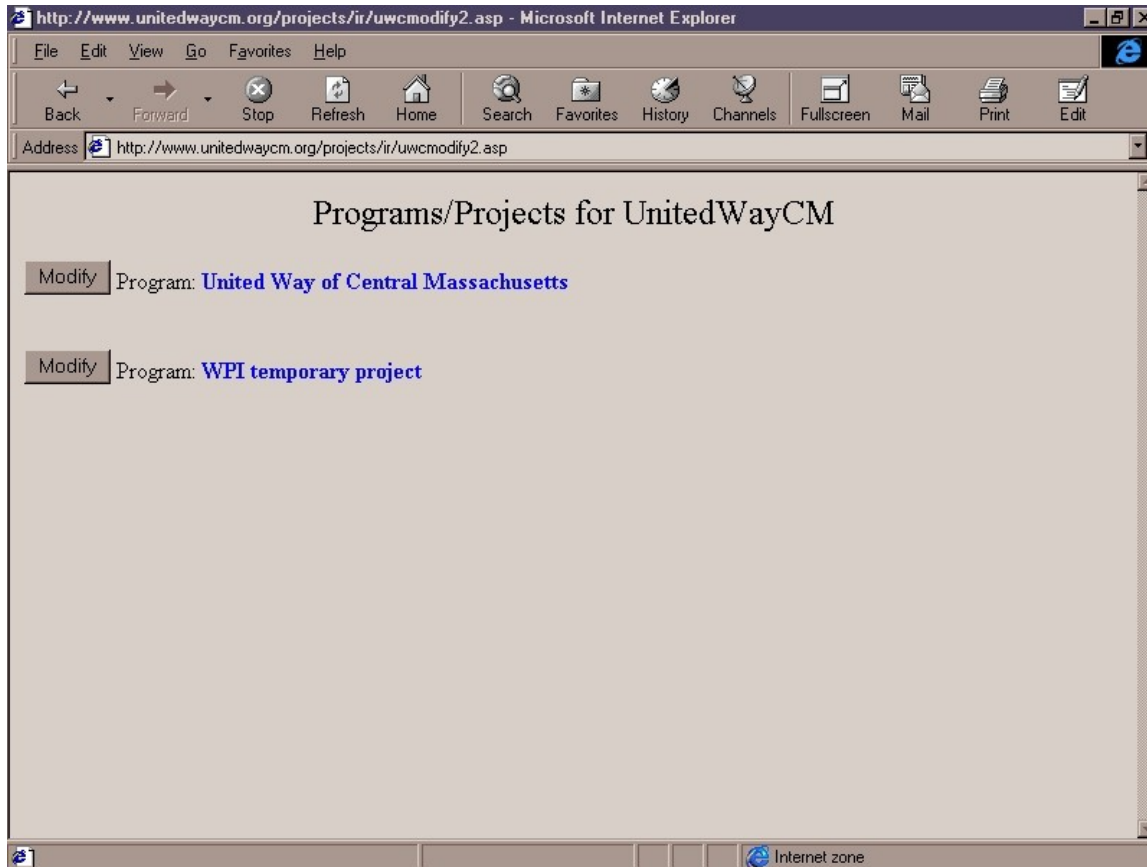
Upon clicking on the organization that they chose, a form was brought up which displayed all of the information about that particular event. This screen allowed editing of the event by clicking in the box, editing, then the submit button (*See Figure 7.10*).

Figure 7.10

By clicking the submit button, the program gave feedback as to the operation (*See Figure 7.11*)

Figure 7.11
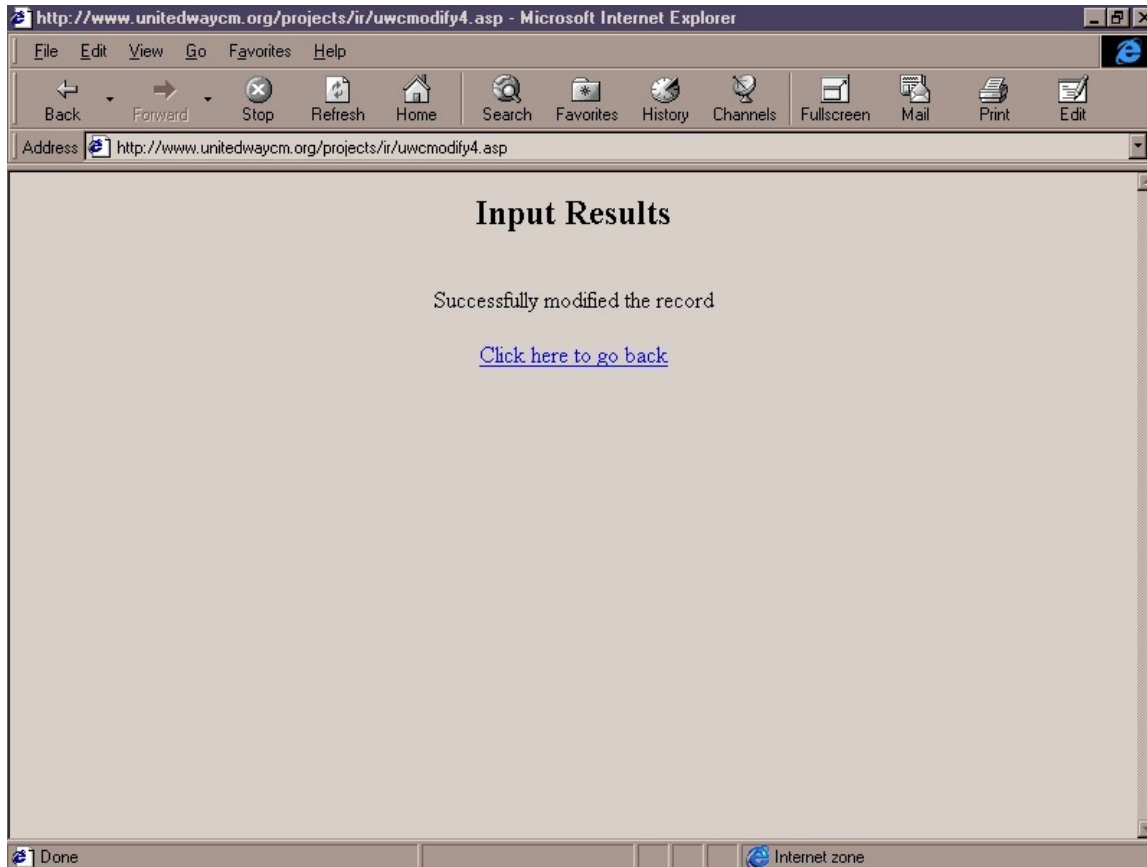
The next feature is the Search feature. The scenario that was described to the user was of a social worker who was looking for all the United Way programs offered. The user was again brought to the main screen of the program (*See Figure 7.1*). Then by choosing "Search Program Records", the Search Screen was displayed (*See Figure 7.12*).

Figure 7.12
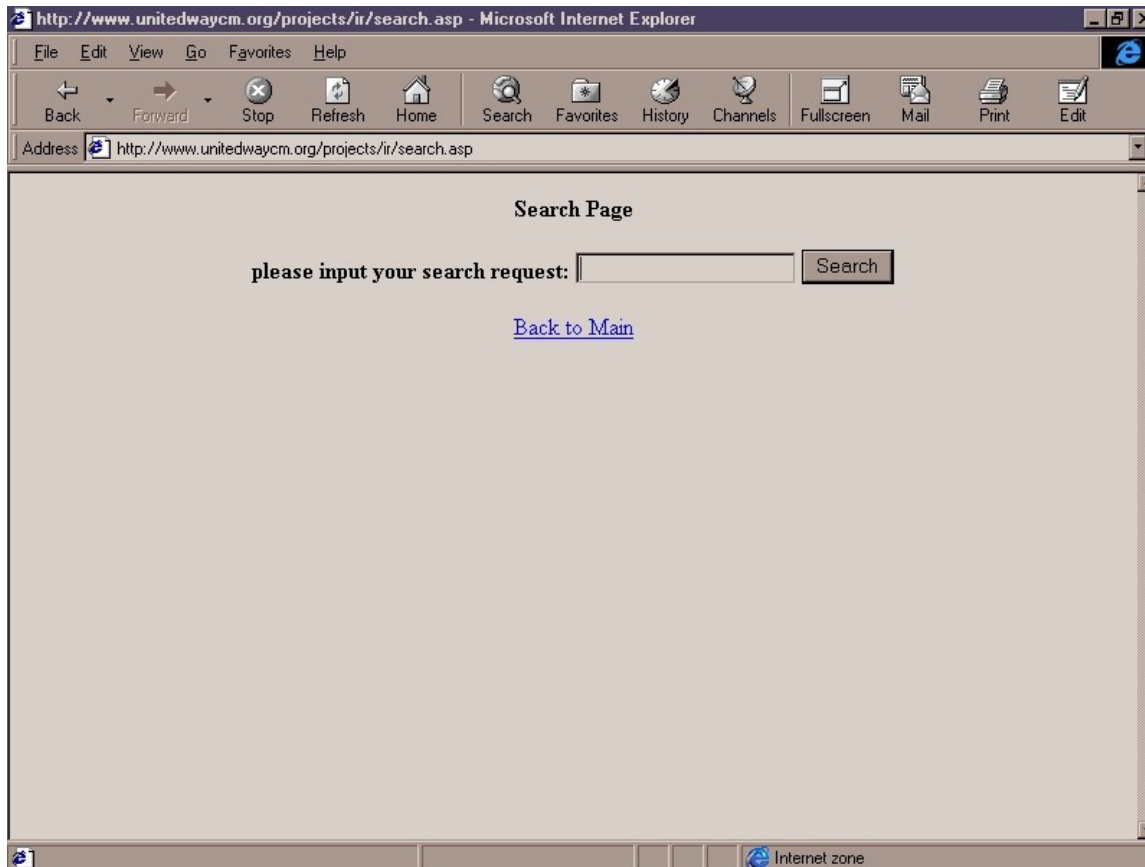
This screen directly allowed the user to type in any particular subject they were looking for. The scenario given was to search for "the United Way". Clicking the "submit" button causes the results of the search to be displayed along with what the user had searched for (*See Figure 7.13*).

Figure 7.13
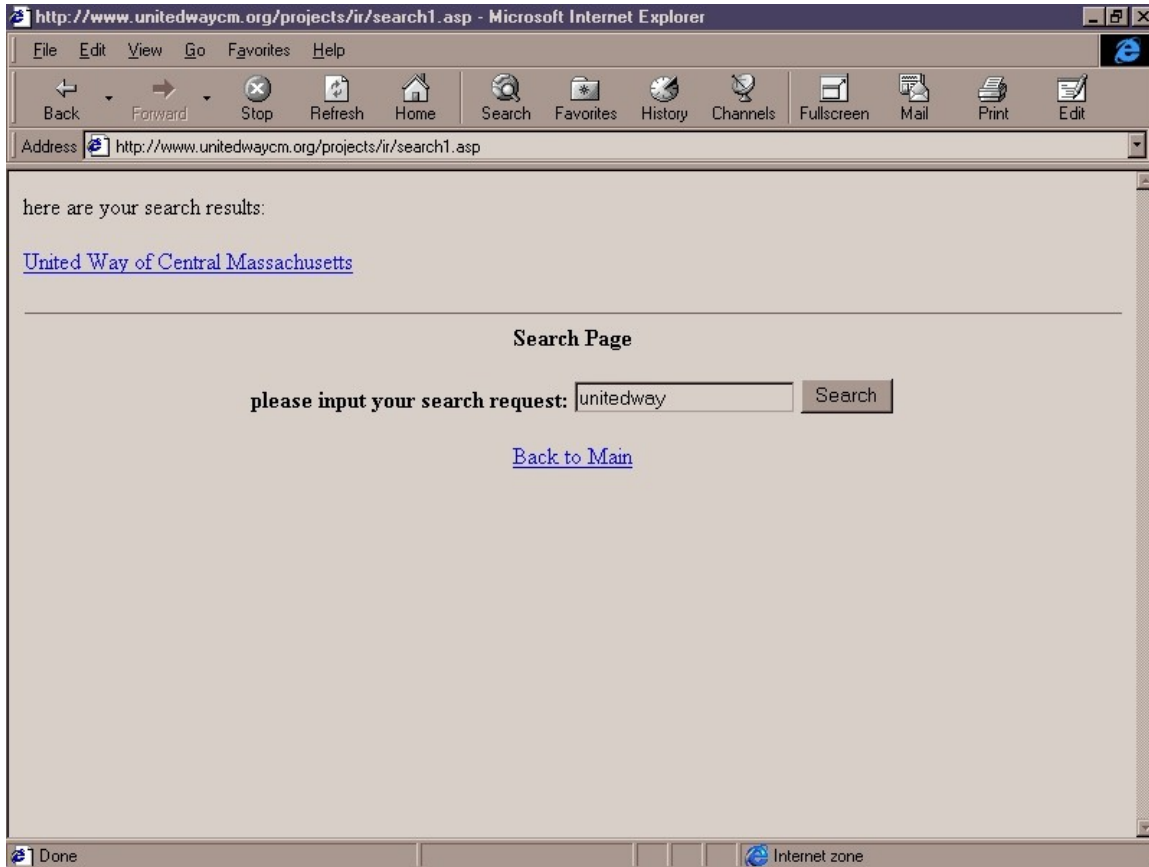
By clicking on one of displayed names, a form was brought up which displayed all the information about that particular organization (*See Figure 7.14*).

Figure 7.14
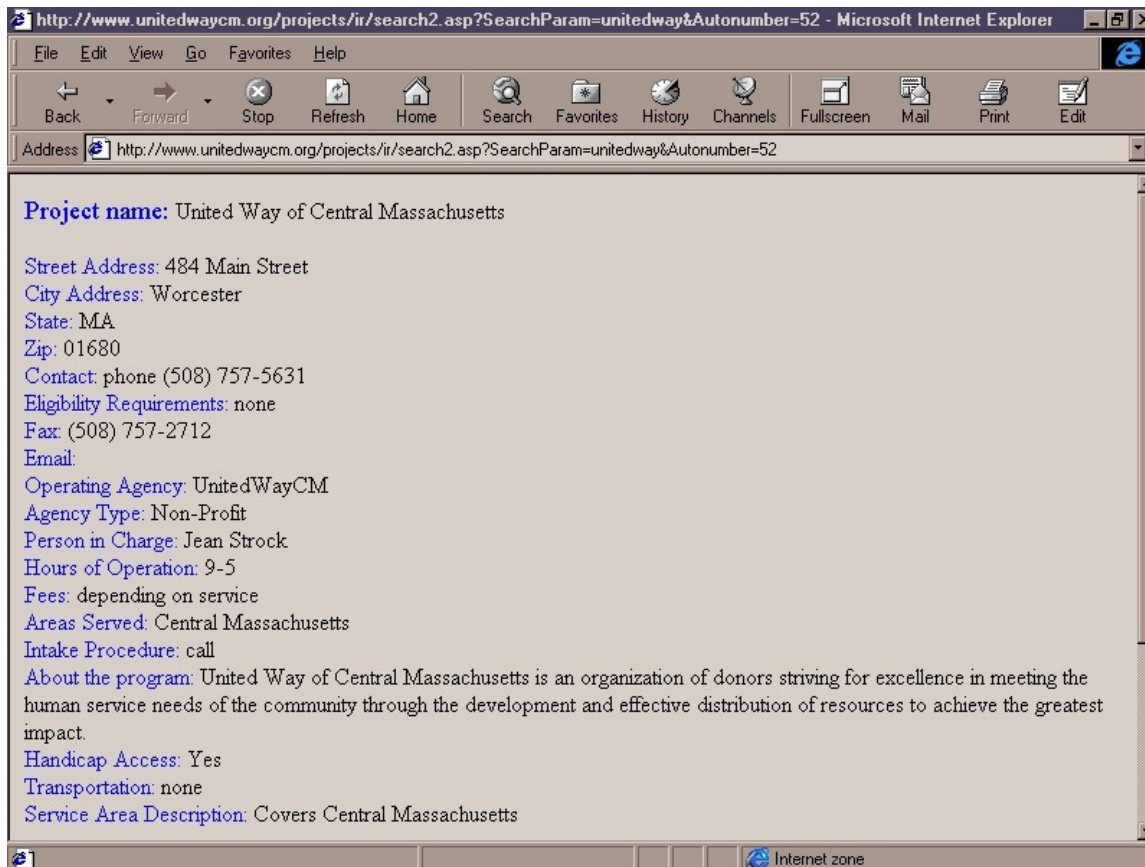
At the bottom of this form was displayed the search window along with what the search had been. This allows for quick re-listing of the search, or easy modification of the search parameters (*See Figure 7.15*).

Figure 7.15
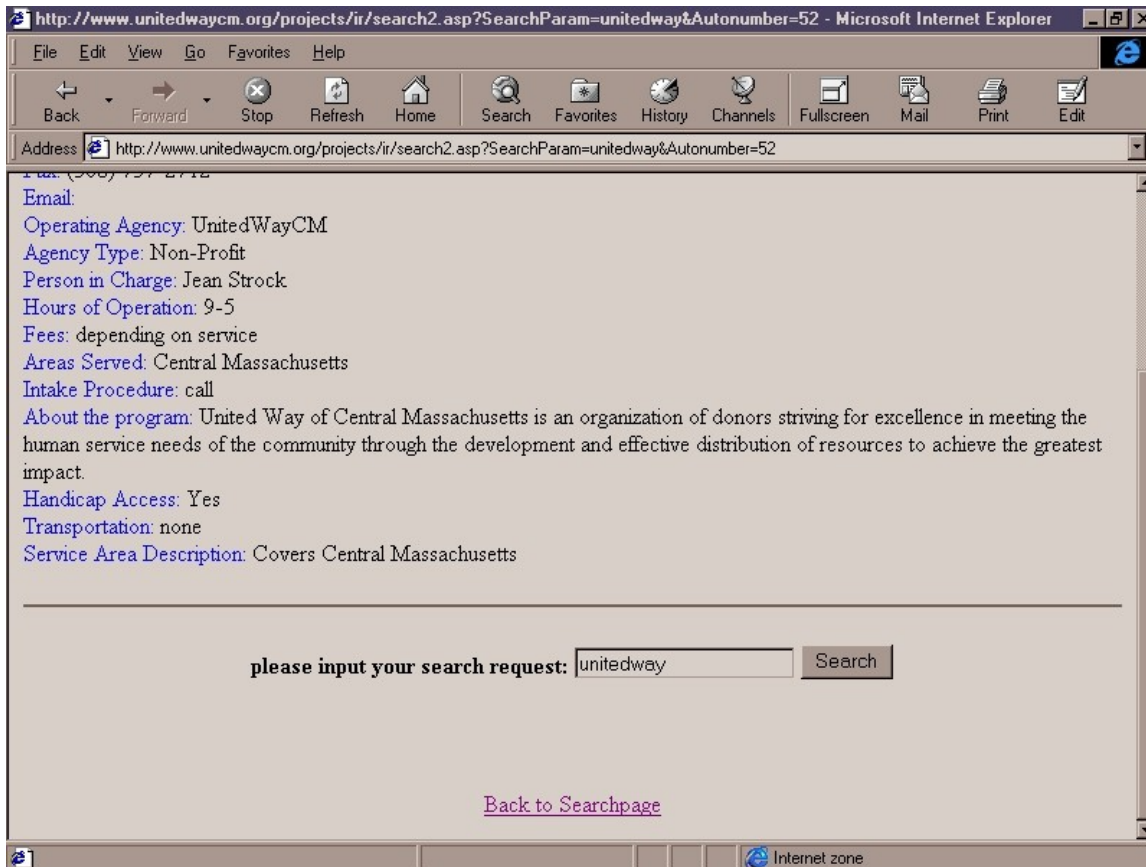
The next feature of the system that was demonstrated was the Calendar. The demonstrators gave the scenario of how two organizations had planned to give a meeting on the same thing the same day and of how this lack of communication had caused a lot of time and resources to be underutilized. By utilizing a central calendar for the community the organizations could avoid such issues and perhaps collaborate a little more easily on projects.

The main screen was again brought up (*See Figure 7.1*) and the link "Access the Community Calendar" was chosen. This caused the program to display the calendar's main interface. From here the user was able to have access to all the features of the calendar and still be able to easily return to the main screen(*See Figure 7.16*).

Figure 7.16
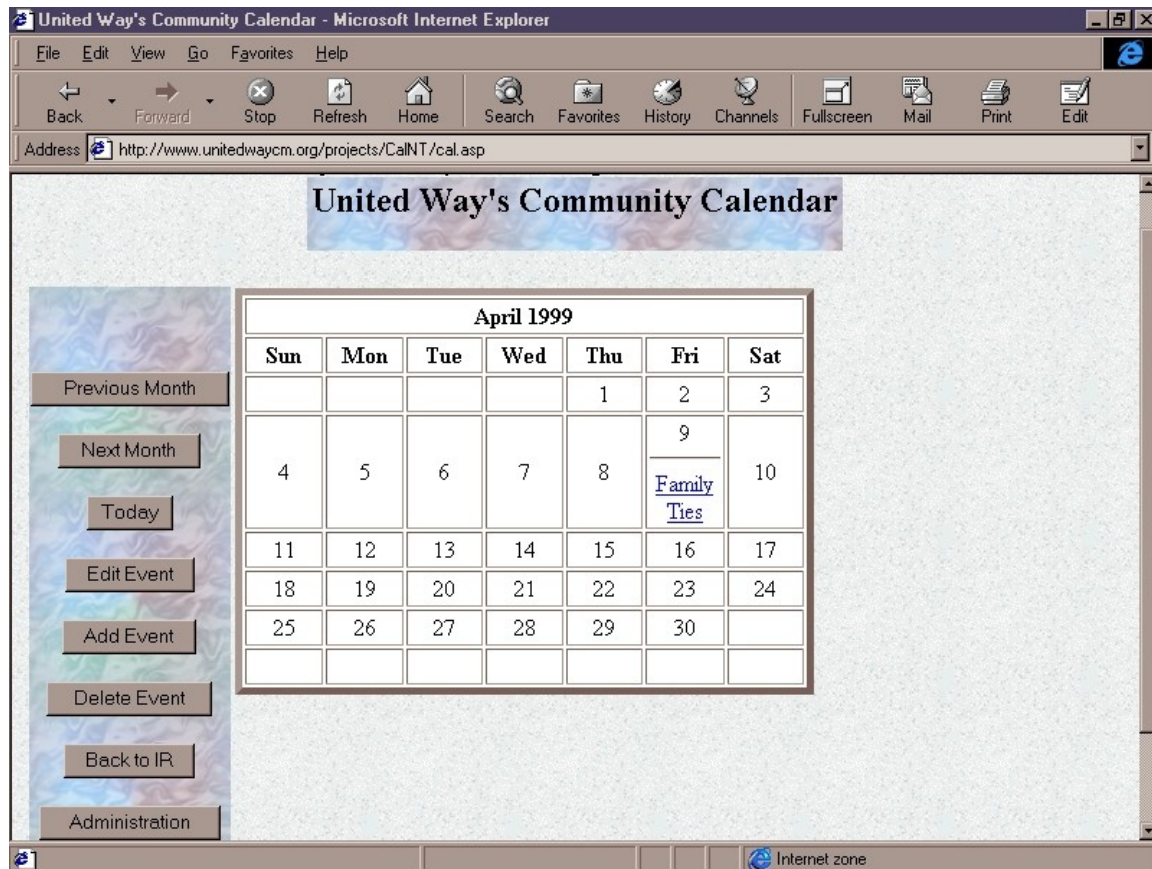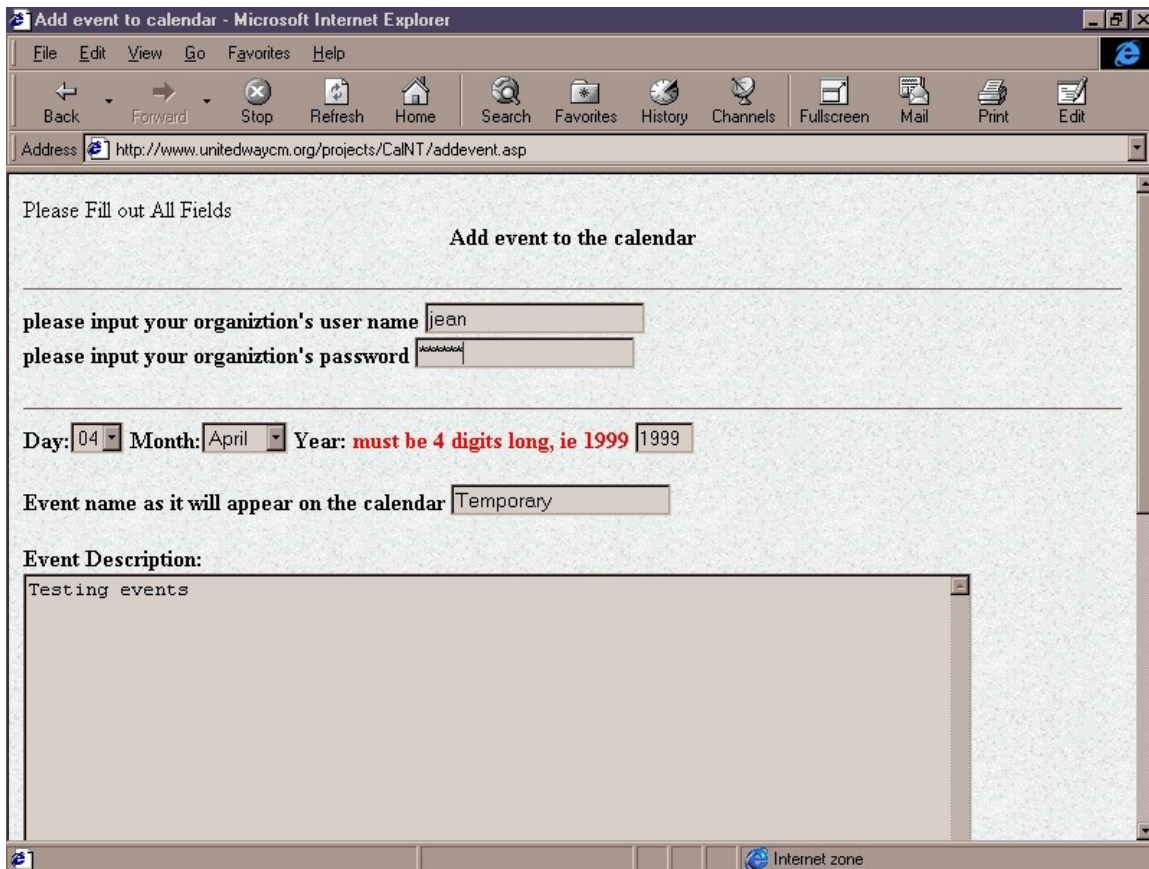
The bar at the right side of the screen (*See Figure 7.16*) contained all of the navigational components of the calendar section including the ability to move to other months. The calendar by default opens to the current month. The switchover between months can be seen between Figure 7.16 and Figure 7.17.

Figure 7.17
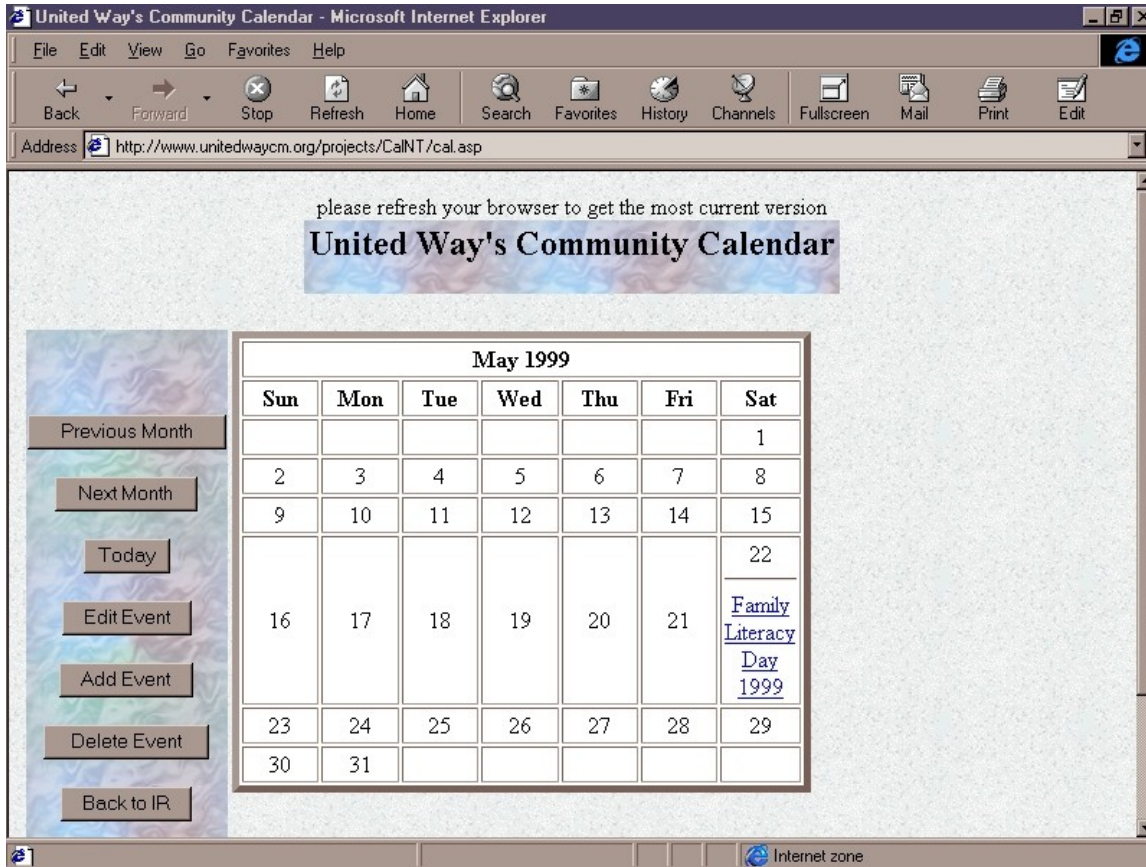
The group told of the different functions applicable from this screen. The first one demonstrated was of the Add function. From the main screen of the calendar (*See Figure 7.17*) the Add button was clicked. This brought up a form that required the user to fill out their password and username along with all the information about the event that they wanted to add to the calendar (*See Figure 7.18*).

Figure 7.18

Upon completion of this form the user was brought back to the main calendar screen (*See Figure 7.19*) which displayed the new event added.
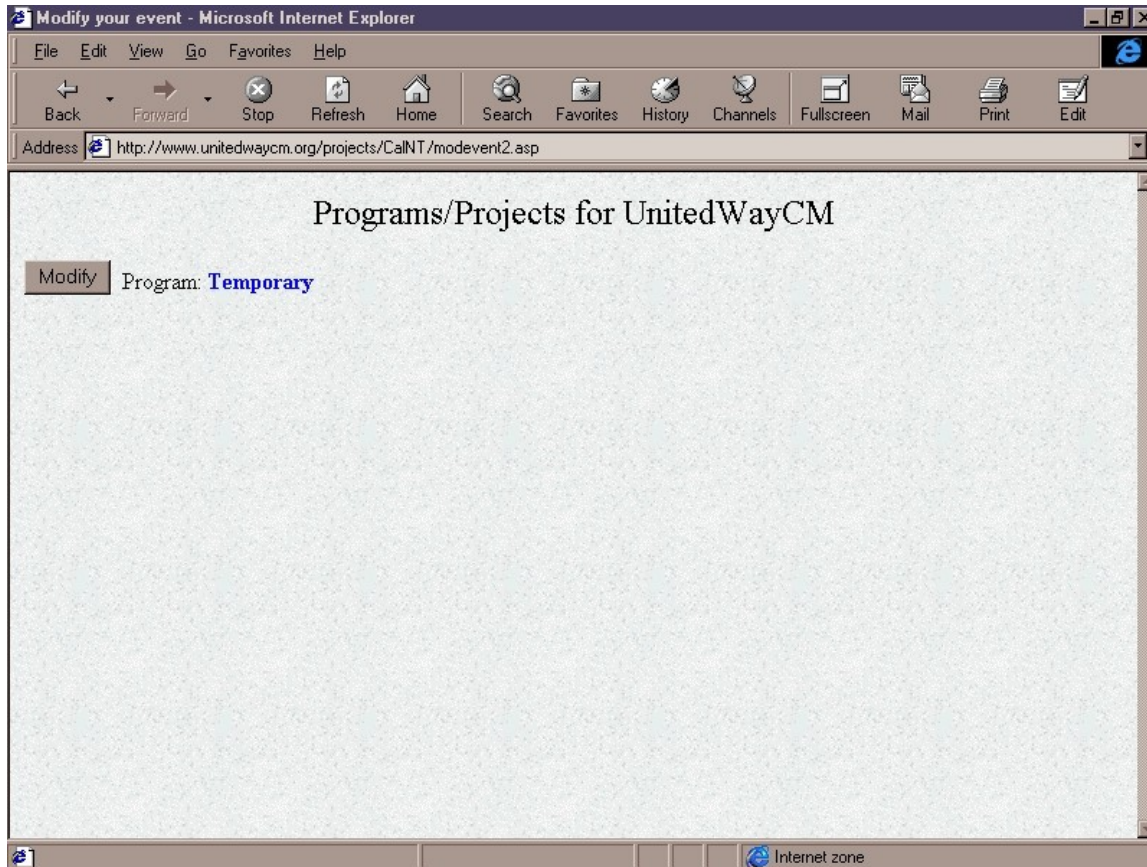
Figure 7.19
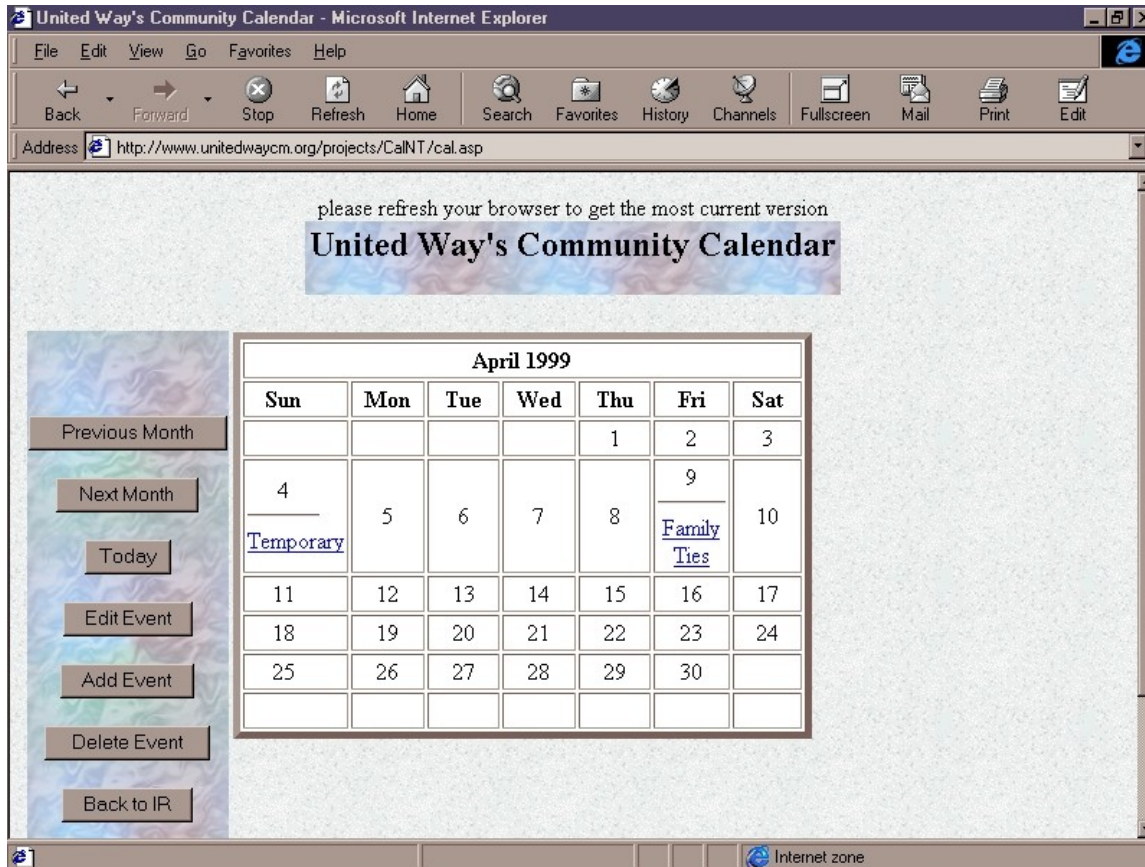
The next function that was demonstrated was the Edit function of the calendar. The Edit Event button was clicked (*See Figure 7.16*). This caused the program to bring up a security screen that required the username and password (*See Figure 7.20*).
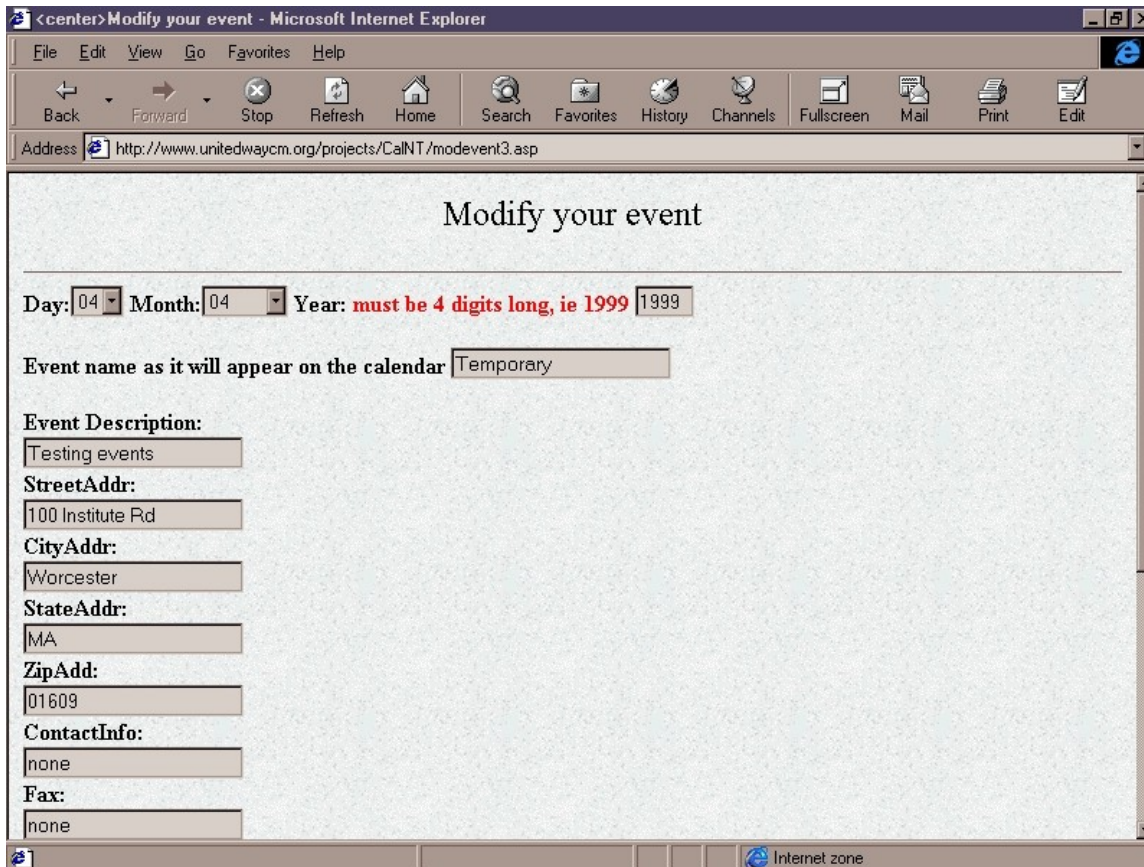
Figure 7.20
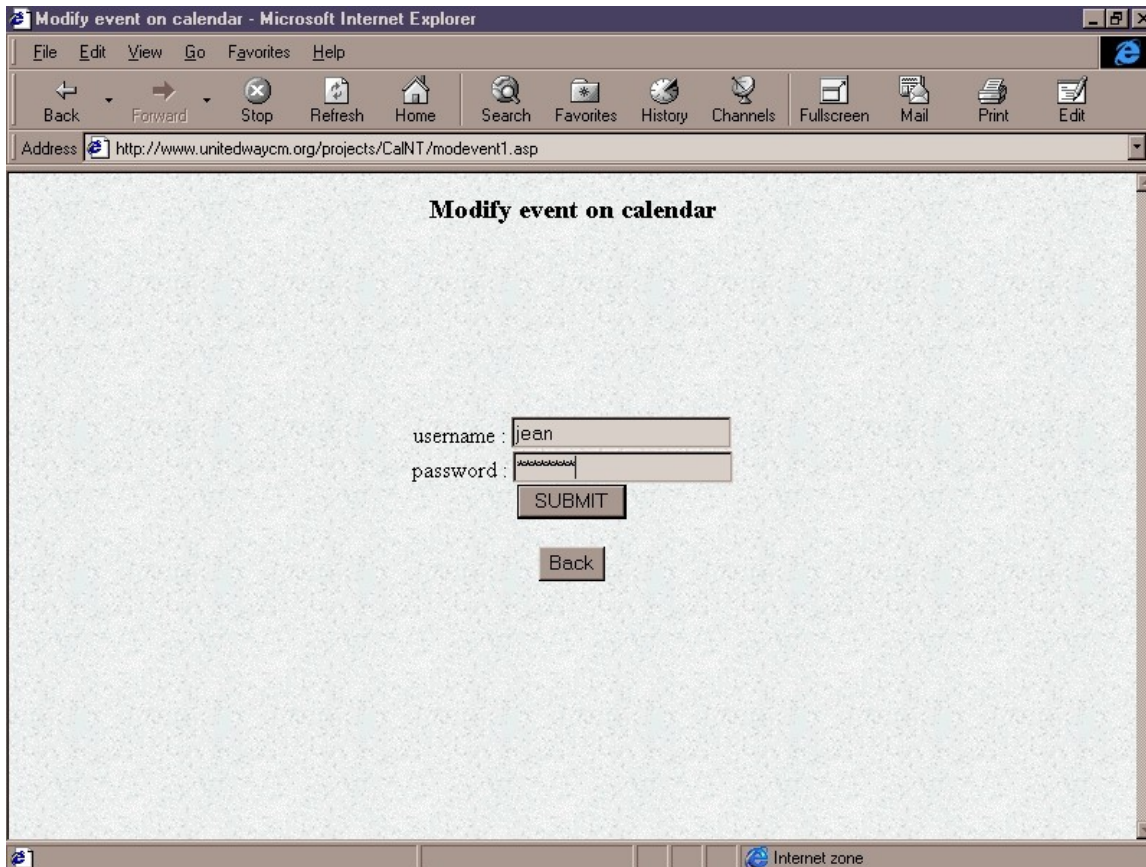
Upon completion of this form the user is brought to a form which lists events that the particular organization has in the calendar's database(*See Figure 7.21*).

Figure 7.21

By clicking the modify button next to the name of the date that they want to edit they want to modify a form is brought up that displays all the information about the event (*See Figure 7.22*).

Figure 7.22

Upon completion of the form, the user is brought back to the main calendar screen (*See Figure 7.16*).

Demonstrations 1: Professor Noonan

Professor Noonan was the first person to try the program out. He was shown the regular presentation that the group had prepared. He offered some helpful advice, especially with the presentation, and in general was impressed with the program. He commented upon perhaps splitting up the calendar's listing of events to specific times such as morning, afternoon, and evening. Other than that he over all liked the system.

Demonstrations 2: Jean Strock at UW of CMA

At the United Way of Central MA., the group met with Jean Strock and went over a couple of technical details showing her the administration program and receiving feedback especially as to how to make the interface more useable for administration. This extra part of the presentation was incorporated so that she would be able to eventually take over as administrator of the system. She pointed out that although the list told which files were not input into the database, she didn't understand the process for getting to them and how to physically put them in the database. It was decided that a user manual would have to be built to help with the implementation of the system. Another possibility would be for the user manual to be part of the system itself thereby making it easier to gain access to the help when one needed it. Also, the group received constructive criticism on the presentation along with a number of records to put into the database. One major change needed to be implemented: Untold to us before hand, some private information was being outputted into the system. It was defined in the database by being surrounded by asterix. This change has not yet been implemented and will be left for the next group to work on.

Also she had a couple of direct ideas that she wanted to implement in the final product. She definitely wanted each calendar day to be divided into sections corresponding to what time

of day (e. g. morning, noon, night,). She also thought that a keyword breakdown of the system would be useful along with the inclusion of the United Way logo on the front of the system.

Demonstrations 3: Susan Buglione at Henry Lee Willis

When the group went to Henry Lee Willis, and met with Susan Buglione a lot of useful feedback was provided. Overall she was happy with the product and wanted to implement it immediately echoing to us what the group had heard so many times before, that the system was needed now. She was really excited about the Calendar part of the program citing that it had not been done before and that it was needed in the community. She gave an example of how she had to send two volunteers to different conferences about the same thing on the same day because the two conferences did not know about the other's schedule. She pointed out that if they had utilized a calendar system then they could have either canceled one or worked together as a group. She saw it as a strategic tool that would enable the community service providers to work together and more efficiently.

She had a number of improvement ideas for the next version of the program. She cited the search engine as a good idea. However, she would like to have the ability to search by area, town or zip code. She pointed out that her organization's main search was by area and so that feature would be especially helpful. Also, she said that a lot of the programs that her organization sponsors are by zip code or town which is why she wanted to be able to search programs that serviced a particular region. She also pointed out that having a link to an organization's main web site might be helpful. Another thing she said would be helpful was that the program be strong enough to support more then just Worcester. She also was hoping that perhaps a mailing list of e-mail and addresses of groups that currently check the web site would be helpful to help cut the costs of mail being sent.

After looking at the program she cited a couple of other ideas. She feels that some sort of guideline would be helpful for people to know what information is pertinent to the system. Also, along the same lines, she pointed out that keywords would help organize the system.

Another concern of hers was training. This was a big topic for her considering her earlier experience in one of her branches where a computer was dropped off but was used for little more then an expensive paperweight until some training was done. Even then it was found that the computer was not utilized to its fullest extent.

Demonstrations 4: Betty Beaulac at Pernet

Our next meeting was at Pernet with Betty Beaulac. This was a very important interview considering that she had come up with the entire idea of setting up the calendar system. Again the Jeanral presentation was utilized. The presentation started out with the Information Referral part of the system. During the demonstration the Calendar section stopped working. With the failure of this part of the system it was decided to explain the different functions of the calendar and assure that the problem would be found and ironed out. (Note for upcoming groups: have backups on more then one medium. In other words, have printouts with you.)

With the Calendar section down, the group was still able to get some partial feedback. The search engine was requested to have some more advanced options along with a listing of data that needs to be reformatted to be friendlier to the eye.

The final presentation was at Family Ties with Beth Vietze. This was perhaps the most informative presentation that the project team experienced. Beth Vietze went through the system thoroughly and carefully; she was probably the best tester of the system thus far in that she made sure every base was covered. She was actually the only person who took notes on the system as

we presented it to her and she perused the web page. This was good because she was able to provide us with much more informative feedback.

While perusing the Information Referral system she noted that the search engine should be a bit more powerful and have more options. The project team suggested implementing an advanced search feature where users can search different categories. Beth then mentioned implementing a topology search or a different search function in case users had other needs when searching for information. Also, she suggested that users need to include key phrases in their descriptions since the search can only find text within the description. If a service provider provides emergency food then they need to say food and not meals in the program description. She pointed out that training was needed for the service providers whose information was to be stored in the Information Referral system. The training procedure would have to help them understand how to go about making sure that their key terms would be sufficient to help others find what they were looking for when using the search function.

Beth was also quite informative while viewing and using the Community Calendar section of the new system. She noticed that the calendar would quickly become full and so suggested making a couple more calendars, perhaps one that caters to children events, one that caters to caseworker's events and one that caters to adult events. As the calendar grows, naturally more specialized calendars can be added for convenience and aesthetics. This would help take the strain off of the calendar and keep it down to a minimum amount of information displayed on the calendar. When the group mentioned Prof. Noonan's idea of separating the events of each day by the time of the event she agreed that is was a good idea and it would be an effective way to improve the viewing of the calendar. Another suggestion she made concerning reducing the size of the calendar was to have multiple screens of information on an event. For example, if a user clicks on a calendar event, a small window can appear with a brief description

and a link for more information. Upon clicking that link, users can view all the information about the program if it interests them, or they can choose to ignore the program and move on. Still the calendar can be made easier to view by targeting certain audiences with an ATTN: *specific group* feature on the calendar description. This will make events for children, families, or elderly stand out more for the users.

As a system user Beth was interested with who would be reading Family Ties' information. Currently, Family Ties sends out mailers to individuals they feel would be interested in participating in a particular program. If any of these individuals read the information about such a program on this system they do not need to receive the mailer. Beth suggested having some way to know what users read the information she posted so that Family Ties can choose not to send them a mailer, or choose to send them follow up information about such a program.

Finally, when Beth finished making changes to a program offered by Family Ties she wondered how other users would know about such a change. She also wondered how she would be informed if another service provider made changes to a program that was of interest to her. After some collaboration, Beth and the project team decided that a news page would be best for listing new programs. This page might include new developments in the Worcester County area as well as complete information regarding any changes recently made to the information contained in the system. Another idea was to highlight events or put a graphic image, like a star, on events that have recently been added or changed. If agencies start changing their information daily this idea would not work and a new plan would have to take effect.

User recommendations tend to focus on the user friendliness and how the program trims down to their very specific needs. To step away from the user perspective, one can see the skeleton of the project through the developers view under the hood. Clearly there should be a

whole new set of important technical and management recommendations that the users could not have foreseen. Hence, feedback from everyone will eventually benefit the system as a whole. So, no feedback should be left out, ignored or overlooked if this system was to continue carrying through future enhancements and improvements.

Chapter 8: Recommendations

Technical Recommendations

Currently the web database is being hosted under the company Hosting Solutions. Throughout the scope of this project, this service has not cooperated with the project team to the level which was intended. For example during the database construction a DSN is needed to establish connectivity with the database file on the server. This procedure should take no more than a few minutes, after calling the server administrator. Unfortunately the administrator took more than a week, and failed to respond at all until the project team gave them precise instructions on how to set up a DSN. This is a sign of poor administration control under Hosting Solutions. Other indications of poor service include the accidental backing up of the server's data (I.E. writing old data over the current data). While doing so, they failed to contact the project team or make any announcements about the incorrect backup procedure taken. Also, this service has never administrated a web site at this scale. The service advertised their site with ASP extensions and other enhancements, but clearly they came short in terms of administration resources. Altogether, a new hosting service is strongly recommended if this project is to proceed. With the computer <u>Year 2000</u> crisis arriving, no one can be sure of how Hosting Solutions will hold up to the event.

Assuming the service is changed, one important question needs to be answered. What type of service is now in place? The two main types of service available for web hosting are Unix based and Windows NT based. Currently, the entire web database is constructed with ASP since it is the only available web database under Windows NT. If the service is to switch to a Unix oriented server, all previous work will not be compatible with the new system. All work

would need to be redone to adjust to the systems in the new service. Also some Windows NT services may not hold ASP extensions. Careful considerations and research would need to take place in order to change services; it is a process that will effect everything in the long run. Though WPI currently has far more students capable of building this web database system under Unix than Windows NT. This fact is extremely crucial in decisions for future development of the project.

Whatever the change on the service may be, it is important to keep the web site server-side instead of client-side. A server-side website will do all computations on the web server machine, leaving users with low-end computers capable of functioning. A client-side website will force all computations on the user's browser. Basically a user browsing the client-side website with a high-end computer will benefit, while a person using a low-end computer will suffer from poor performance. It is suggested that Java or other client side languages be entirely avoided in the upcoming construction for the simple reason that many of these organizations operate under low-end machines.

Currently everything in the website branches off the front page. The terminology involved is "Read organization program records", "Create new program records for organization", etc... It is important to keep the wording simple through out the entire website. A help index or section needs to be included up front to help Internet new comers understand the process better.

Once inside the database, the viewing of the database will reveal some fields with the "***" characters. Fields with such characters need to be hidden and not made publicly available. This is a result of the interface not recognizing the field as a hidden field. The process of streaming the HTML files into the Access database will require an intelligent marking method of helping the interface realize the private data.

76

Along with the realization of private data versus data ready to be made public, the interface also needs to keenly display the public data with a format similar to the current IRIS database. The built-in feature of extracting the information and referral information onto HTML is not consistent. A record may be missing a field such as "street address", and that in itself will throw off the HTML formatting, making one extracted file entirely different from another. Much emphasis needs to be placed on the handling of the formatting to assure a more similar interface between IRIS and the website.

Currently all database structures require a primary key, which is used to hold one database record distinct from another. That primary key field has to be unique through out the structure of the database to remain intact. The redbook information stored on the IRIS system so far has appeared to make the database structure difficult. An operating agency titled "ABC" could very well have a program name of "ABC". With no particular field being unique, a random automated number is currently assigned to distinguish one record from another for the database right now. And as the number of records increase, higher numbers will have to be generated for the database. And Access has the tendency to never regenerate that same number, making the database vulnerable to size increase. A database with a non-numerical primary key is strongly recommended.

If future groups continue to deploy this database with Microsoft Access, one has to realize its limitations. Access is currently one of the least costly database options in the market, but it comes at a price. Without an incredibly efficient database structure, the database can grow tremendously large. Of course Access database files can be compressed, but no current online programming allows that process to be automated as of documentation. After testing and pushing the limits of an Access database, the results show that an average Access Database of only a few fields can grow to a file size of nearly infinite records. As the number of records

increase, the database loses complete efficiency, and the file size begins to grow exponentially. Taking possibly half an hour to update a simple record or performing a simple search. Basically database options such as SQL Server or Oracle needs to be considered for interfacing with the Internet of this scale.

Along with the database emulating the redbook, the calendar also functions under the website. Currently, a real viewable space issue occurs with the structure of the calendar, where every time a new event is added to the calendar, the slot holding that date stretches to accommodate spacing for new events. Assuming 20 events were to be inserted on the same day, the calendar will stretch out of proportion. This is not just a computer situation. If one was to enter countless events on a single day in a calendar, the slot holding that date will also run out of space. A new design method is needed to adjust to the addition of hundreds of events while maintaining the calendar slot size. A possible solution would be using a scrollbar device every date slot to adjust to the increase of events.

Additional concerns regarding the maintenance of the calendar will arrive. The system needs to have an automated event handling process, where events older than a week for example, would be automatically deleted from the calendar. This will make room for new events, while at the same time minimizing the size of the database file. An imbedded NT Perl automated process or time aware event detection mechanism is strongly suggested for the maintenance of any future community calendars.

One of the features requested by United Way in conjunction with the usage of the database and the calendar is the need for logging transactions. If organization ABC decides to change the name of a program on the database or calendar, United Way should somehow know of the change, and reprocess that exact change on the IRIS database. Many approaches can be taken to manage the logging of the transactions. One possibility was to formulate an automated

email, which contains the changes, and forward the change details straight to United Way. Additional research will have to be done to see how many of the POP3 email accounts on the service are still available. Another possibility was the logging of the transactions through a viewable WebPages under HTML format. Though this approach will have to enforce the logs carefully to reduce the log file size as the number of transactions grow.

Altogether security will need to improve continually throughout future construction of the calendar and the database. Currently extremely tight security measures exist within the WebPages. If a password and username is needed, one must enter an existing password and username, which exists in the database to proceed. Assuming a user knows the <u>URL</u> of the next page, entering the page without previous password or username authentication will reject the user back to the password screens. Perhaps future security features such as content expirations will be included. For example, user ABC can enter the password and username, and edit his or her database contents. Upon exiting, later users will be able to access user ABC's previous password information from the reserved memory by clicking on the browser's "back" button. A content expiration feature will be strongly recommended to extend the already tight security.

In addition to database security, currently there is no address protection against the downloading of the actual database file. If one was to enter the URL at which the database is located at, the site would allow instant downloading of the entire database. Currently, Hosting Solutions claims that they can't set up a firewall protection to block that address. However, we are aware of the fact that firewall protection under Windows NT server can be set up to deny access to the contents of the _private folder as well as other folders. Another future possibility would be setting up server side scripts to deny or redirect any attempts made to download files in the _private folder. Protection is definitely needed to provide the necessary security control.

Management Recommendations

As mentioned Access database currently has an unknown limit on the number of users capable of accessing the same data simultaneously. In a small test, up to 5 users in a lab were capable of changing the same field of data at one point without receiving a database error message. Other times, 3 users accessing the same set of data led to a database error message. Even Microsoft themselves do not have an exact number as to how many users can make modifications on the file simultaneously before an erroneous message appears. A management recommendation to avoid data collision would be to have scheduled times for insertion or updating data. Perhaps, organization 1 can only enter data into the database from noon to 1pm, while organization 2 can only enter data into the database from 1pm to 3pm. Of course, this suggestion is only needed to adjust to the technological limit of Microsoft's Access database. Every database software and file structure has a different strength. A more high-end database option like SQL server is supposedly capable of handling hundreds to thousands of simultaneous transactions without any collision.

Additional management supervision will be necessary to control the posting of events to the calendar. If an organization randomly abuses the calendar by posting 100 plus events each day, even the design of an extremely stable calendar may eventually collapse within a short period of time. It is crucial to let all organizations be ready to participate with the community calendar to know that the calendar is built for the entire community, not just for that one single organization. Event contents will also have to be kept in control. Any unnecessary event that doesn't need the community's attention should not be posted. With such a tight limit on the technology's strength, the system cannot afford to waste resources.

Other issues deal with the computer literacy of the users. Currently not all employees in the organization have experience with the Internet. Computer-phobic views and perceptions can make the new system unfavorable over the current system. Computer training is strongly recommended once the new system is in place. Perhaps, a non-technically simplified computer manual is also a good addition.

Though training sections are only a possibility if the facilities are available. A number of the organizations are still using non-Internet ready computers. Many of the computers require hardware upgrades, such as modem installations or proper wiring to the Internet. Until then, those organizations may not be benefited enough. A simple solution would be to have the Internet ready organizations print out the database information into a redbook-like format for distribution to the non-Internet ready organizations. Another possibility would be to have United Way put the online information on a floppy disk for mass circulation. This could require a small charge to cover the variable cost of the floppy disks, but at the same time give United Way the potential to generate revenue.

Two other events could ultimately decide the future design of this entire web database service. United Way's Worcester location has plans to rewire their network in the upcoming future and the city of Worcester could be granted with cable modem services a few years past the millennium. All this could allow United Way to purchase their own machines and run their own servers straight in the Worcester location. Certainly there are a number of pros and cons to follow that. From the beneficial side, United Way's web server will have significantly fast file transfer speed between the other organizations since all organizations are situated in the Worcester County. Along with speed improvement, United Way will have their own computers processing only their own information. Currently, Hosting Solutions has to share processing speeds with numerous other companies sharing the same service. A hosting service like Hosting

Solutions can also be eliminated since all the material is now hosted directly by themselves. This could easily free up the $19.95 hosting fee every month for the current web address http://www.unitedwaycm.org. United Way will also have their choice of hardware in terms of purchasing computers for their own facility. On the other hand, an administrator with a strong technical background may be required to stand by at all times to ensure the service performs up to par. So one has to weight the pros and cons and the implementation of the entire system.

The final system is expected to hold up entirely on its own with little technical administration necessary. But what if an attacker brings down the system or an unexpected problem occurs? Technical support is not needed every week or every day but when issues do arrive, it is crucial to have experts to turn to for the repairing of the system. And this could post a management concern in terms of who will be available to watch over such a system. At Hosting Solutions, the technical support group watches over the NT server as a whole, but they are not responsible for supporting the contents of any of the pages, including the contents of the United Way pages. Technical support arrangements between future WPI students may be a possible solution.

Chapter 9: Conclusion

Today United Way of Central MA still stands as a central link for thousands of organizations. The linking of people in need with the appropriate resources is just a small mission that scratches the surface behind United Way's principle. Maintaining commitments and achieving goals, United Way takes stride day by day into making this world a better world. From funding agencies to volunteerism, United Way carries countless success stories behind its history and everyday the service improves and expands to outreach further and meet more demands.

What if continual improvement and expansion can take place not just at a human service level but at a technological level? Perhaps United Way and the thousands of organizations that it serves would then be able to take even bigger strides into bringing faster and better services. Imagine marginally reaching just one more person or satisfying just one more need each day. It all makes the improvement and changes worthwhile.

The experience of this project brought the Worcester community and Internet technology closer than one would expect. Many of the caseworkers and employees were exposed to our level of Internet implementation for the very first time. With a database creating a community-wide Redbook and a calendar organizing the community's event, the organizations came to realize the potential of the Internet. And it shines as a communication tool in tying all of the organizations together, while maximizing that organization's capabilities in bringing even more efficient service to the community.

The advantage of having an online Redbook that can deliver referral information to someone in need of help in a day instead of a week is just a small sign of what's to come. Many other benefits geared toward the speed of service are bound to rise, and no one can predict the

leaps and bounds that this could reach. Once the technology takes the right steps into the future, the organizations could rely on technology to the point where the traditional ways of handling matters would seem unwanted, ancient and ineffective.

Eventually some form of technology is expected to replace the current systematic information storing method of the Redbook. Whether the approach stands by the Internet or some other new technology, it is clear that even the employees themselves agree in a change. Something needs to be done sooner or later, to make the Worcester Community bond between human service providers and even stronger bond. If improvement through technology can shift the community over the horizon, then let the Internet be the guide for this Worcester community.

Not having to wait two weeks for a caseworker to respond, and being able to independently grab information from the Internet anytime, anywhere brings about convenience. Being able to respond to the child or elderly, who need that referral information as they request it, is a phenomenal improvement. There is absolutely no boundary to the speedy delivery of accurate information. As long as the implementation methodology behind the concept of providing service with more efficiency and smarter information technology is available in the next future step. The Worcester community can be sure of a more hopeful and brighter future for all.

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Glossary

Access Database – A Microsoft software used to construct a database.

Activities – what a program does with its inputs-the services it provides-to fulfill its mission.

Allocative efficiency – no one impacted by the outcomes can be made better off without someone else being made worse off. (*Pareto Principle*)

Application architecture – defines an approved set of technologies to be used when building any new information system.

AS400 – A networked operating system / software like windows but made for IBM mainframe computers.

ASP – Active Server Pages, a computer language used for programming.

Banyan Vines – A networked operating system / software that allows numerous machines on a network to use shared software.

Benchmark – performance data that are used for comparative purposes.

Bookmark – is the quick referencing of Internet addresses by browser software.

Cable Modem – A type of Ethernet network using television cable lines to transfer Internet data at a rate of 10 Mbps.

Case Manager – A person trained to develop a service plan for a client.

Configuration Phase – identifies and analyzes candidate technical solutions that might solve the problem and fulfill the business requirements.

Construction Phase – builds and tests the actual solution (or prototype of the solution)

Definition Phase – Identifies and analyzes user and business requirements that should apply to any possible technical solution to the problems.

Delivery Phase – puts the solution into daily production and performs continuing maintenance on the solution.

Design Phase – specifies the technical requirements for the target solution. Today, the design phase has significant overlap with the construction phase.

Domain – One Internet site or one Internet address counts as one domain.

DSN – Data Source Name, certain database needs a data source name to verify the user's identification before opening or accessing that database.

Excel – Microsoft spreadsheet software used to calculate data in a table format.

Feature creep – the uncontrolled addition of technical feature to a system under development without regard to schedule and budget.

Frames – A feature of HTML that divides a web page into different sized viewable screens. One screen can change while the other stays the same and the entire web page is contained in one browser.

Frontier GlobalCenter – A carrier service which transmit your data to other services. In this case, this company transfers Hosting Solutions data to the Internet.

Frontpage 98 – A Microsoft software used to simplify or automate web publishing.

Ftp – File transfer Protocol, a standard language for communication between two computers to send files across the network.

HTML – Hypertext Markup Language, like .doc files that are viewable with word processing software like Word, .html files are viewable with web browsers. The browser will interpret the files into WebPages.

Inputs – resources a program uses to achieve program objectives.

Intel Pentium II 300 MHz – A computer equipped with an Intel Pentium II class processor running at 300 MHz of processing time per second.

Internet Information Server 4.0 – Usually abbreviated to IIS4, is a software made for the Windows NT4.0 Servers to provide web serving and file transfer capabilities.

Iris – A software package produced by Benchmark Enterprises and used for Information and Referral by the United Way.

Java – A computer language used for programming.

Javascript – A computer language used for programming.

Jscript – A computer language used for programming.

LAN – Local Area Network, a group of computers connected together to share files or other electronic data.

LANtastic – A networked operating system / software that connects up to hundreds of computers running the IBM OS/2 operating system.

Lotus 1-2-3 – Lotus spreadsheet software used to calculate data in a table format.

Microsoft Exchange Server 5.5 – A mail server software to store mail accounts and mail for users on a network.

Megabytes – is the standard of unit used to measure file size or space usage on a computer.

Mentors – A caring relationship with an adult

MS-DOS – Command line based operating system / lowest form of software that communicates with the hardware.

Newsgroup (IR) – An electronic discussion board or central location to store publicly available emails regarding IR workers. In this case all emails are forwarded to users enlisted under the email
ir-networker@mcfeeley.cc.utexas.edu

Novell – A networked operating system / software that allows numerous machines on a network to use shared software.

NT – Windows NT, representing Windows New Technology is a different flavor of the Microsoft Windows operating system.

OC-12 circuit – A medium, line of Synchronous Optical Network capable of transferring up to 622 Mbps.

ODBC – Open Database Connectivity, the standard language industry database software uses to communicate.

Outcomes – benefits for participants during or after their involvement with a program.

Outputs – products of a program's activities. *Units of service*

Perl – A computer language used for programming.

POP3 – A certain type of email server extension.

Primary Key – A unique field in a database.

Procurement Phase – identifies and analyzes hardware and software products that will be purchased as part of the target solution.

Prototyping – the act of building a small-scale, representative or working model of the users' requirements to discover or verify those requirements.

Quota – Space limit.

RAID Configuration – Hot swappable removable storage devices capability allows Hosting Solutions to backup the server data without shutting off the computer or the user realizing the process.

Redbook – A directory of over 1500 human service providers and their programs within the Worcester County area maintained by the United Way of Central Massachusetts. (a.k.a. *First Call for Help*)

Scope creep – the unexpected growth of user expectations and business requirements for an information system as the project progresses.

SCSI hard drives – Storage devices of a faster interface, Small Computer System Interface.

Survey phase – establishes the project context, scope, budget, staffing, and schedule

TTY service – specialized telephone services for the hearing impaired and disabled.

Unix – A networked operating system / software built for the communication between networked computers.

Uptime Stability – The software's ability to continually stay up and remain stable without crashing.

URL – An http address or an Internet address. For example: http://www.wpi.edu is an URL.

VBScript – A computer language used for programming.

Year 2000 – Computers without proper fixes will mistake the year 2000 as 1900 since a good majority of the computers are constructed with only a 2 digit clock. Any program relying on time could do potential damage with the incorrect time.

Appendix

Appendix A: Nov. 11th Survey

November 12, 1998

Dear Health and Human Resource Provider:

We are in the process of developing an on-line database access system and resource scheduler to help child and family care resource providers offer accurate and efficient services. We are working with the First Call for Help program at Untied Way. The resulting online database system will be owned and maintained by United Way.

First Call for Help maintains a comprehensive database of over 1500 agencies and programs in Central Massachusetts used by their 24-hour information and referral service. This new online database access system offers the following benefits:

- faster information
- more up to date information
- quick and easy maintenance
- quicker response time to clients
- schedule coordination between resource providers

Thank you for your time, your efforts are appreciated. We would like to hold a focus group on December 1st at 4:00pm in Washburn Shops RM 220 (see attached campus map) on WPI campus for service providers in the Worcester, MA area in order to examine the needs of the users of an online database access system. We want to know what information should be available in order for service providers to properly direct clients for service. The attached questionnaire will help us to design a template for this system. Please take a moment to fill it out completely and return it to us by Nov 20th.

Sincerely,

WPI Students involved in the project for contact or information:
Michael Tramantana
Benjamin Wong
Stephen Zangerl-Salter
87-21 Park Ave.
Worcester, MA 01605

Tel: (508)792-9197

Email: miktramy@wpi.edu

1.) Does your facility have access to the World Wide Web?   YES_ NO_

2.) If you chose to participate in this service, will your organization provide up to date information for the database?   YES_ NO_

3.) Assuming that maintenance will only involve filling out an online form periodically, will a member of the organization be responsible for the update?   YES_ NO_

4.) Do you feel an online resource scheduler will be beneficial to your organization?

YES_ NO_

5.) Will you be willing to participate in a focus group with other service providers?

YES_ NO_

Name: _____

Organization: _____

Address: _____

_____

Telephone Number: _____

Email Address: _____

Types of Services Provided: _____

Return questionnaire by mail to: WPI IQP Group

87 Park Ave. Apt. 21

Worcester, MA 01605

Fax your return to: United Way

Fax: (508)757-2712

E-mail your response to: miktramy@wpi.edu

REMINDER: FOCUS GROUP MEETING ON DEC. 1ST @ 4:00PM IN WASHBURN SHOPS AT WPI

Appendix B: Phone Interview

The following is a problem situation that we feel is accurate for your organization/agency which we plan to address in our system:

     Assume that an assessment has been completed for a client and a service plan has been developed with a prescription for a specific set of services. At this point the service coordinator (or case manager) wishes to identify an appropriate service provider for each of the identified needs. Jeanral familiarity with providers in the service area is insufficient. The manager or coordinator needs to match knowledge of the client's needs, their schedule for availability and their ability for access against the schedules of different providers, their capabilities and the providers' requirements for access. In making a match the manager will normally make a series of phone calls to different providers (perhaps using UW's First Call) and it will not be unusual for 1-2 weeks to pass before a reasonable match can be identified. Consequences from this process include: delay in providing service, the under utilization of service capacity and the time and effort that is required by the case manager or service coordinator.

1) Does this reasonably describe a task that your organization encounters on a regular basis?

     if NO please explain your current process.

2) What type of information do you need to access in order to aid your clients? (ie. phone numbers, addresses, programs and events, etc...) Would our system help you to access that information more quickly and easily?

3) How do you determine the needs of each client? (What is the process?) Can our system make that process easier?

4) Does your organization have any programs or events to share with the public? If so would you be willing to post it for the community on our resource scheduler? How many events do you normally have that would be posted on the scheduler?

5) Can we contact you again in the New Year to show you a prototype we have developed based on your needs?

6) Is there anything that you would like this system to do for you particularly?

Appendix C: Procedure for Creating ODBC File DSN

As mentioned, one needs to create a file Data Source name, if the Open Database Connectivity is not DSN-less. Follow the following steps in Windows or Windows NT to create a DSN.
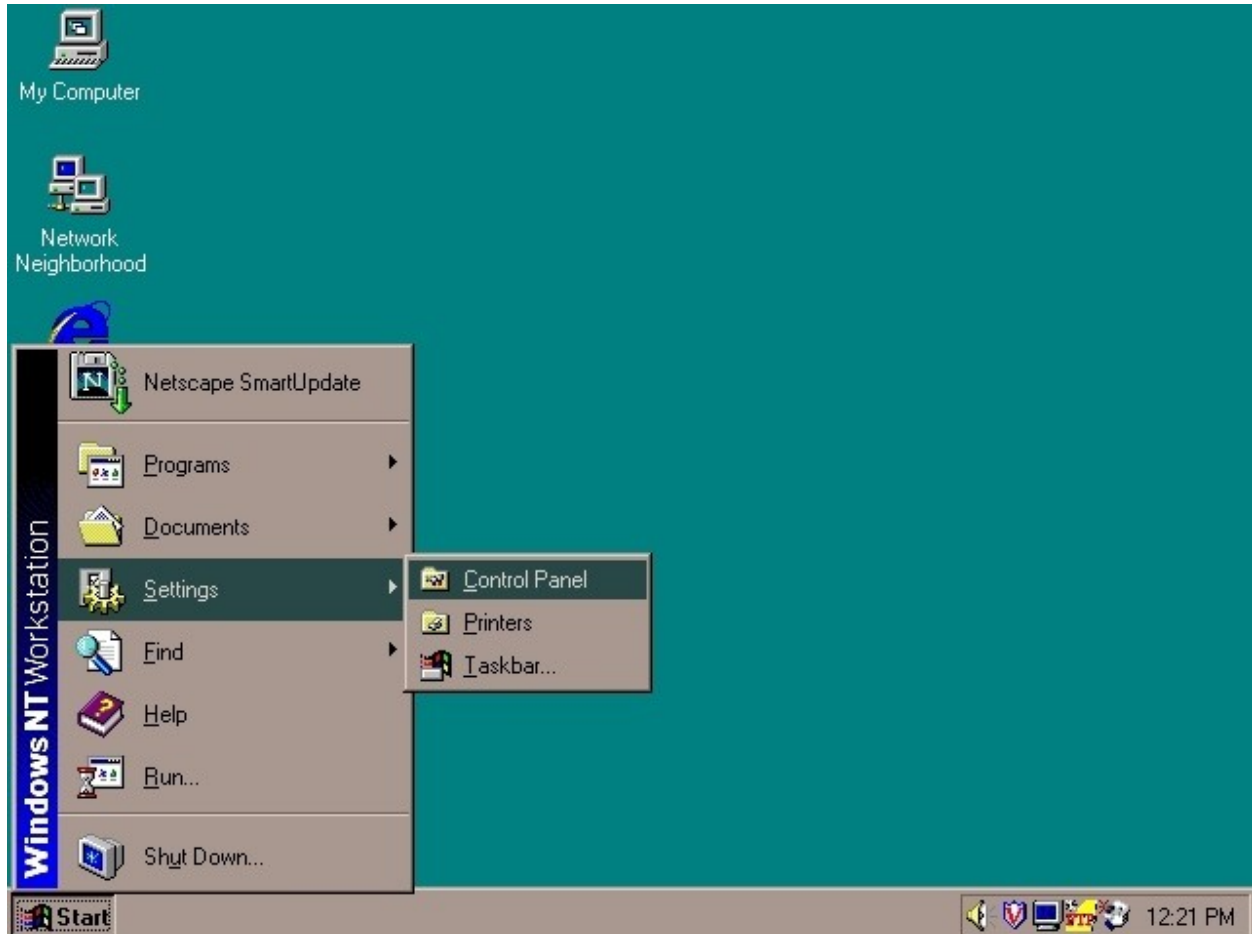
First go to the Start Icon -> Settings -> Control Panel
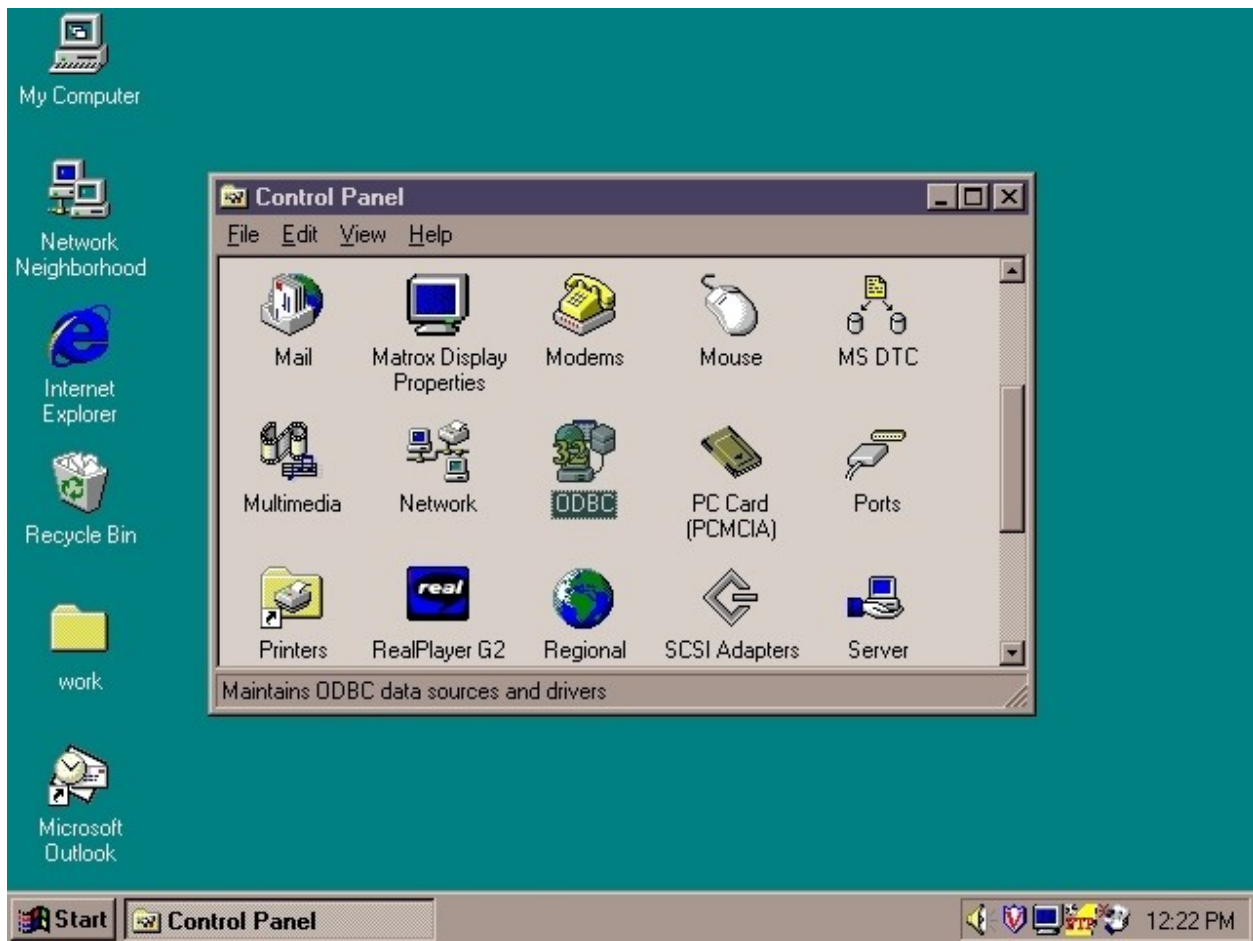
Then go into the ODBC icon, and hit enter.
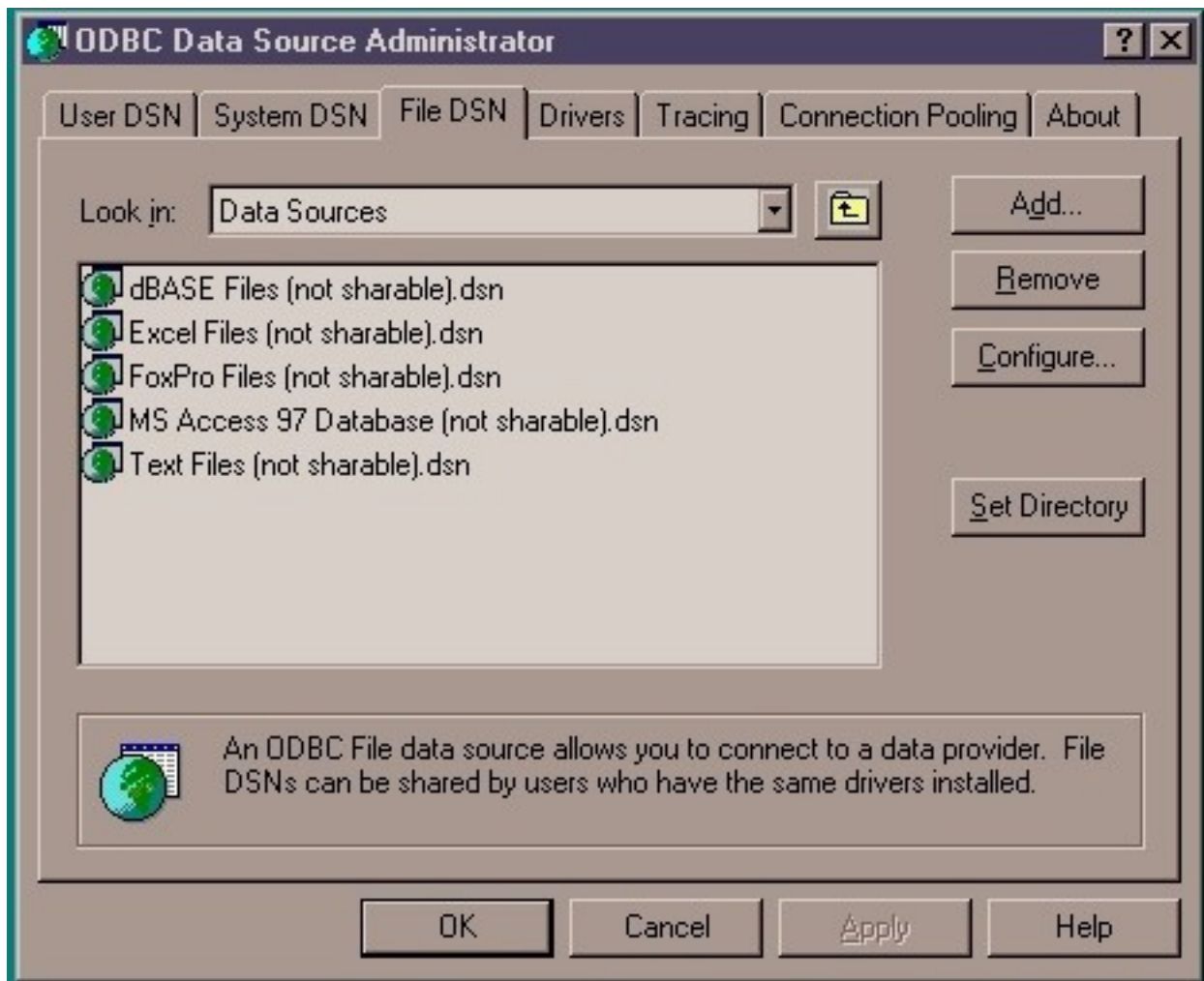
Once inside the ODBC icon, go into the File DSN tab, and click Add.

Create New Data Source

Select a driver for which you want to set up a data source.

Name	Version	Company
Microsoft Access Driver (*.mdb)	3.51.171300	Microsoft Corporation
Microsoft dBase Driver (*.dbf)	3.51.171300	Microsoft Corporation
Microsoft Excel Driver (*.xls)	3.51.171300	Microsoft Corporation
Microsoft FoxPro Driver (*.dbf)	3.51.171300	Microsoft Corporation
Microsoft ODBC for Oracle	2.573.292700	Microsoft Corporation
Microsoft Paradox Driver (*.db)	3.51.171300	Microsoft Corporation
Microsoft Text Driver (*.txt; *.csv)	3.51.171300	Microsoft Corporation
Microsoft Visual FoxPro Driver	6.00.816700	Microsoft Corporation
SQL Server	3.60.0319	Microsoft Corporation

Advanced...

< Back   Next >   Cancel

The Microsoft Access Database (*.mdb) should be visible. Hit Next to continue.

Create New Data Source

Type the name of the file data source you want to save this connection to. Or, find the location to save to by clicking Browse.

unitedwaycm

Browse...

< Back   Next >   Cancel
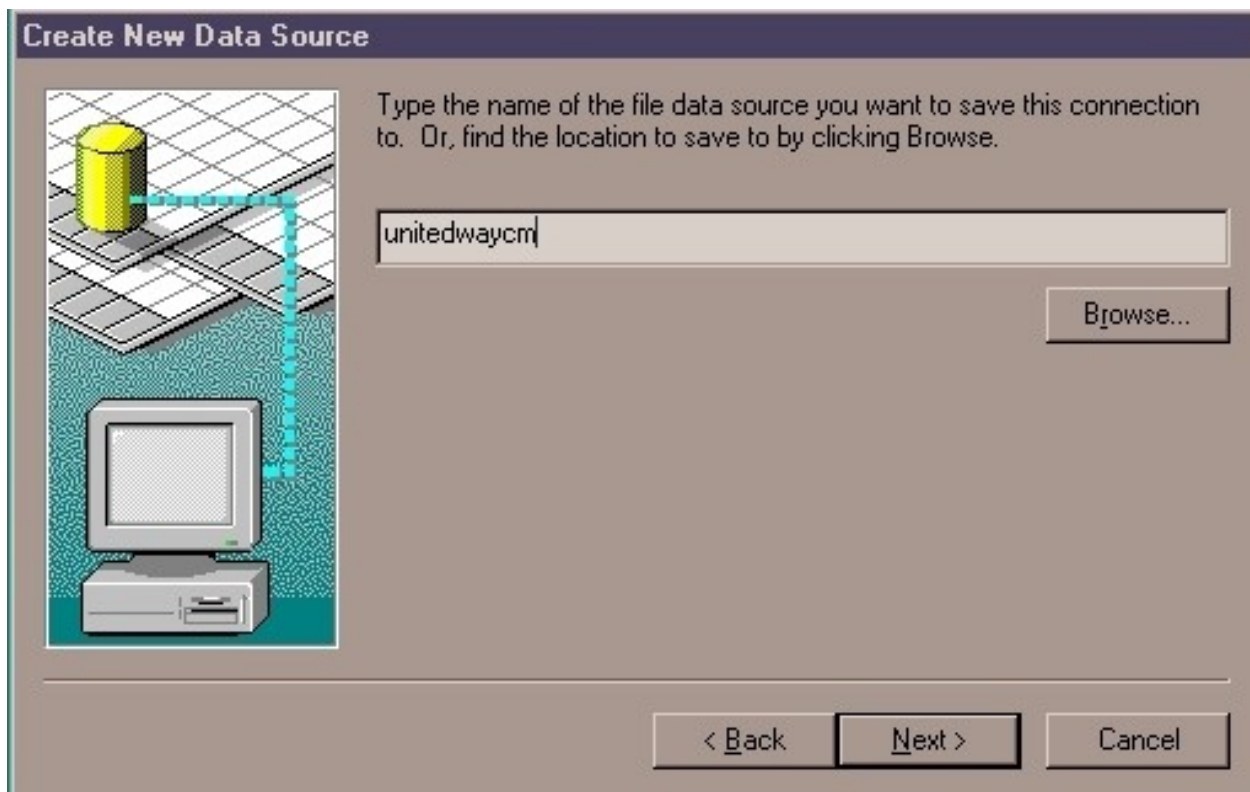
This is where you specify the name of your DSN to connect. For the scope of the project, the name "unitedwaycm" was used universally to open the database. This is crucial in terms of creating a connection with the database using this Data Source Name regardless of where you'll specify the location.
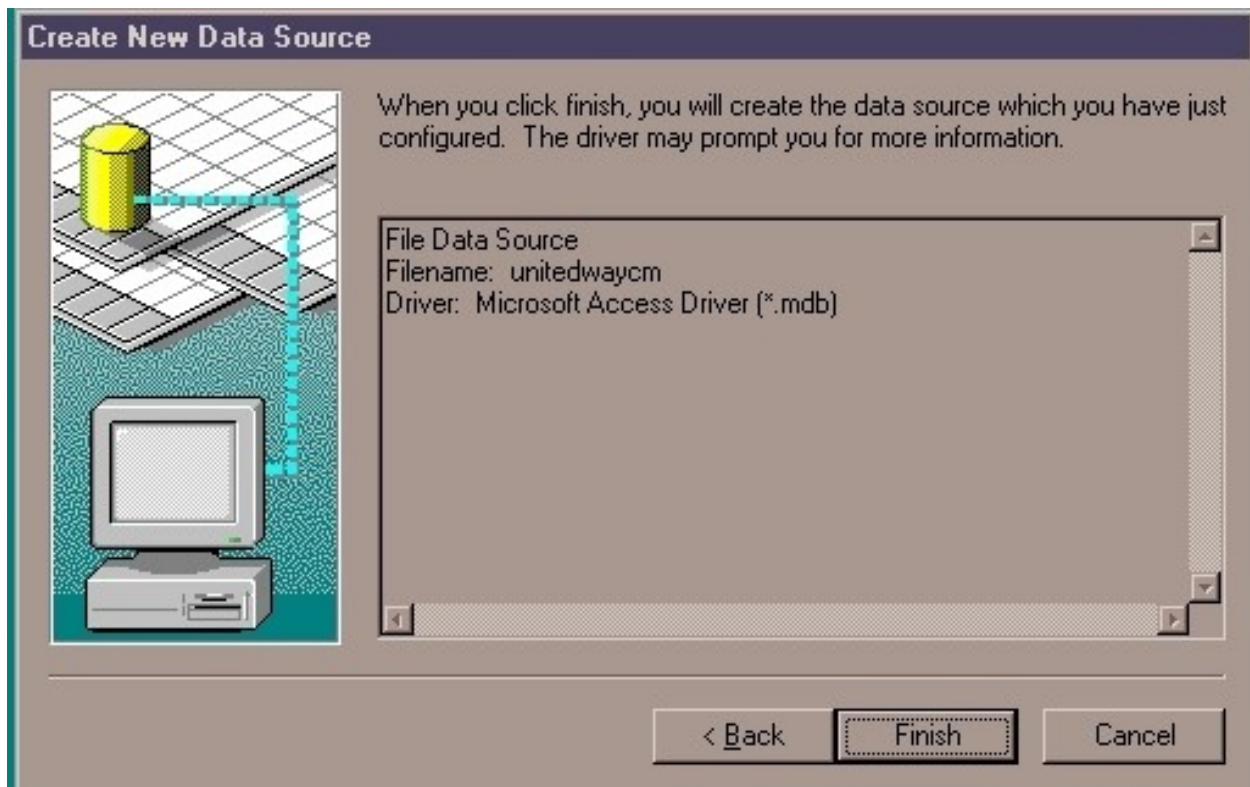
When this screen is reached, it should specify the correct type of database. In this case, Access database. And the filename should also be visible. Click Finish to continue.
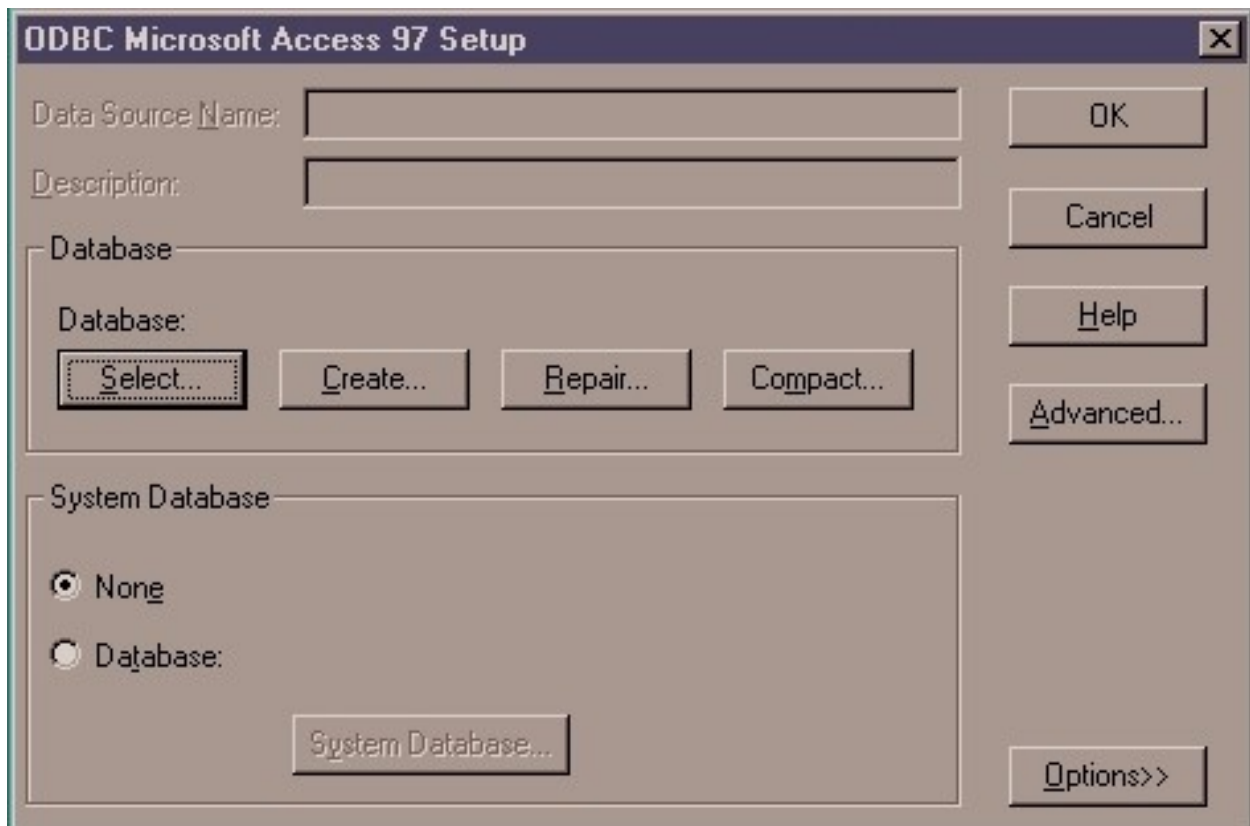
Here you simply select the location of your database. Click Select to continue.
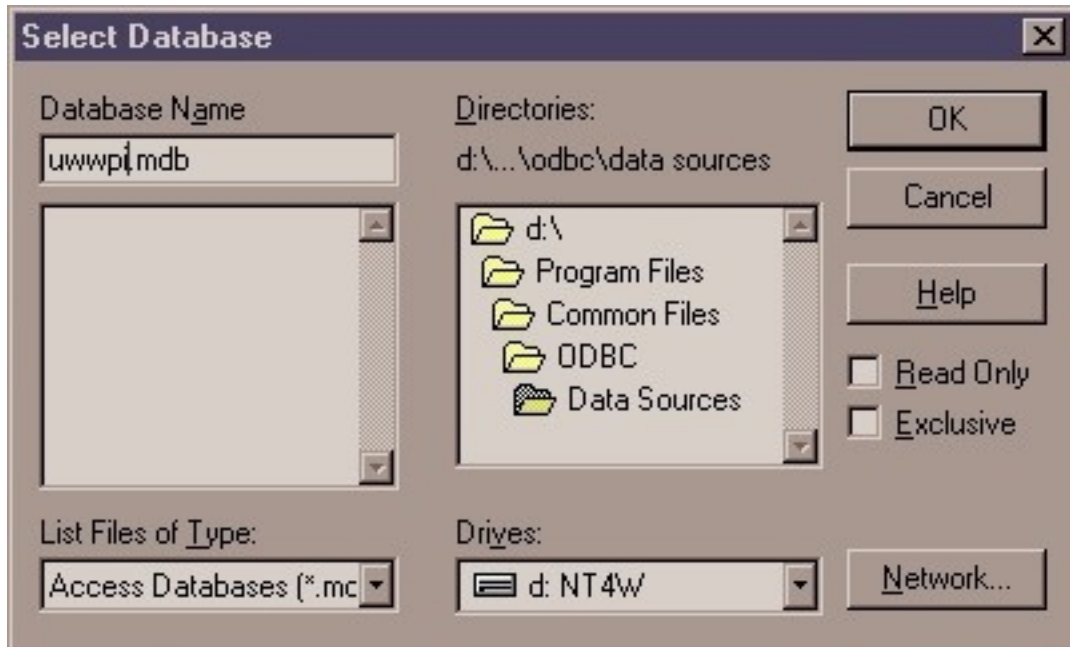
The system administrator needs to know where about you placed the file on the server. In this

case, the file is called uwwpi.mdb, but the ODBC refers to it by the DSN, unitedwaycm.

Basically the administrator points this file to the DSN. And this is not a step that can be done on

the client side. Once again, administrators who are in charge of the file servers do these steps.

Click Ok to wrap up the process.
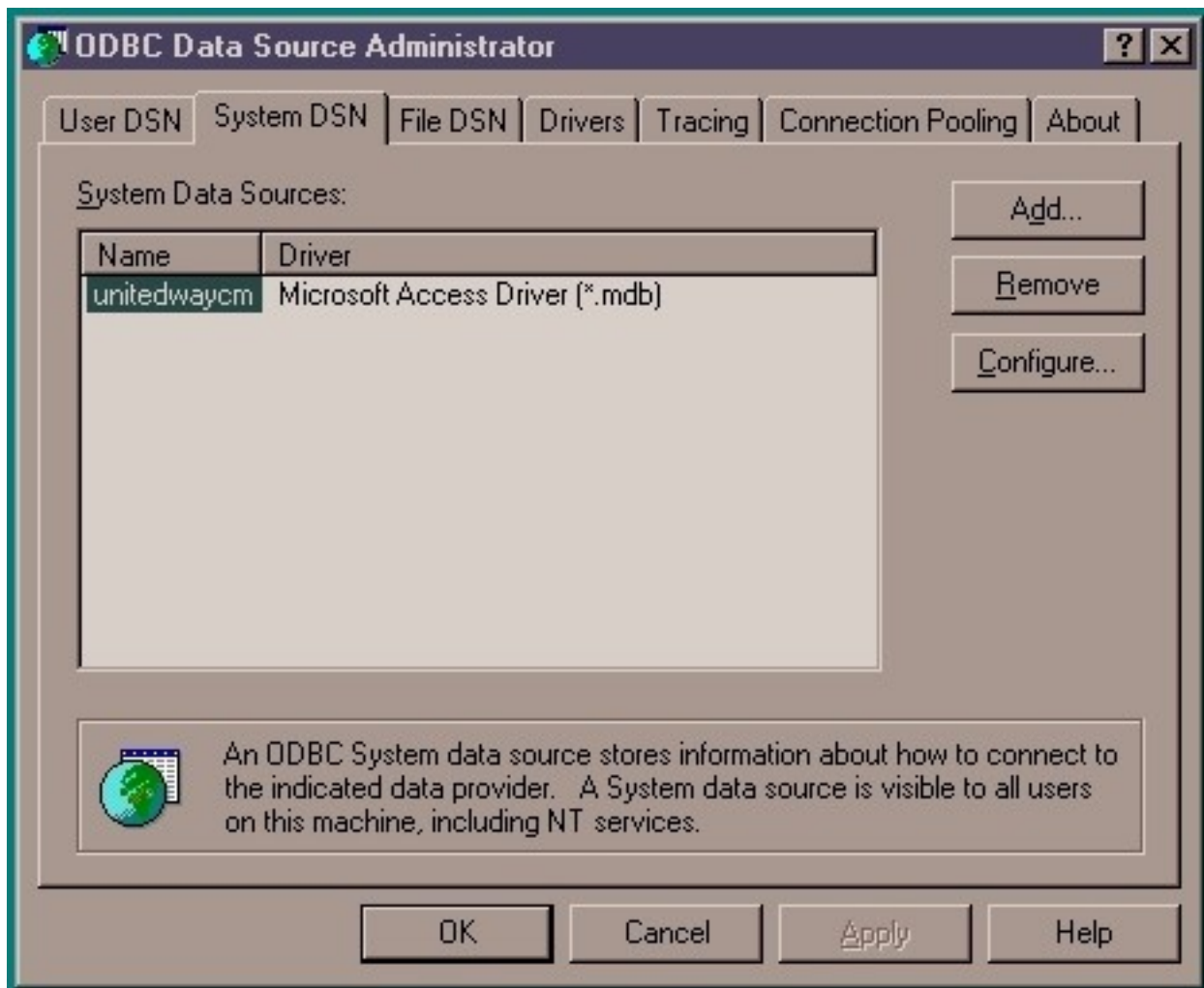
When returned to the main menu, the System DSN tab should have a name and a driver pointed to the specified server if the steps were done correctly. At this point, the ASP interface can now officially refer to the database file with the "unitedwaycm" DSN. If any of the steps were incorrectly done, please return to the first step and start over.

Uwwpi.mdb Access Database Structure
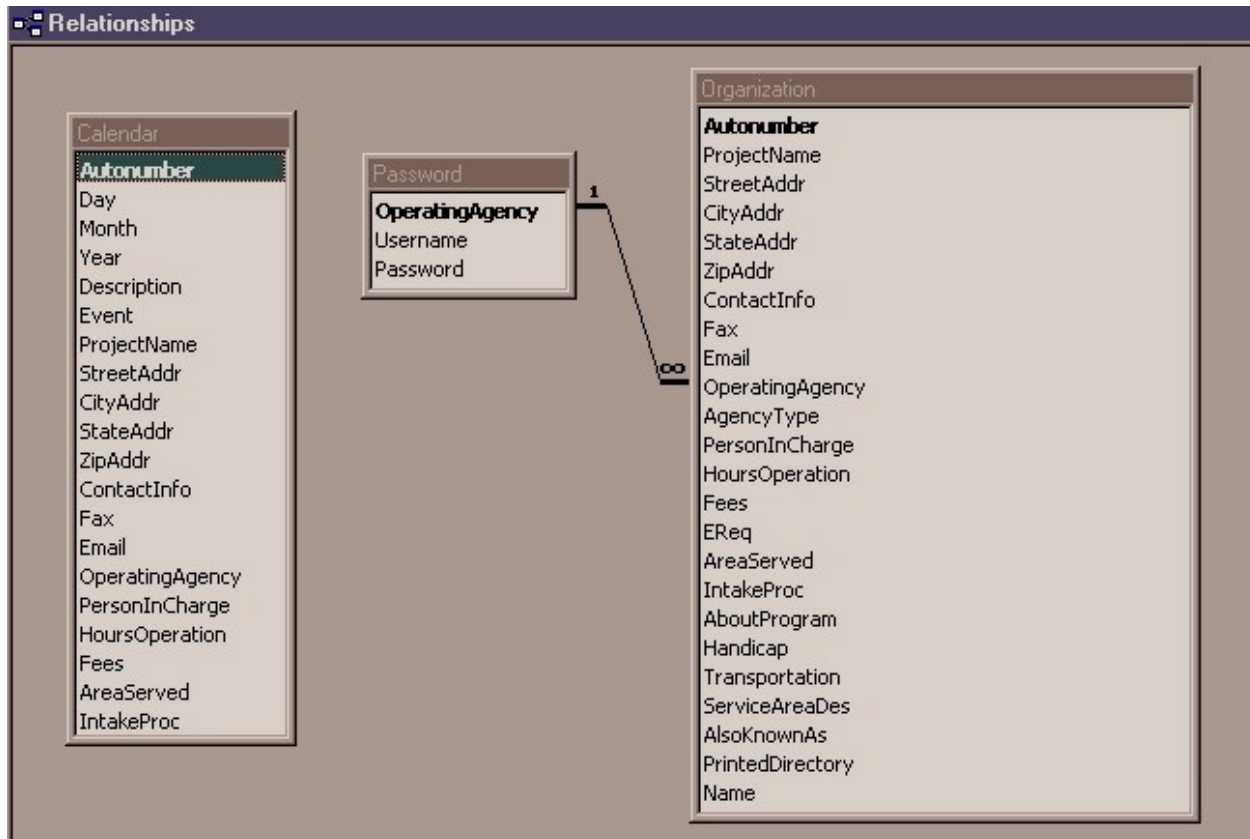
Outputting HTML files from IRIS

From IRIS 2.0, the feature of outputting HTML files is included within the software. Below is a sample of an HTML file output when viewed by the browser. Note, the information contained in this sample is only for demonstration purposes.
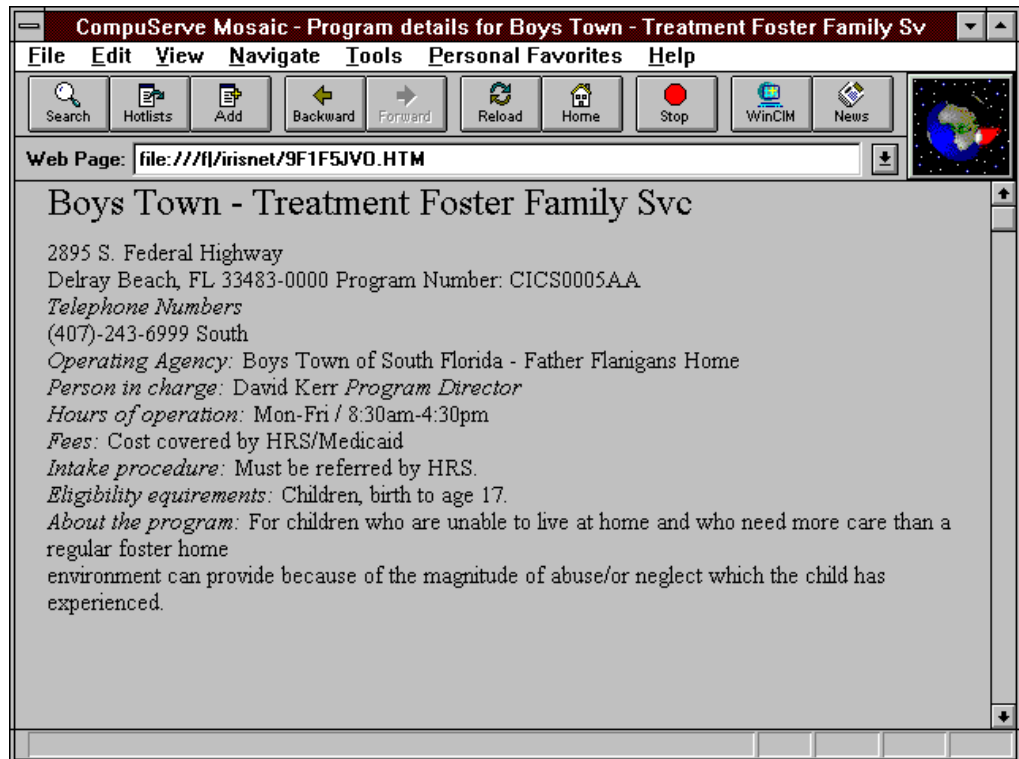
The screen below comes from IRIS 2.0 after going through the Supervisor menu and entering the password. To extract the files, go to "Change" and input the directory where the files will be outputted. For example C:\HTML would be a practical choice. If the folder does not currently exist, please create the folder under windows explorer. Otherwise an error will occur during the streaming process.
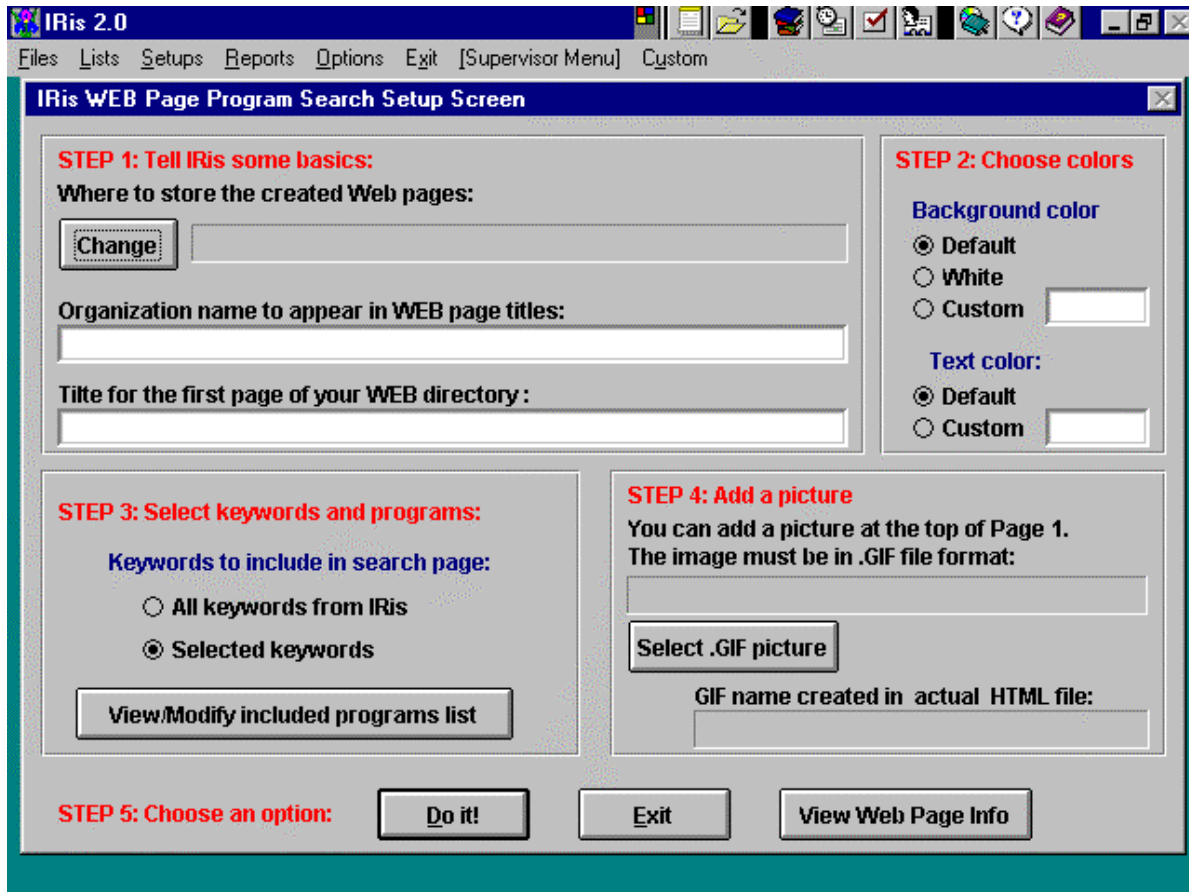
Under "Keywords to include in search page", one can specify the organizations to Jeanrate

HTML information files for. When ready, click "Do it!". And the organization's files will be

extracted to C:\HTML assuming that is the location specified.

Files with .html extensions should exist in the C:\HTML directory now. And these files can be

copied onto the web server to be displayed publicly on the Internet.

HTML files Streaming Preparation

Prior to the extraction process, two very important steps need to be taken if the streaming process was something to be done for the first time. First, the file foxtools.fll needs to exist in the folder where the files will be outputted. If C:\HTML is the destination directory, then foxtools.fll needs to exist inside before the "Do It!" button is pressed.

To locate the file under Microsoft Windows 95 / 98:

go to the Start Icon -> Find -> Files or Folders
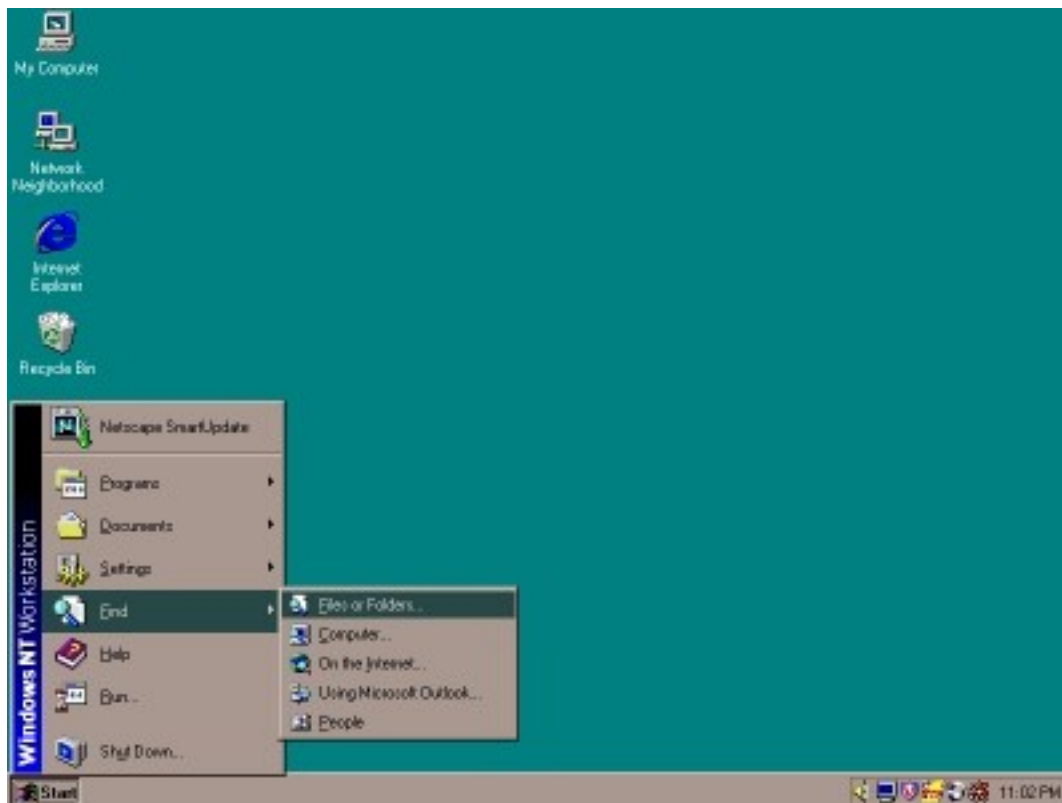
Then enter *.fll in the "Named" prompt and C:\ in the "Look in" prompt. This will allow the searching of all files ending in fll in the C drive. Other drives such as D, E, F, or other existing letters can also be entered in the search.
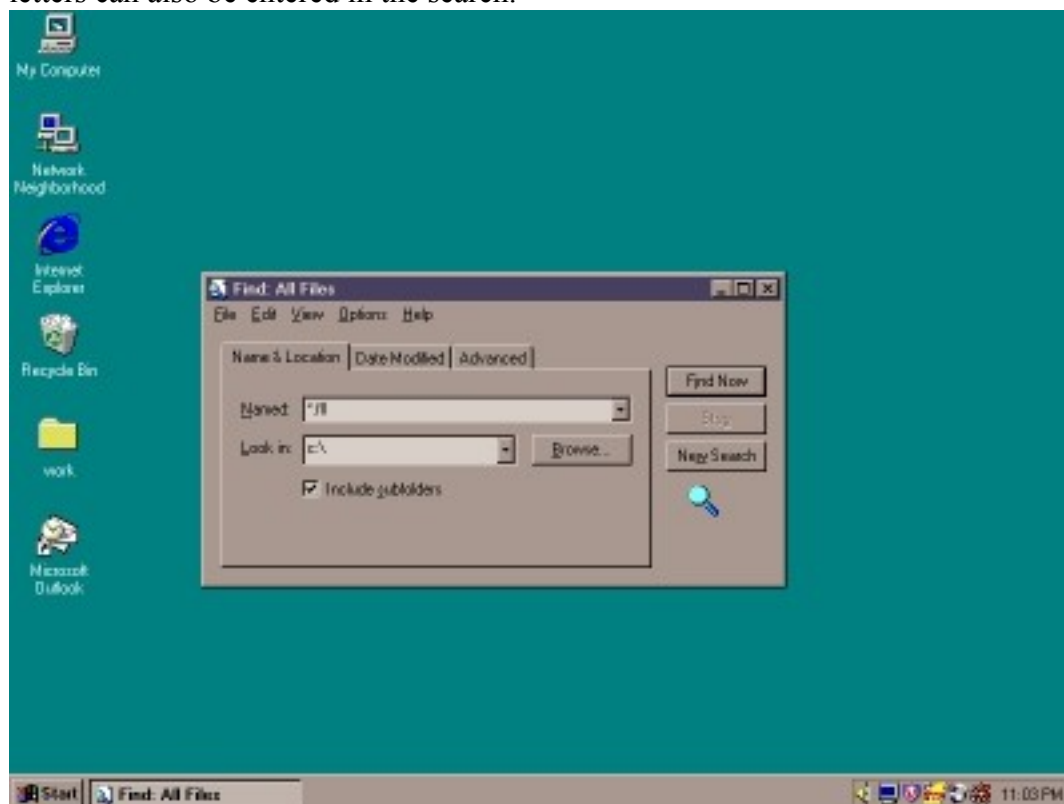
Once the file is found, the "foxtools.fll" file needs to be copied to C:\HTML or wherever the

streaming destination may be. This step is crucial in order to avoid the "PRO2ERROR"

generated by the IRIS software.

In addition, a generic/text only printer needs to be added in order to enforce the streaming of the

HTML files in an understandable format. Otherwise, the files extracted will be in strange ASCII

formats, and neither the code or the content will be understandable.

First, create a generic printer by doing the following:

Go to the Start Icon -> Settings -> Printers
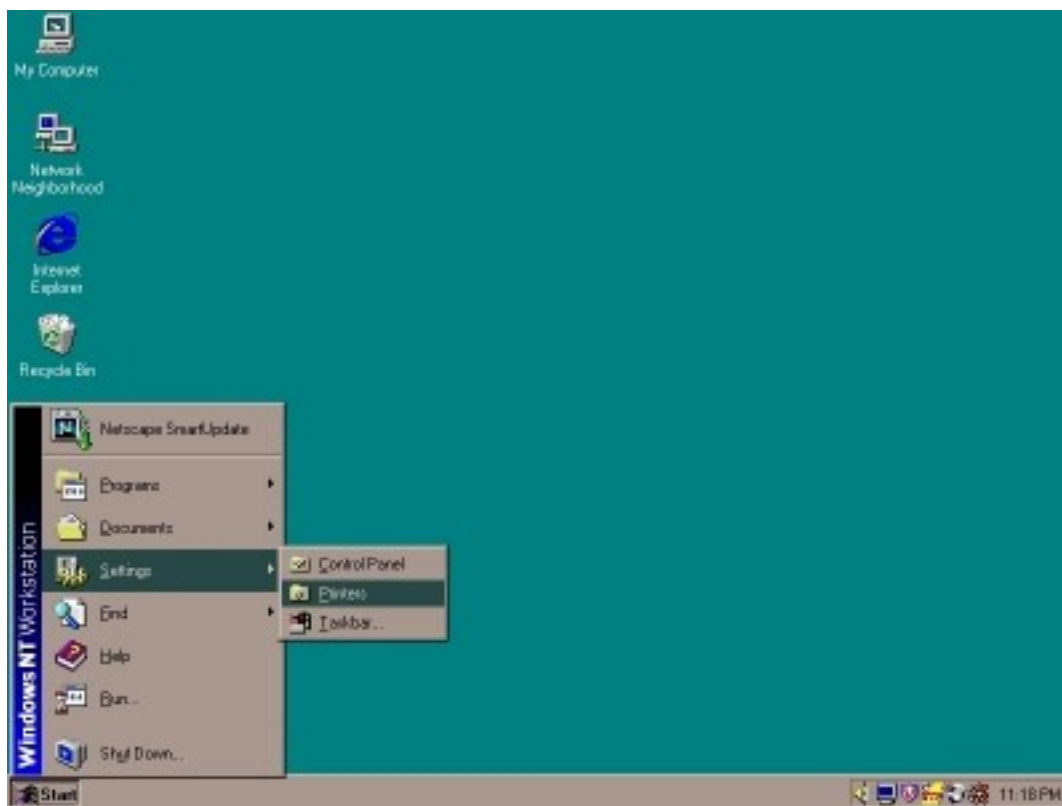
Then go to Add Printers -> My Computer -> Next

Then the screen to specify certain printers will pop up.
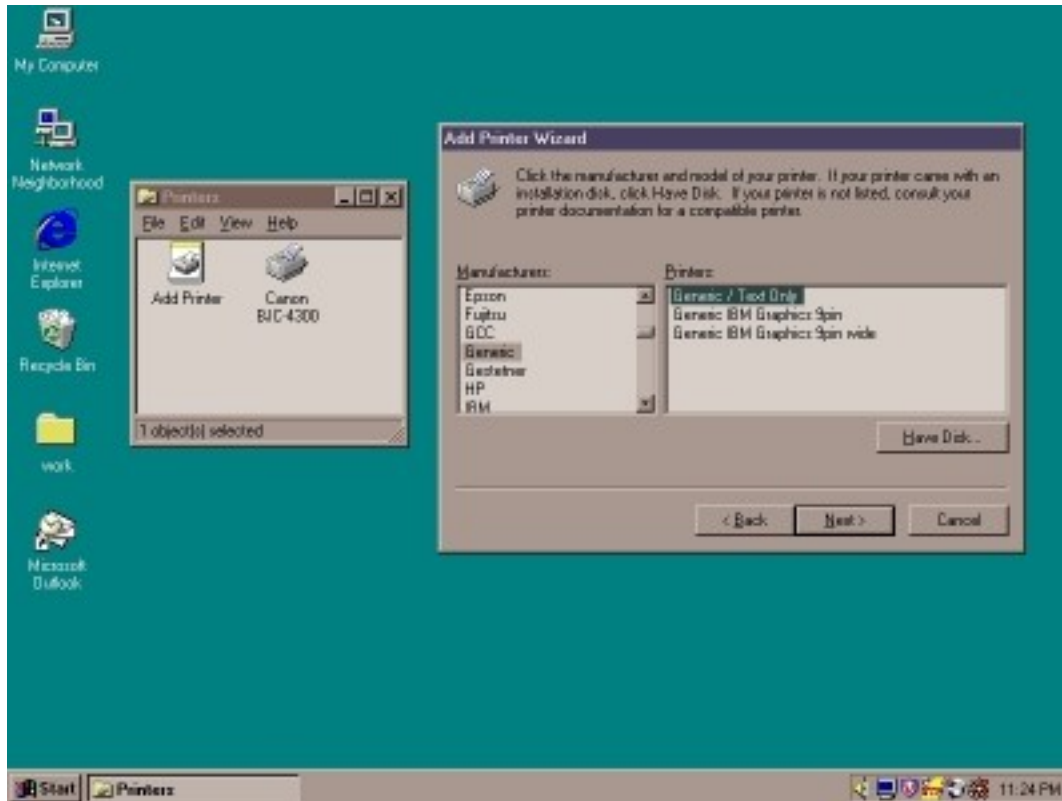
Be sure to select generic -> generic / Text Only -> Next

Add Printer Wizard

Click the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for a compatible printer.

Manufacturers:
- Epson
- Fujitsu
- GCC
- Generic
- Gestetner
- HP
- IBM

Printers:
- Generic / Text Only
- Generic IBM Graphics 9pin
- Generic IBM Graphics 9pin wide

Have Disk...

< Back   Next >   Cancel

If these steps were done correctly, then a screen asking you to insert the Windows 95 / 98 CD could pop up if the drivers were not already installed.

During the extraction of the HTML in IRIS, a menu requesting a certain printer type will pop up. If the setting type is set to Jeanric / Text printer, then the HTML files will be streamed out in a normal ASCII fashion that is understandable. This part will be required assuming this is the first

time the files were streamed out on that particular computer. Unless by coincidence a Jeanric /

text printer is already installed.

Appendix D: Sample HTML file from United Way IRIS 2.0

United Way of Central Massachusetts

484 Main St. Suite 300
Worcester, MA 01608-1880

Telephone Numbers and Contact Information
(508) 757-5631 *Client Contact*
(508) 757-2712 *Fax*
rvelazquez@mail.unitedwaycm.org *Email*

Operating Agency: United Way of Central Massachusetts
Agency Type: Non Profit
Person in charge: Ms Rosalia Velazquez President
Hours of operation: Mon-Fri 9am-5pm
Fees: None.
Eligibility requirements: Fund distribution to participating agencies only.
Intake Procedure: N/A.
Area Served: See program details.
About the program: Fund raising and fund distribution to participating agencies; community planning; AFL/CIO Community Services; Volunteer Center and First Call for Help. Handicapped Ramp program through Labor Community Services department. Handicapped accessible. SERVICE AREA: Auburn, Barre, Boylston, Brookfield, East Brookfield, West Brookfield, North Brookfield, Douglas, East Douglas, Fiskdale, Grafton, Holden, Hubbardston, Leicester, Manchaug, Millbury, Morningdale, New Braintree, Northbridge, Northboro, Oakdale, Oakham, Oxford, Paxton, Princeton, Rochdale, Rutland, Shrewsbury, Spencer, Sterling, Sutton, Upton, Uxbridge, West Boylston, Whitinsville, Wilkinsonville, Worcester.

Transportation: None. Located on busline, limited parking.

[X]=*Yes or True*   [ ]=*No or False*

[ ] VO: Anytime
[ ] VO: Mornings
[ ] VO: Afternoons
[ ] VO: Evenings
[ ] VO: Weekends

Appendix E: Instruction Manual

Read

As soon as the user enters the address: http://www.unitedwaycm.org/projects/ir/frontpage.html , the frontpage will be displayed. This page is where every activity branches off.

Now to proceed with the reading of the contents in the database, click on "Read Organization Program Records".

Click on the letter to link to the company starting with that letter

no company should begin with symbols

number A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Click here to Return
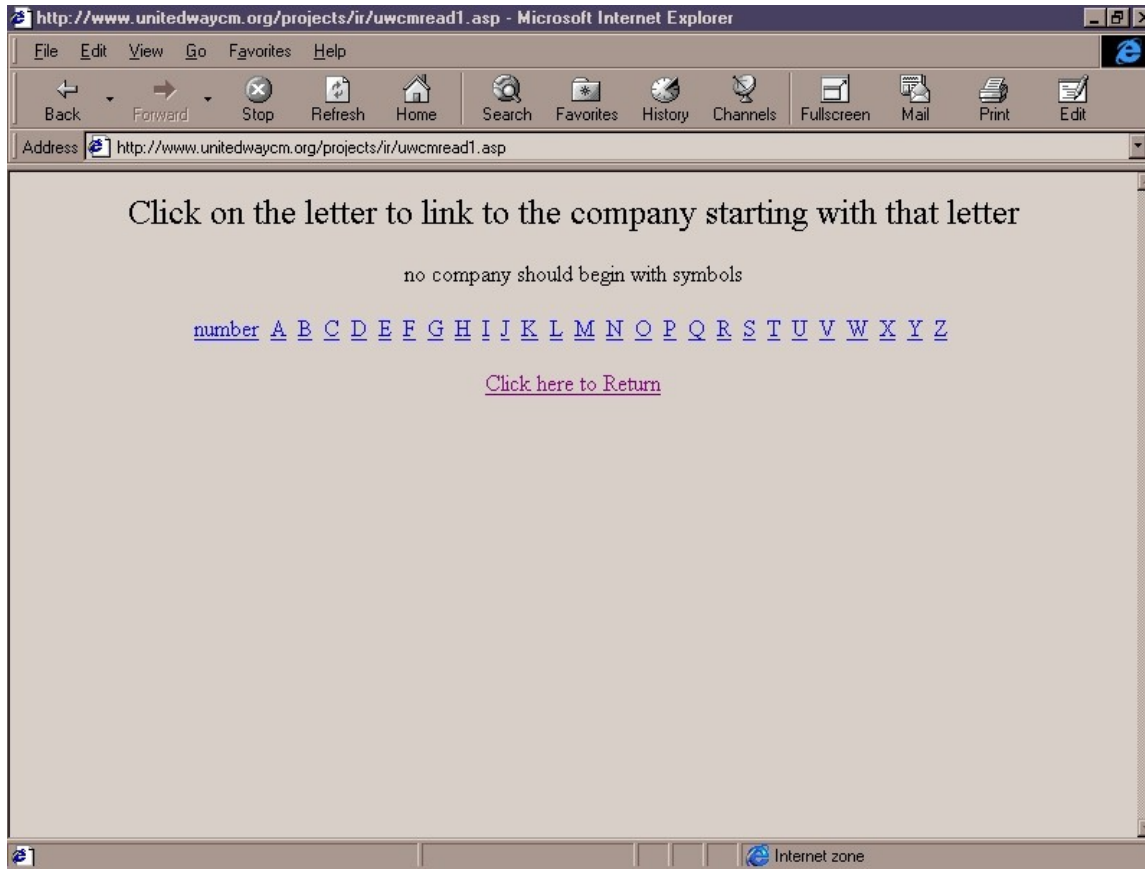
From here the user can select from an alphabetical assortment of organizations already in the database. So far no organizations should begin with a symbol.

Let's click on the letter "U" to display all organizations beginning with uppercase and lowercase "U".

File   Edit   View   Go   Favorites   Help

Back   Forward   Stop   Refresh   Home   Search   Favorites   History   Channels   Fullscreen   Mail   Print   Edit

Address http://www.unitedwaycm.org/projects/ir/uwcmread2.asp?alpharead=U

UnitedWayCM

Click here to Return

Internet zone
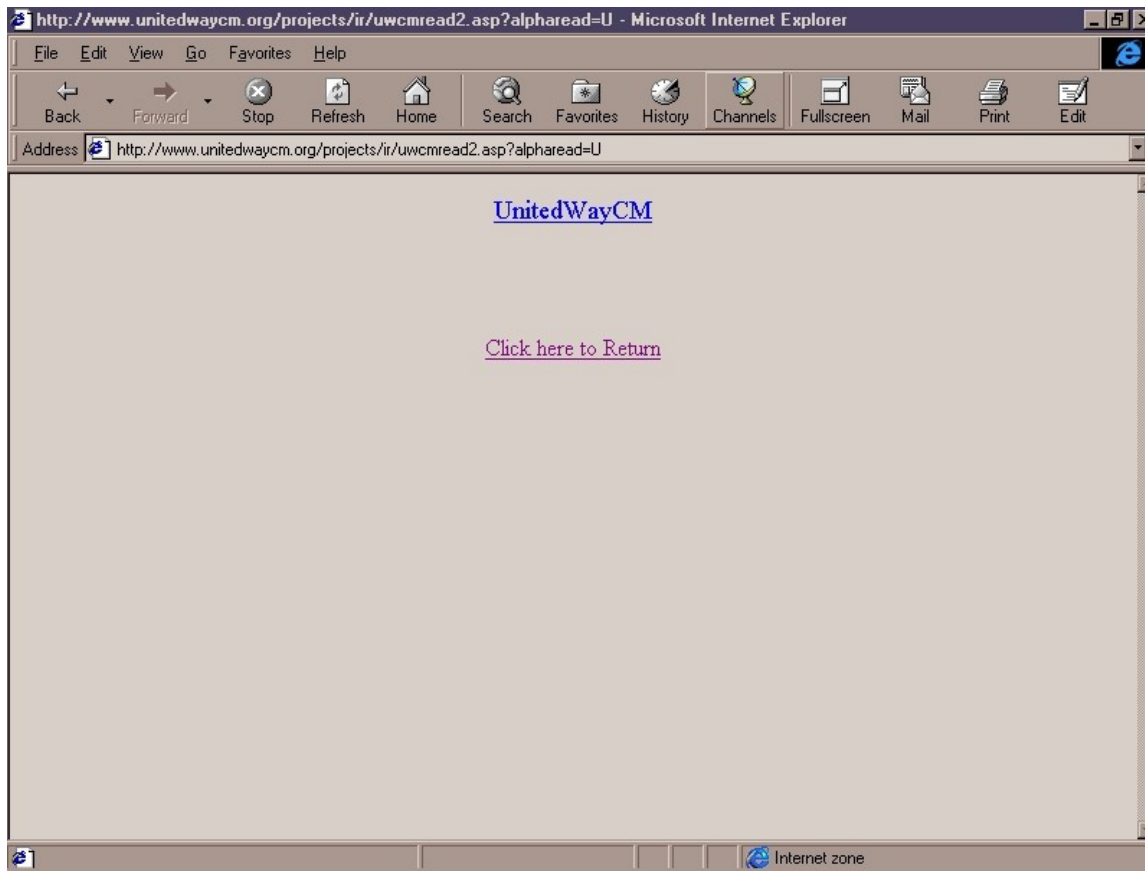
After clicking on "U" the organization United Way of Central Massachusetts is displayed. Assuming there are numerous organizations beginning with U, then they would also appear on the listing. You can certainly click "Click here to Return" to bounce back to the frontpage menu.

Click on "UnitedWayCM" to continue.

Project name: United Way of Central Massachusetts

Street Address: 484 Main Street
City Address: Worcester
State: MA
Zip: 01680
Contact: phone (508) 757-5631
Eligibility Requirements: none
Fax: (508) 757-2712
Email:
Operating Agency: UnitedWayCM
Agency Type: Non-Profit
Person in Charge: Jean Strock
Hours of Operation: 9-5
Fees: depending on service
Areas Served: Central Massachusetts
Intake Procedure: call
About the program: United Way of Central Massachusetts is an organization of donors striving for excellence in meeting the human service needs of the community through the development and effective distribution of resources to achieve the greatest impact.
Handicap Access: Yes
Transportation: none
Service Area Description: Covers Central Massachusetts

Internet zone

This should display all the necessary fields inside that particular project. Currently this is the only project listed under the United Way of Central Massachusetts organization. Assuming more projects are enlisted under the same organization, the user would be able to scroll down to see additional available information.

Now, we can return to the previous page after viewing the information.
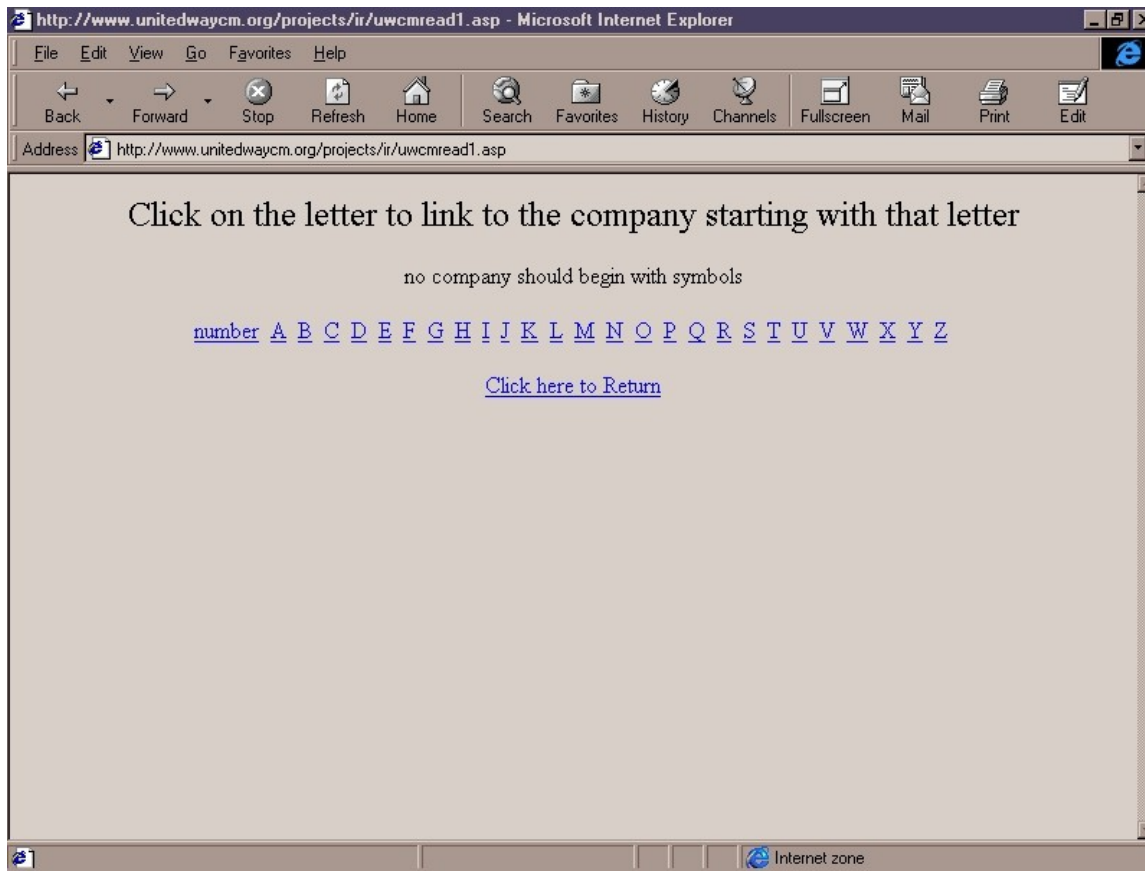
Back in the alphabetical listing, let's click on the letter "D" to display organizations starting with "D" or "d".

No Company starts with the letter D or d

Click here to Return
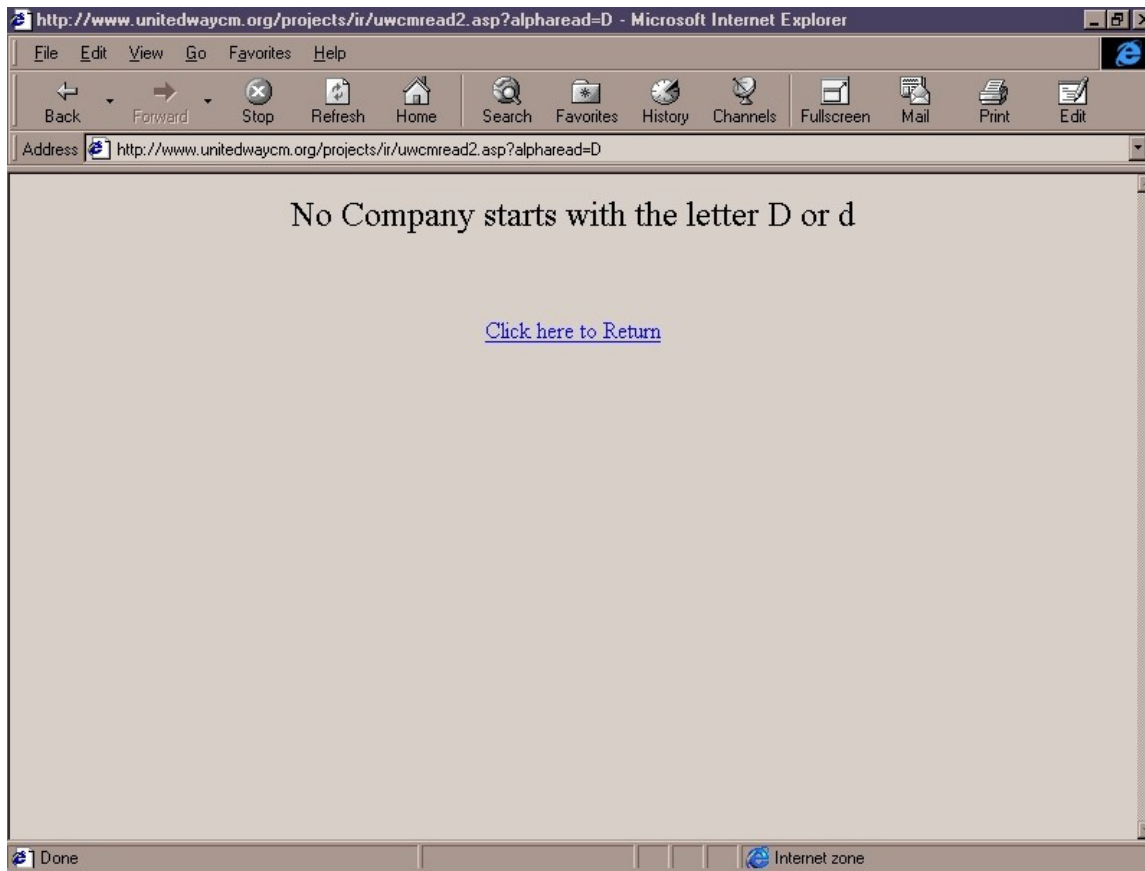
Assuming there are no organizations starting with the letter "D" or "d", a message will be displayed.

<u>Write</u>
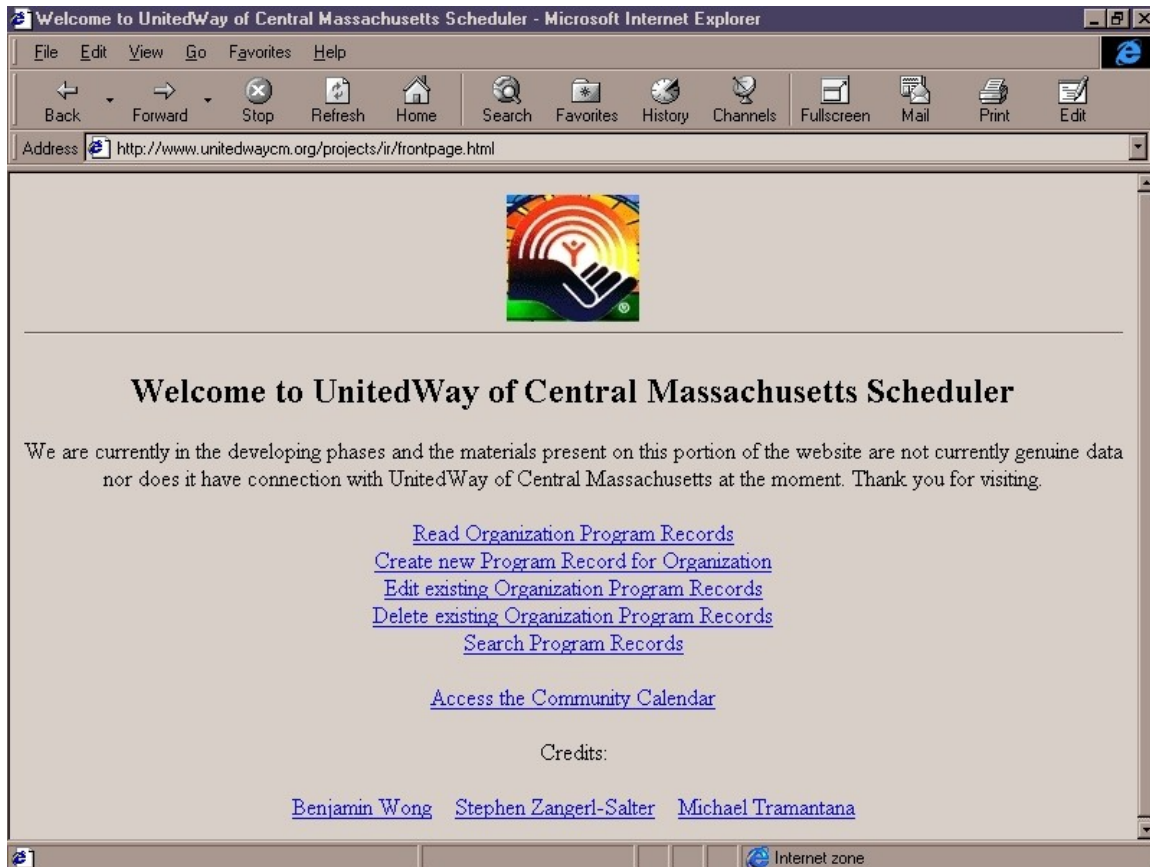
From the frontpage menu, click on "Create new Program Record for Organization" to start a fresh new record for your organization.

Please login for Writing to Database

Username: Jean
Password: ********

SUBMIT
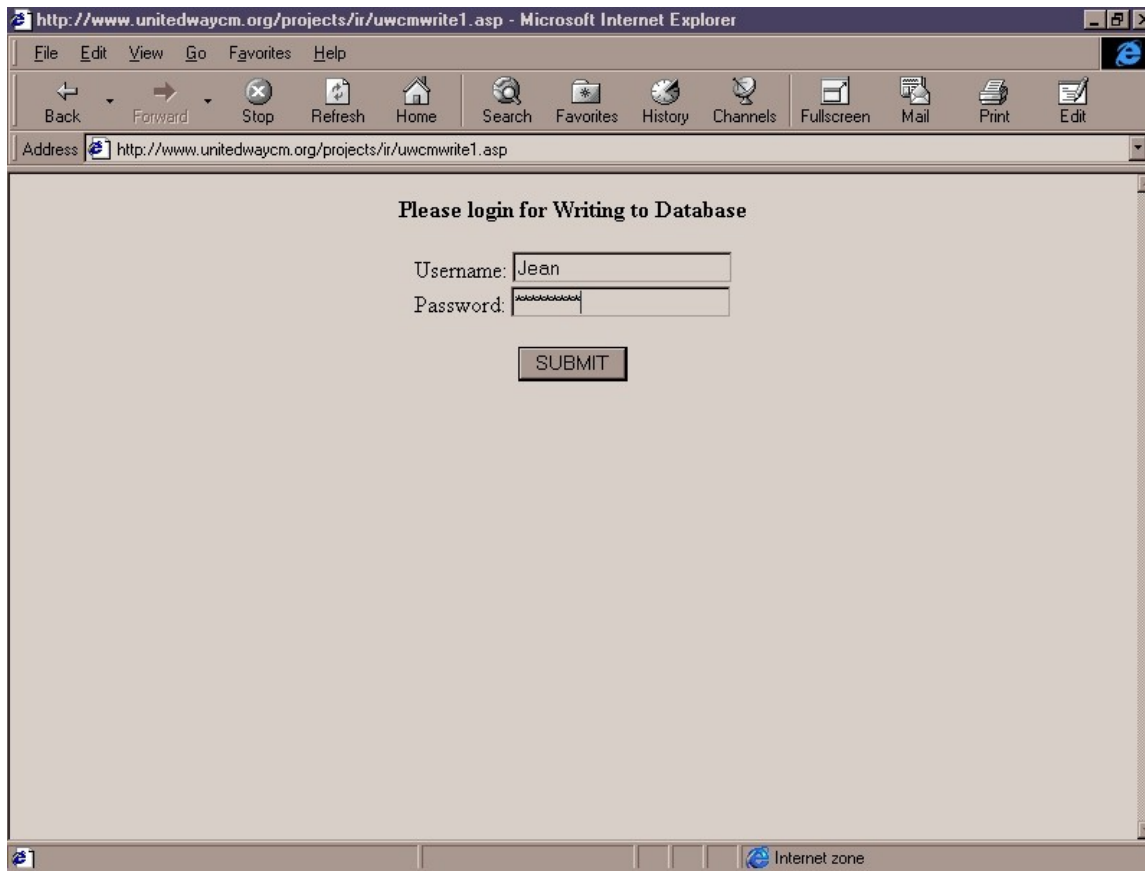
This screen will provide security measures by prompting the user for a password and username. Upon logging in, the database will recognize the organization that the user is from plainly from the username and passwords. If the information entered are invalid, the page will return to this exact state, and prompt for the password again.

Click "Submit" to send in the user information.
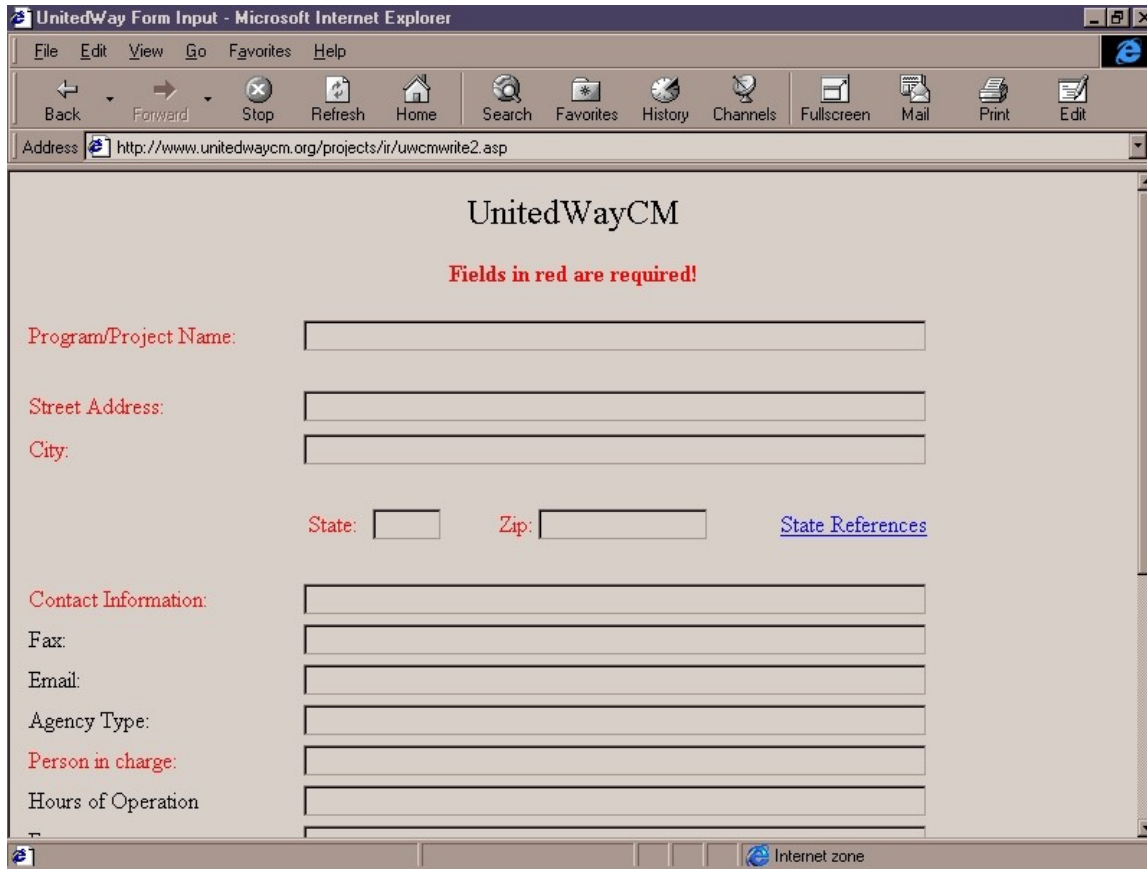
Because Jean is the correct username for United Way of Central Massachusetts, this will bring up an information form, where the user can enter the necessary information to share publicly. Notice the fields in red are required fields, so they cannot be left blank.

When ready to submit the information, scroll down to the bottom of the form and click submit.
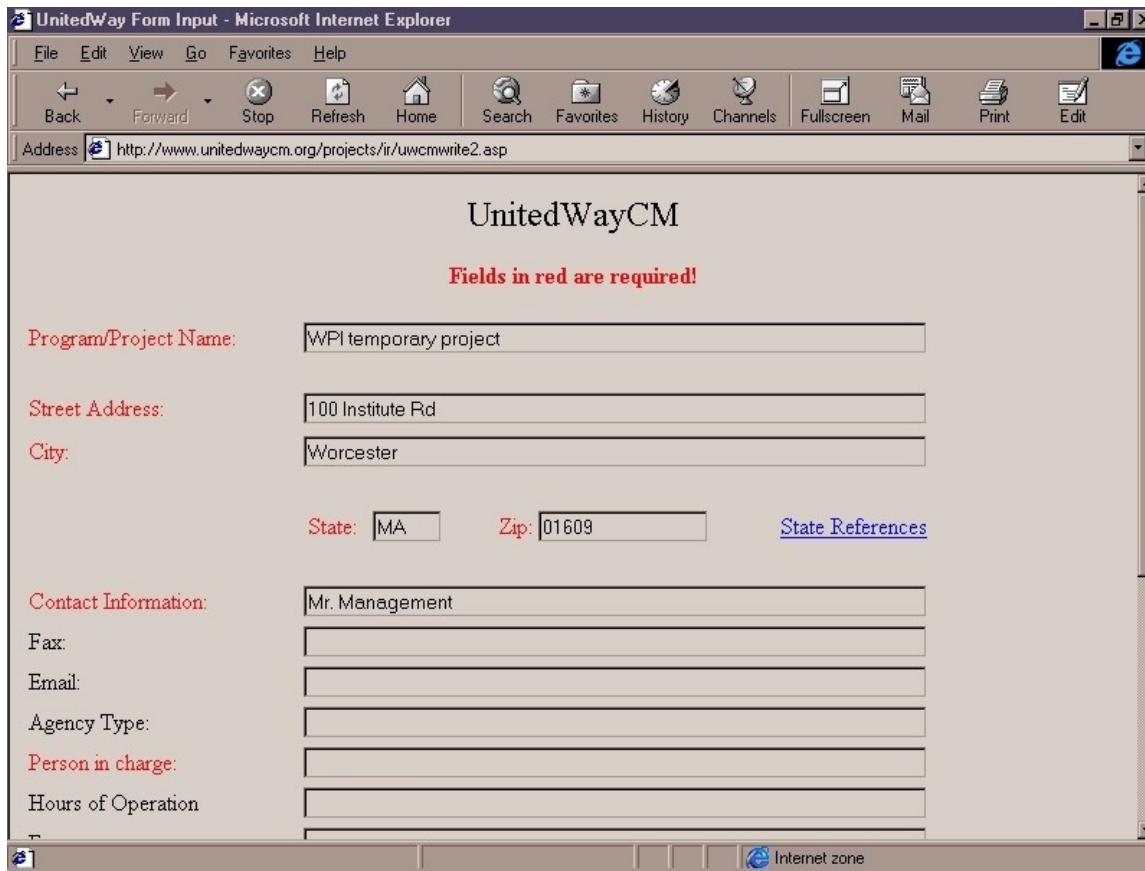
Here the information is entered. Notice the field "Person in Charge", a field in red is required, but left empty.
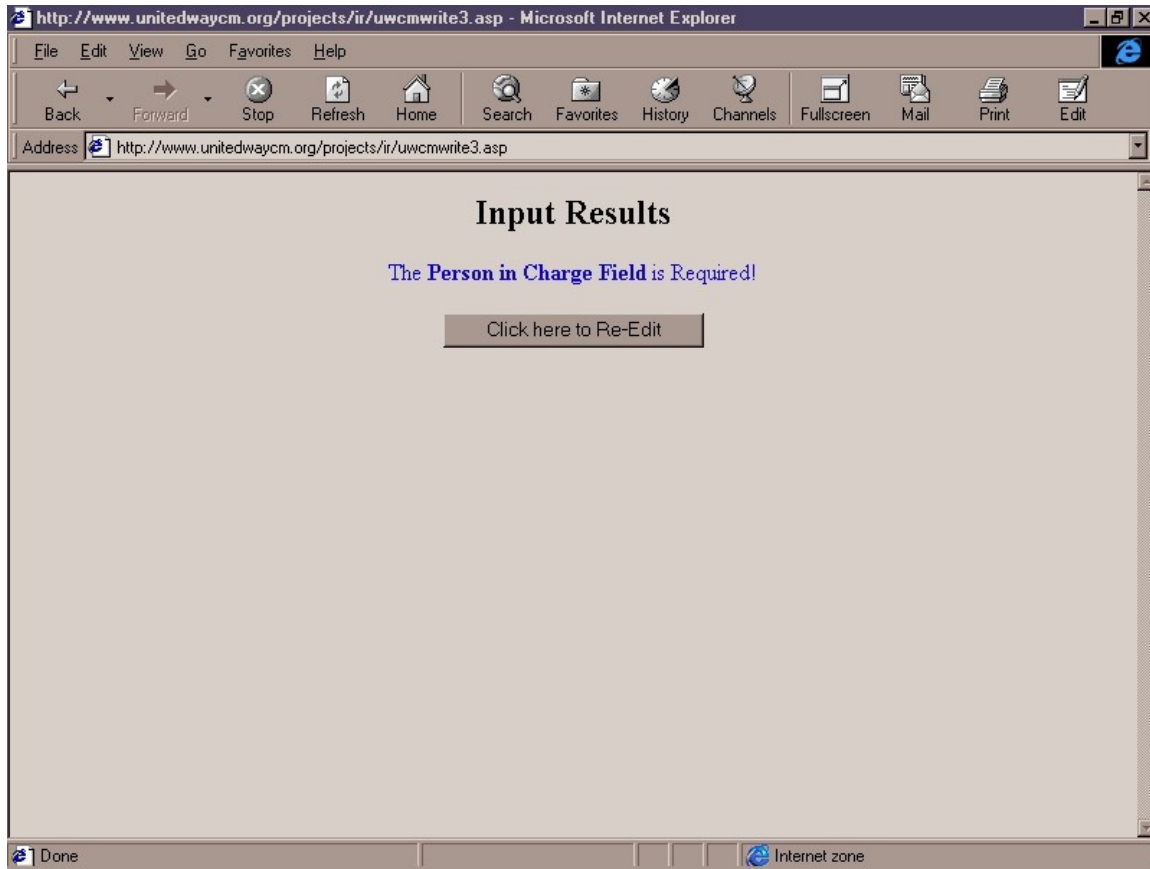
When submitting, it will precisely pin point the exact error. In this case, the "Person in Charge" field is required, and it's allowing the user to return to editing with the "Click here to Re-Edit" button.

Input Results

Successfully written into database

Click here to go back
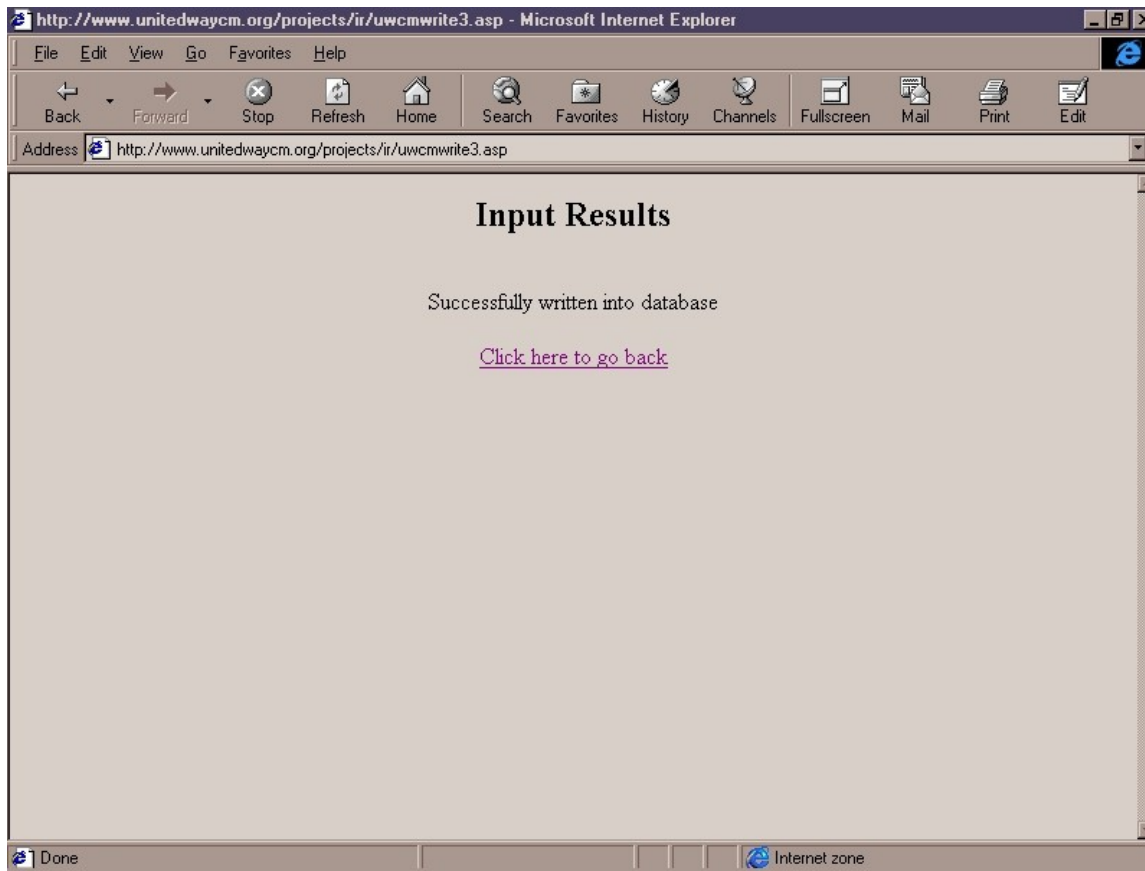
Assuming all the required fields were properly filled in. The user should receive this message saying the database successfully entered the database. If database writing errors occur, error messages should also pop up to alert the user.

The user can return to the frontpage menu and click on "Read Organization Program Record" to see the creation of the new record in effect.

Modify
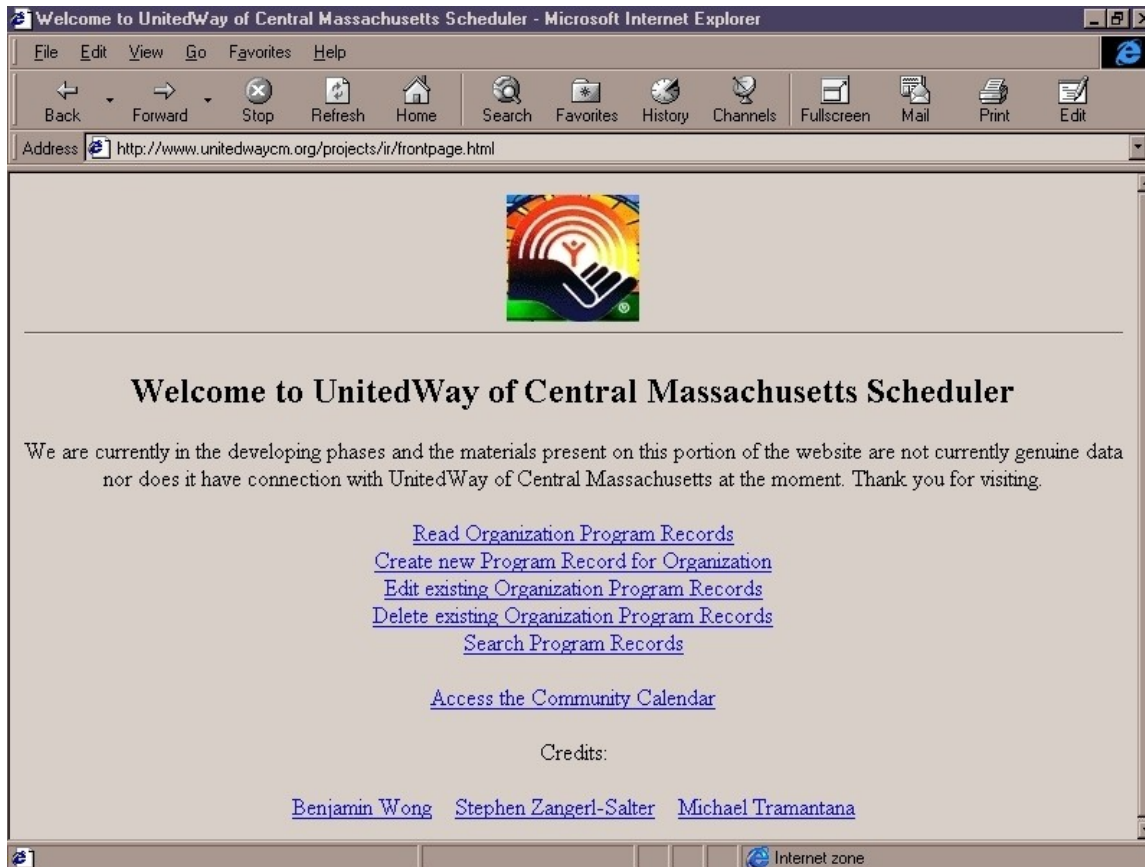
From here the user can click on "Edit existing Organization Program Records" to modify their organization records that are already stored in the database.
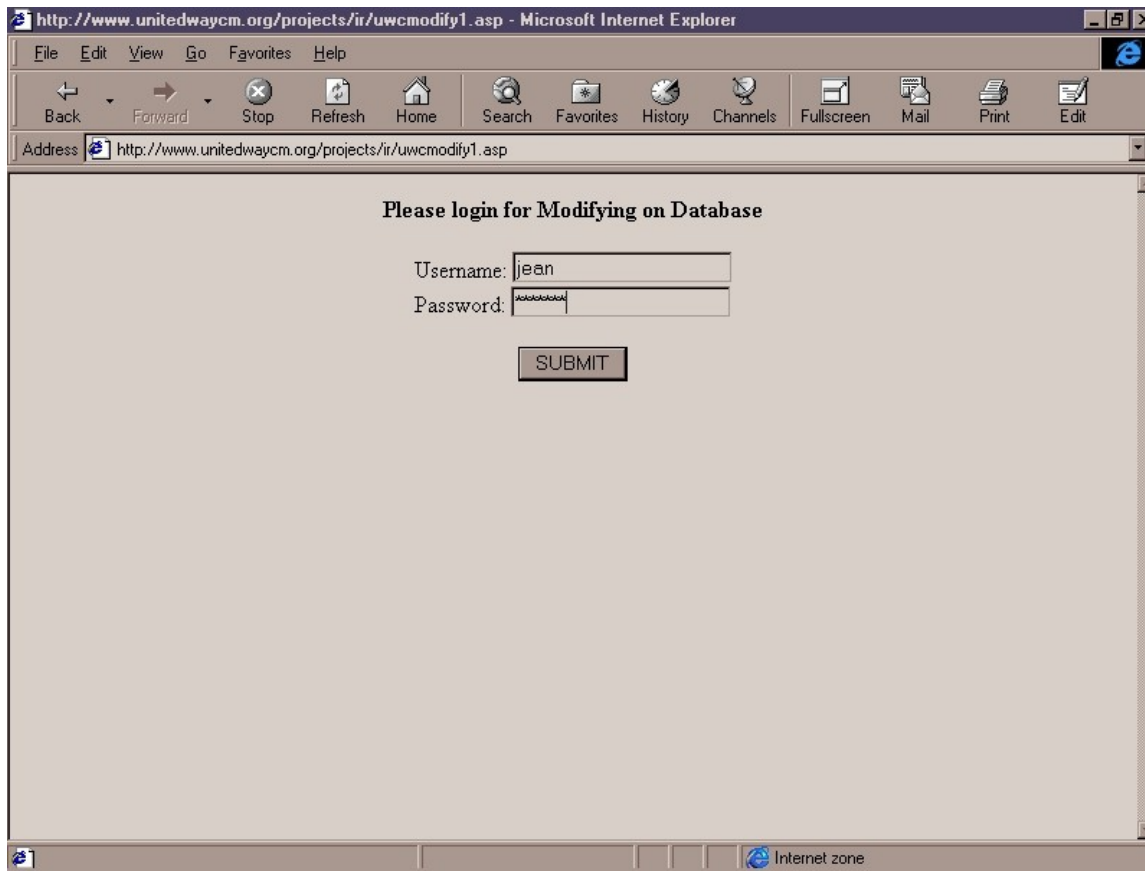
Once again, the password and username request prompts will come up. Users should only be able to modify their own information. And the submittal of the username and passwords will be recognized by the database as to who is logging in to edit the current information.
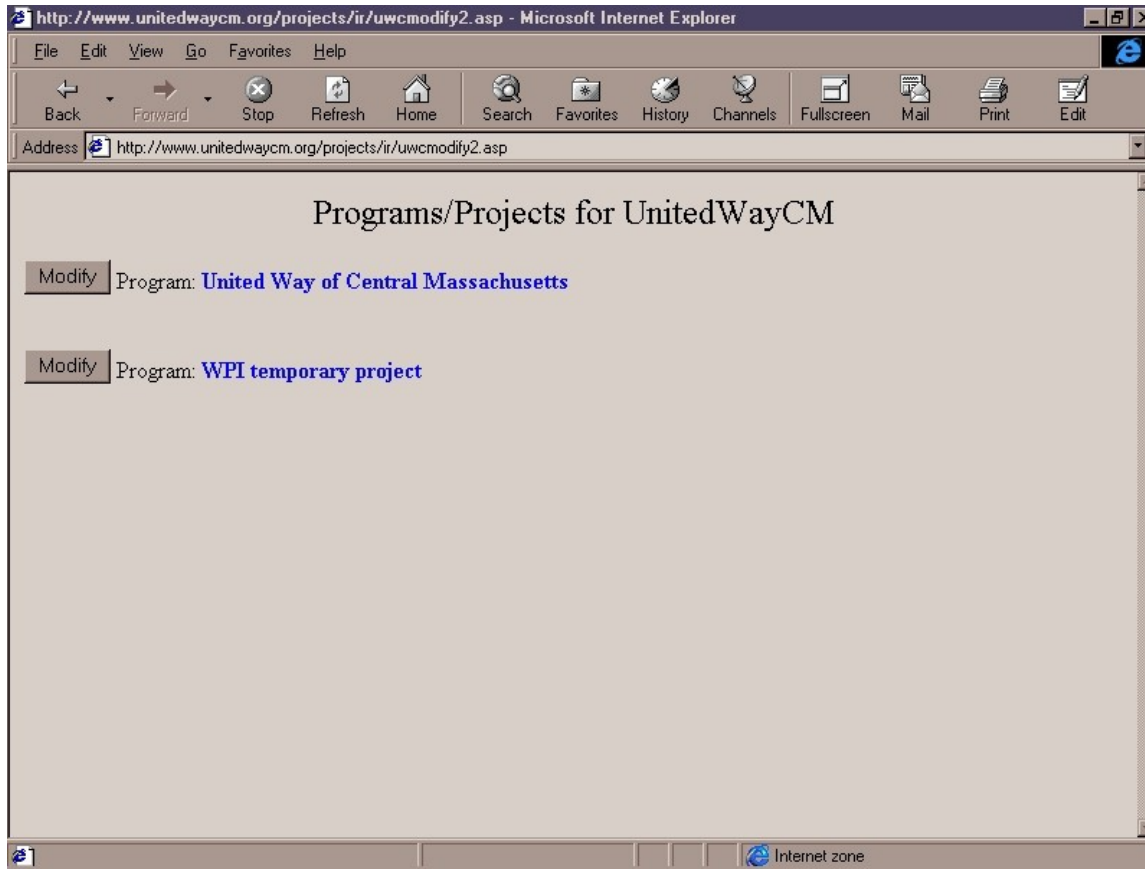
The screen will let the user know which organization you logged in for, in this case United Way of Central Massachusetts. Now by clicking on the individual "Modify" button, the user can actually apply changes to any of the programs within that organization.

Let's click on "Modify Program: WPI temporary project"

During the modification of the record, the title at the top will specify once again, the organization that is doing the editing. And all information can be changed as long as the required fields are filled in.
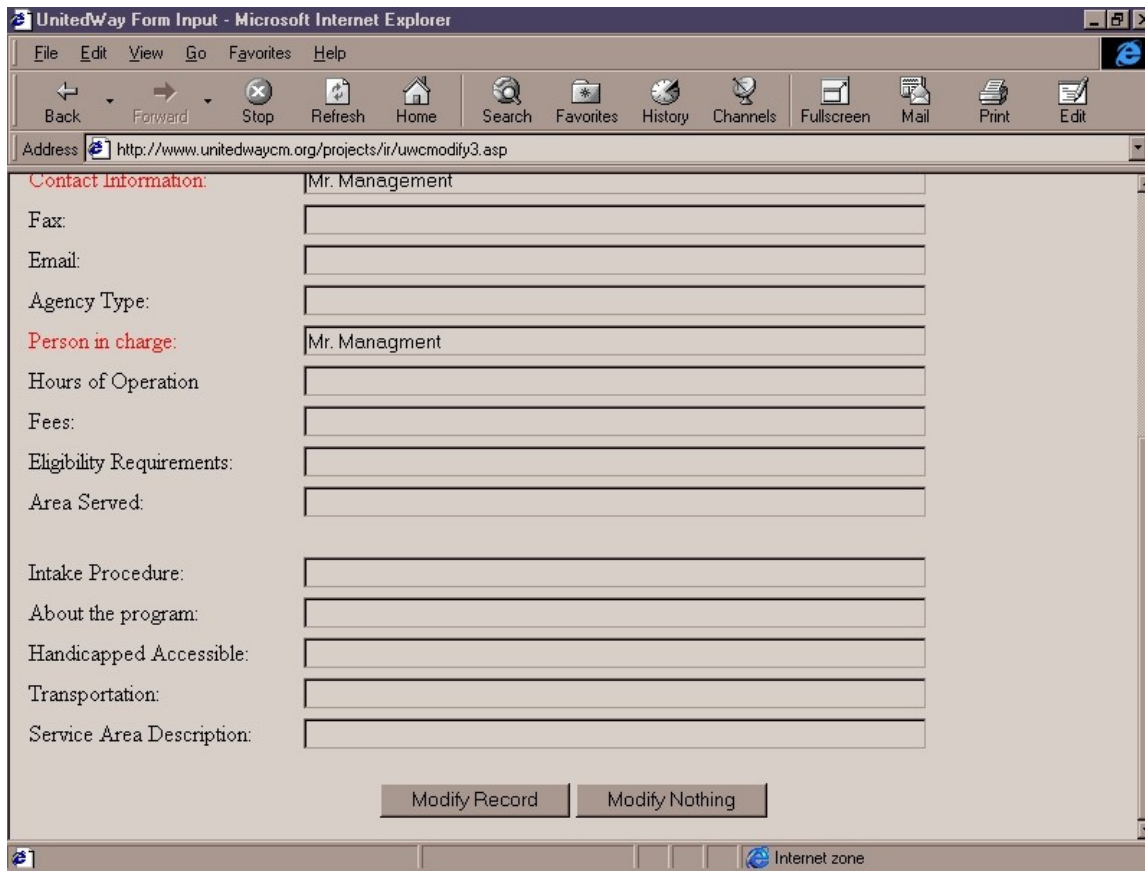
When scrolled down to the bottom, the user has the choice of modifying the record, or modify nothing to return the record to its original state.

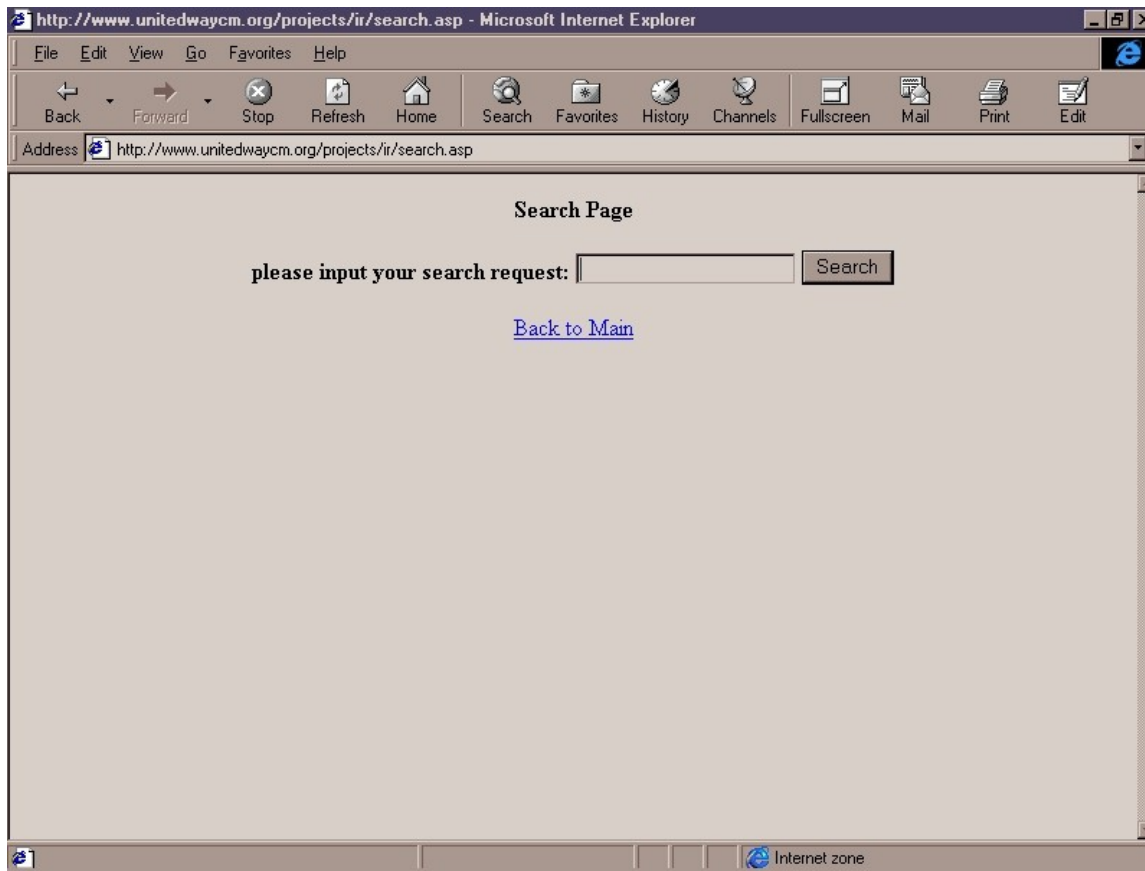Click "Modify Record" when ready to proceed.
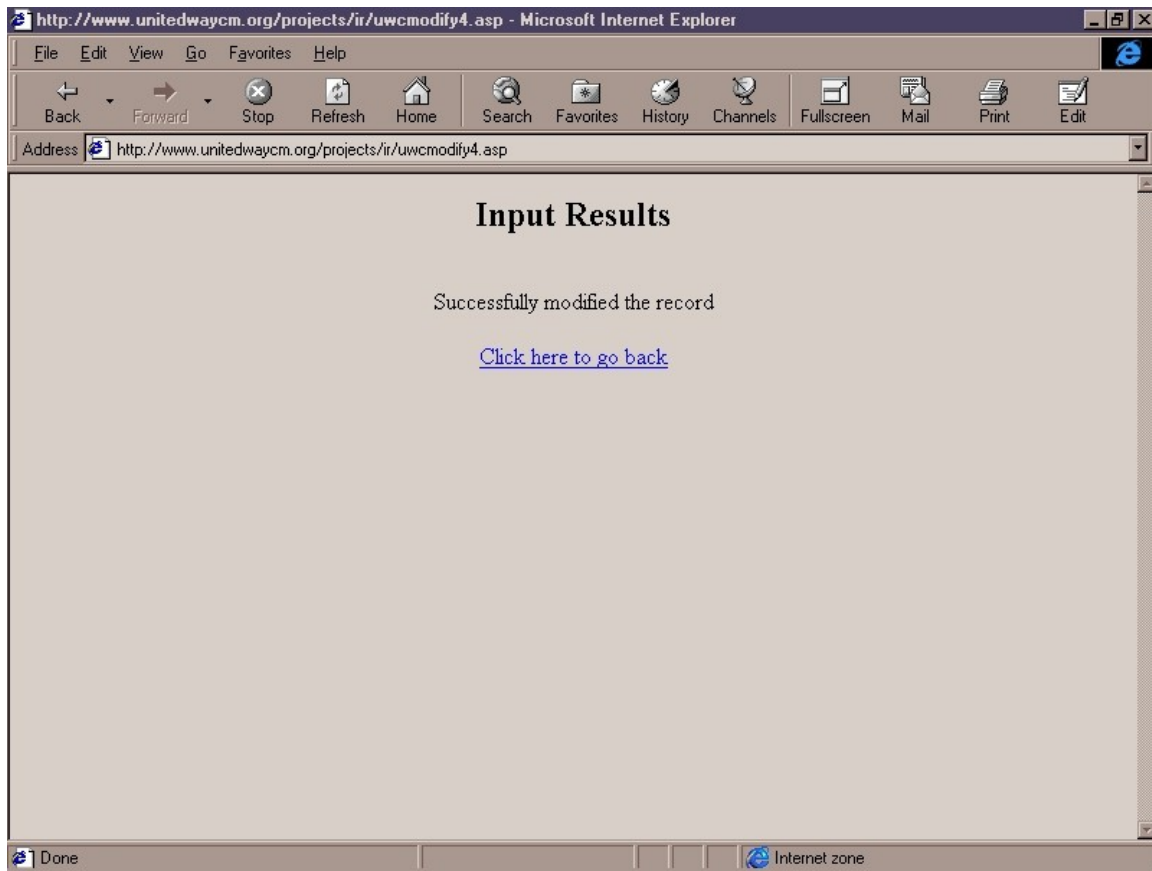
A message will notify the user of a successfully modified record. The user can return to the frontpage.
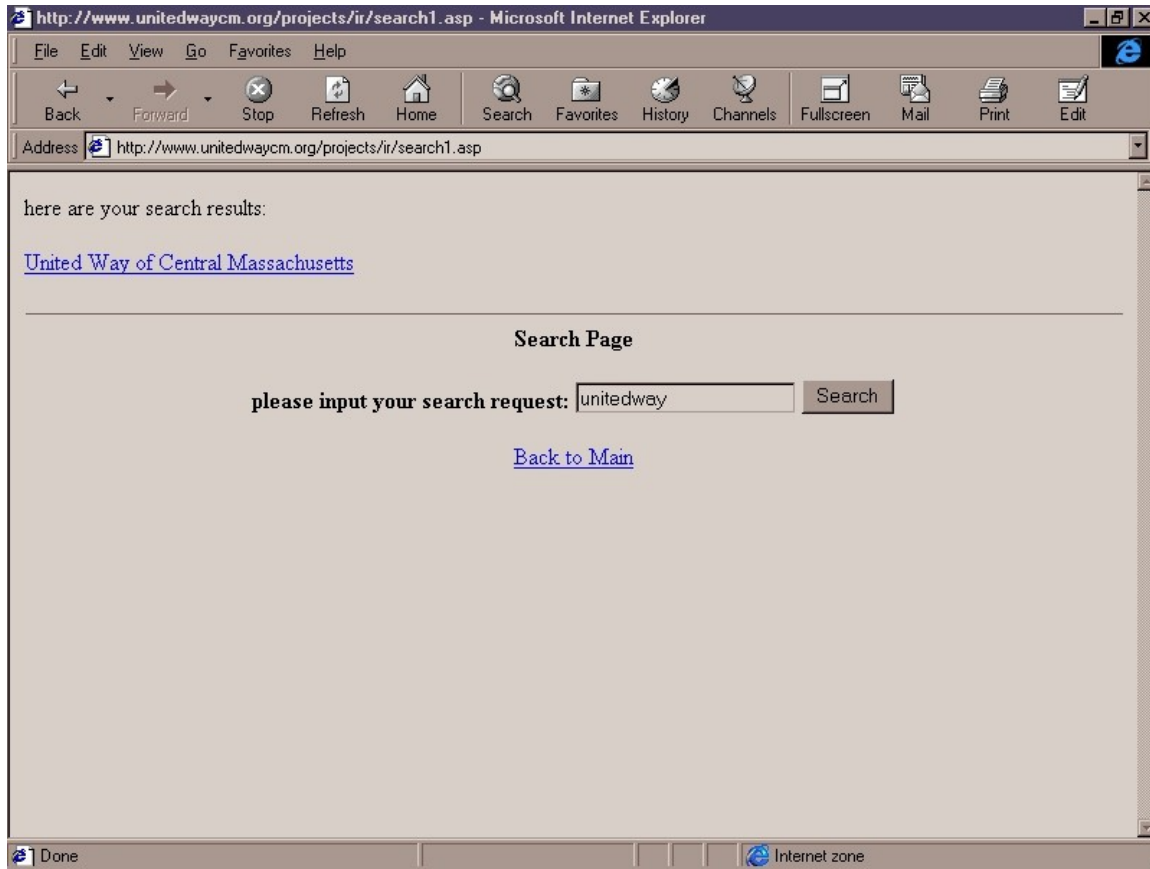
Search
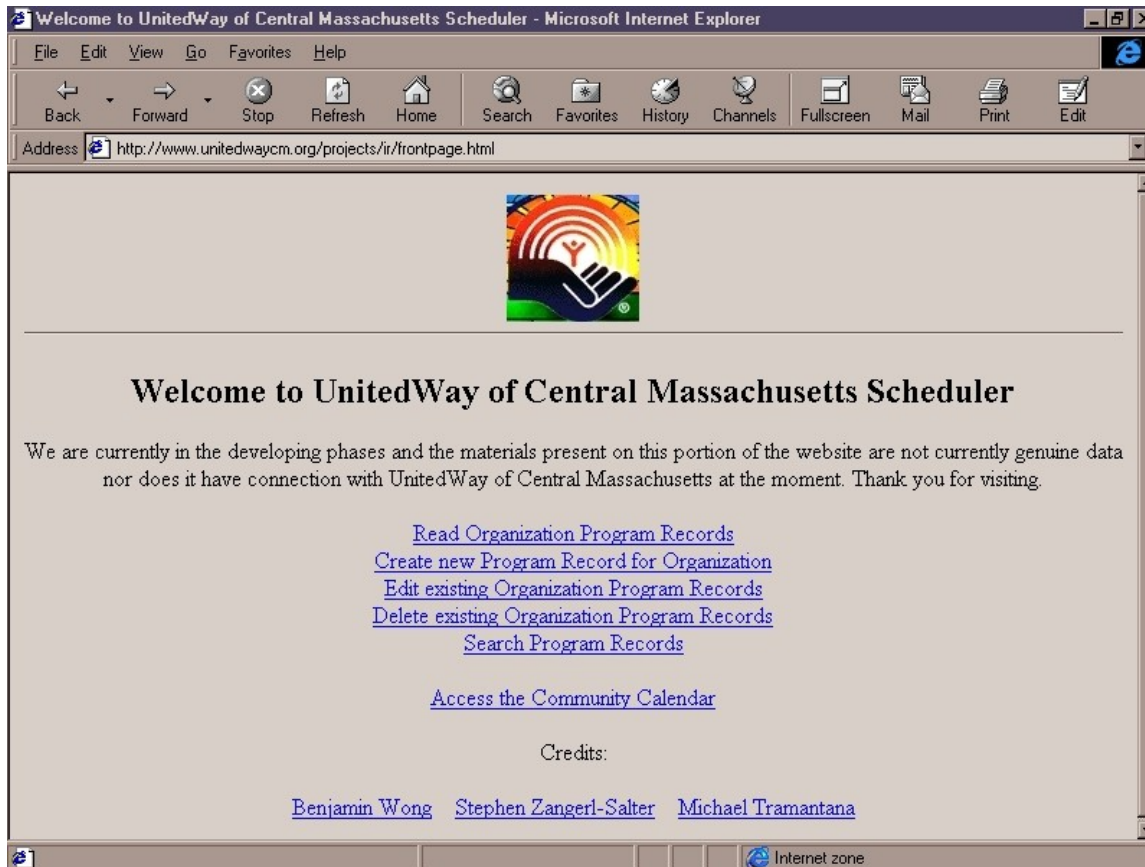
Click on "Search Program Records" to perform information searches across the database.

Once entered the search screen, the user will probably notice that there are no passwords needed here. That is due to the fact that any one can publicly look up fields and information of any kind without being a part of any of the programs at all.
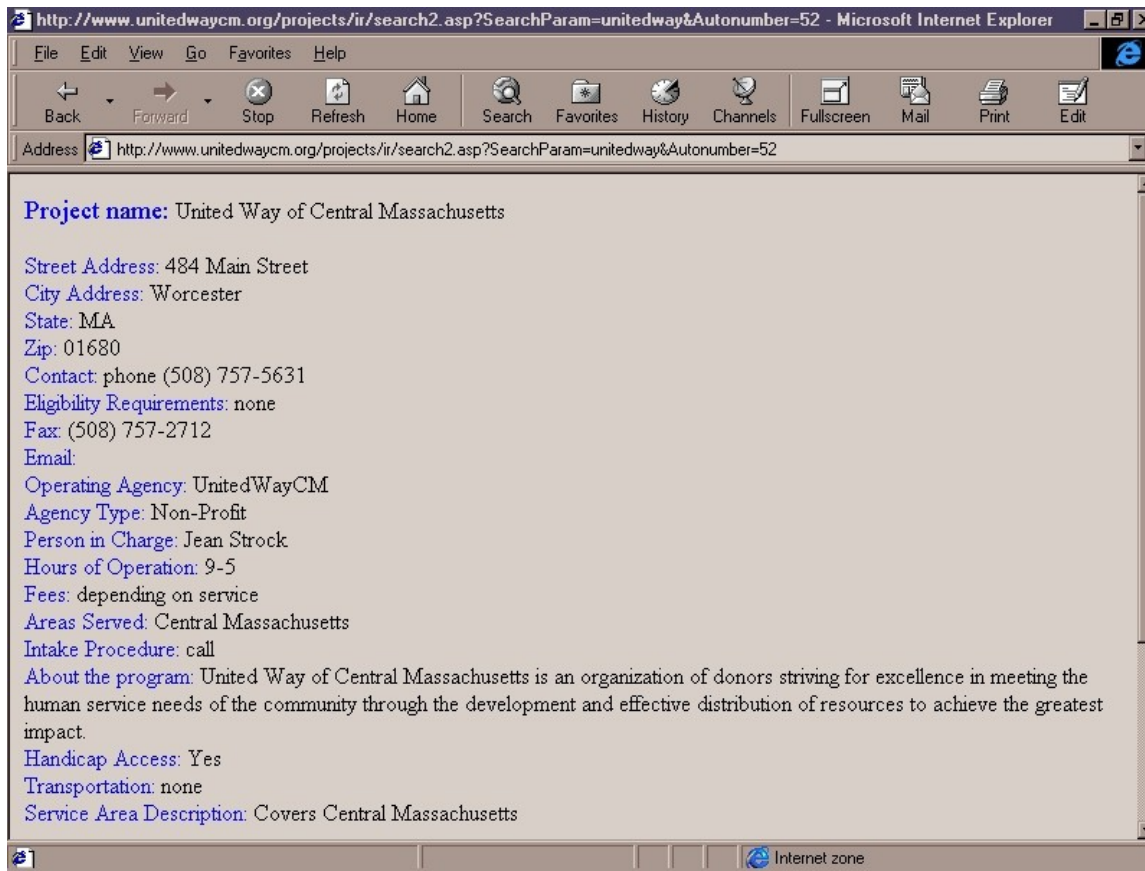
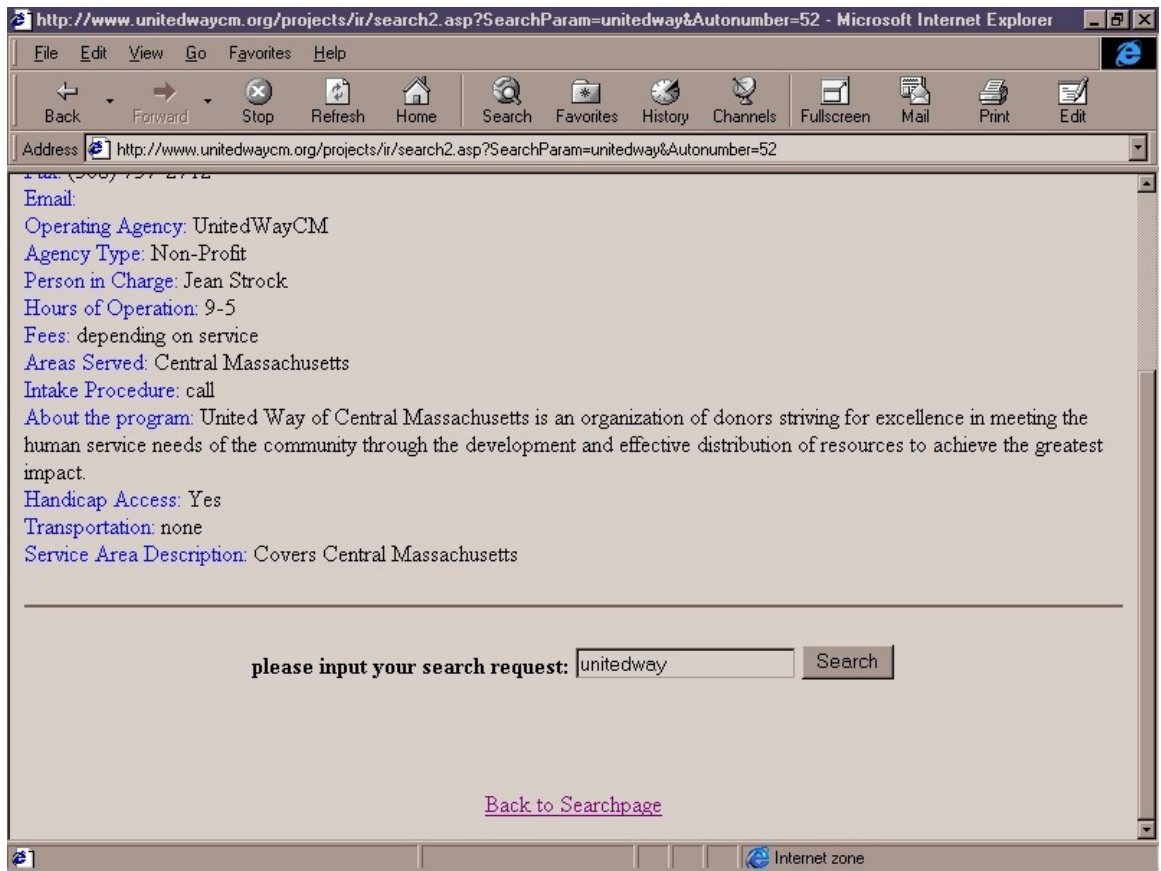Just enter some text into the prompt and click "search" to begin searching the database.

In this case, I looked for the word "unitedway" and a program containing information on the word "unitedway" popped up. As a result United Way of Central Massachusetts was returned.

The search engine allows the searching of all possible text at every possible field right now. If the field "Person in Charge" contained the text "unitedway" in the database, the program containing that information will also pop up. The search engine is currently simplified. Certainly more complex interfaces can be built along with this database.

Now click on the "United Way of Central Massachusetts".

Project name: United Way of Central Massachusetts

Street Address: 484 Main Street
City Address: Worcester
State: MA
Zip: 01680
Contact: phone (508) 757-5631
Eligibility Requirements: none
Fax: (508) 757-2712
Email:
Operating Agency: UnitedWayCM
Agency Type: Non-Profit
Person in Charge: Jean Strock
Hours of Operation: 9-5
Fees: depending on service
Areas Served: Central Massachusetts
Intake Procedure: call
About the program: United Way of Central Massachusetts is an organization of donors striving for excellence in meeting the human service needs of the community through the development and effective distribution of resources to achieve the greatest impact.
Handicap Access: Yes
Transportation: none
Service Area Description: Covers Central Massachusetts

Internet zone

It should reveal the information of the record.

File   Edit   View   Go   Favorites   Help

Back   Forward   Stop   Refresh   Home   Search   Favorites   History   Channels   Fullscreen   Mail   Print   Edit

Address   http://www.unitedwaycm.org/projects/ir/search2.asp?SearchParam=unitedway&Autonumber=52

Email:
Operating Agency: UnitedWayCM
Agency Type: Non-Profit
Person in Charge: Jean Strock
Hours of Operation: 9-5
Fees: depending on service
Areas Served: Central Massachusetts
Intake Procedure: call
About the program: United Way of Central Massachusetts is an organization of donors striving for excellence in meeting the human service needs of the community through the development and effective distribution of resources to achieve the greatest impact.
Handicap Access: Yes
Transportation: none
Service Area Description: Covers Central Massachusetts

please input your search request: [unitedway]   [Search]

Back to Searchpage

Internet zone

Scrolling down that same screen, the user will have the rights to enter another set of text to search or click "Back to Searchpage" to return to the previous screen.

Calendar
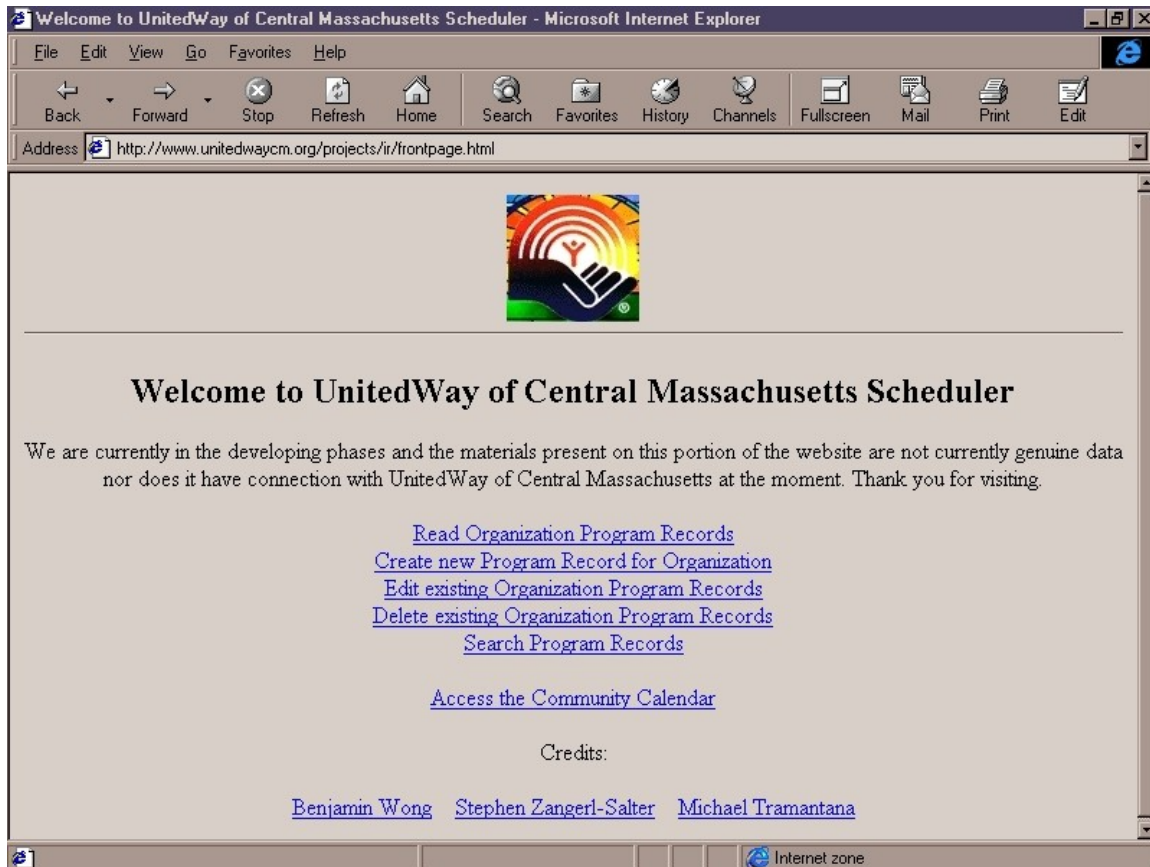
From the main frontpage, click on "Access the Community Calendar" to enter the calendar portion of the database.
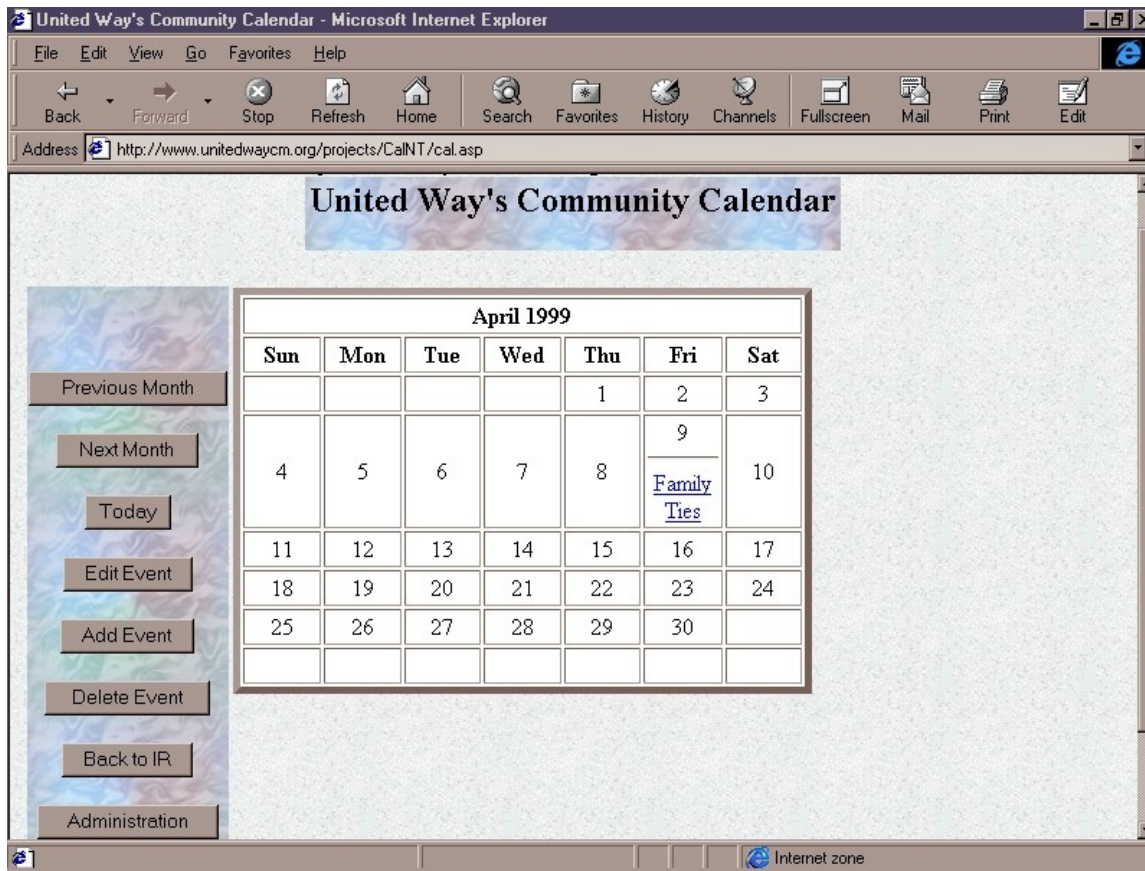
As appear hear, the calendar stands out like a normal calendar. And the buttons on the side are functions that go with the calendar. Currently there is only one event in the month of April 1999.

Click "Next Month" to view the next month.
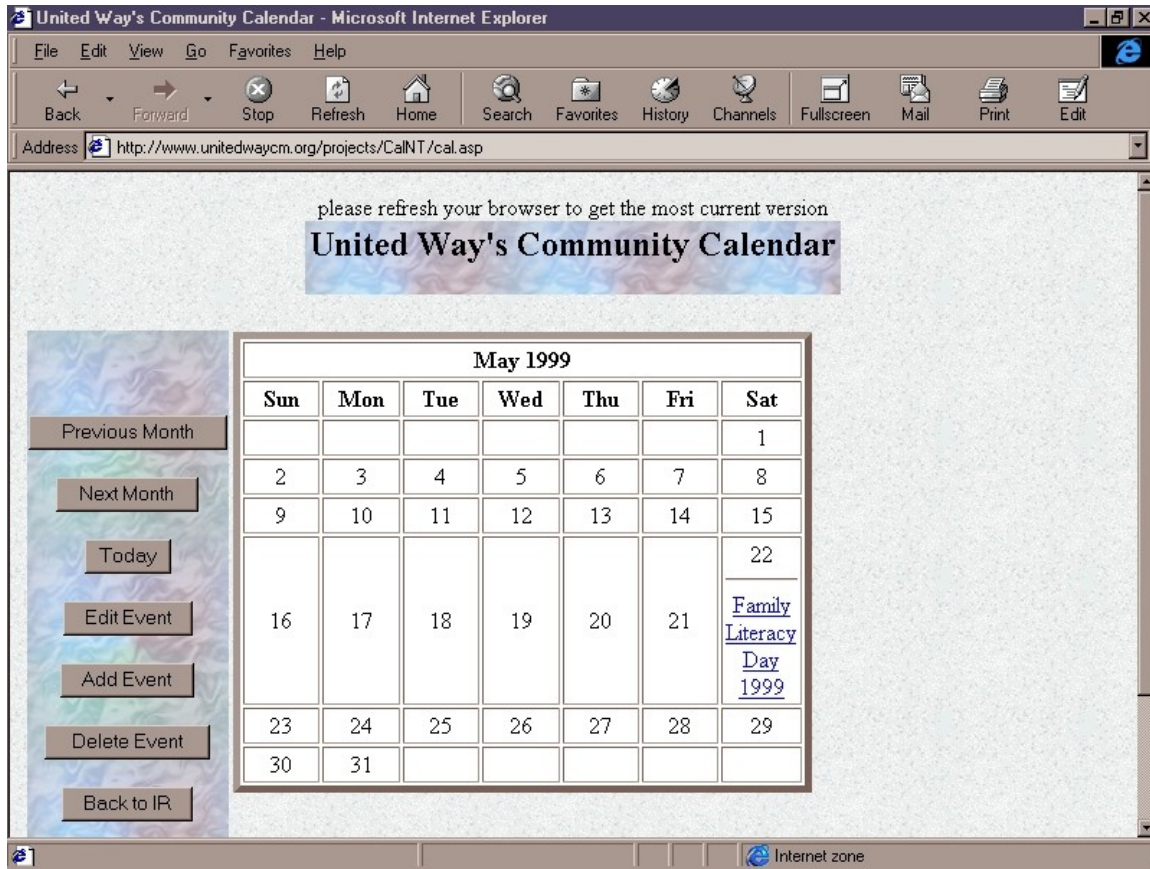
Once clicked on Next month, the calendar will display upcoming events for the next month respectively. So far only one event have been scheduled for the month of May. The calendar will allow the community to view scheduled events years away from now.

Now click "Add Event" to add a new event to a specified date on the calendar.
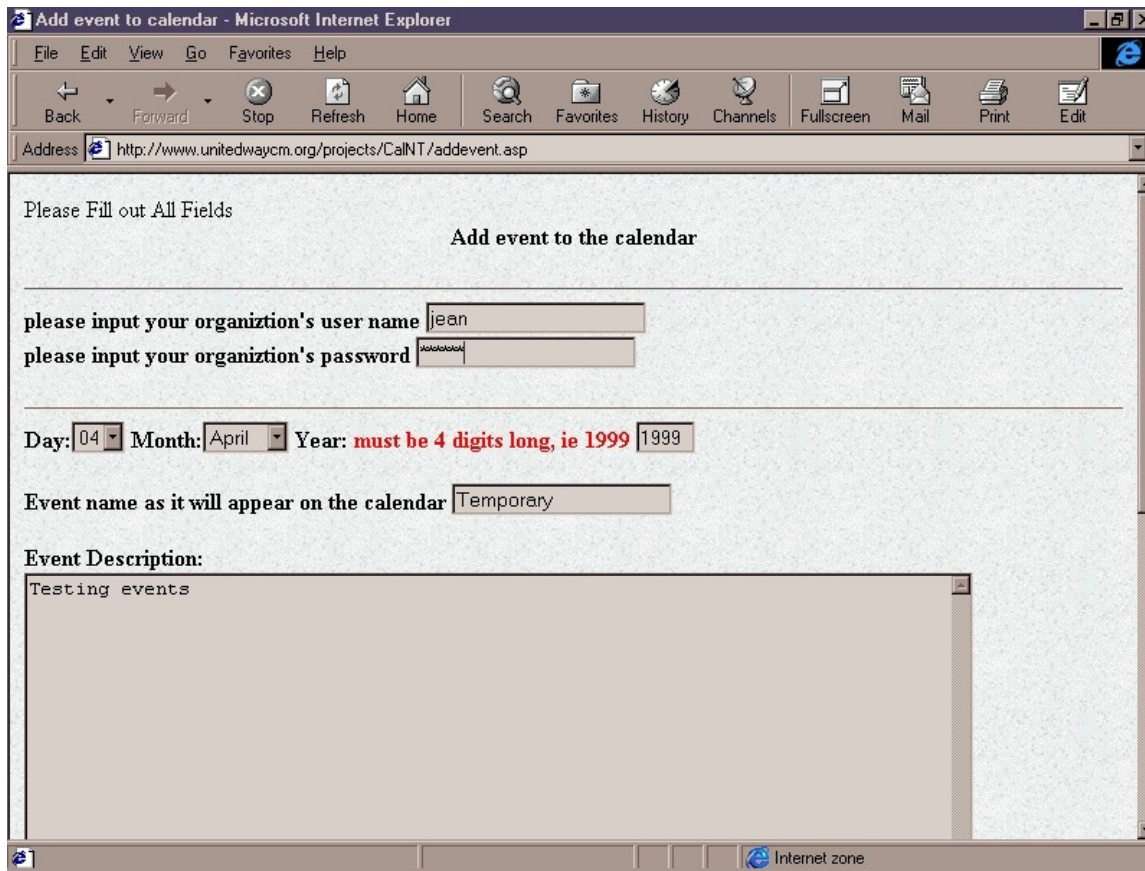
Once again, the proper organization username and password will be requested. The day will have to be selected. This calendar has the capability to predict leap years, so months like February may have 29 days instead of 28 in some years. The year will have to remain in 4 digits to maintain year 2000 compliance.

As appear so, the event name entered now is "Temporary". And the event description can be any such text you wish to enter.
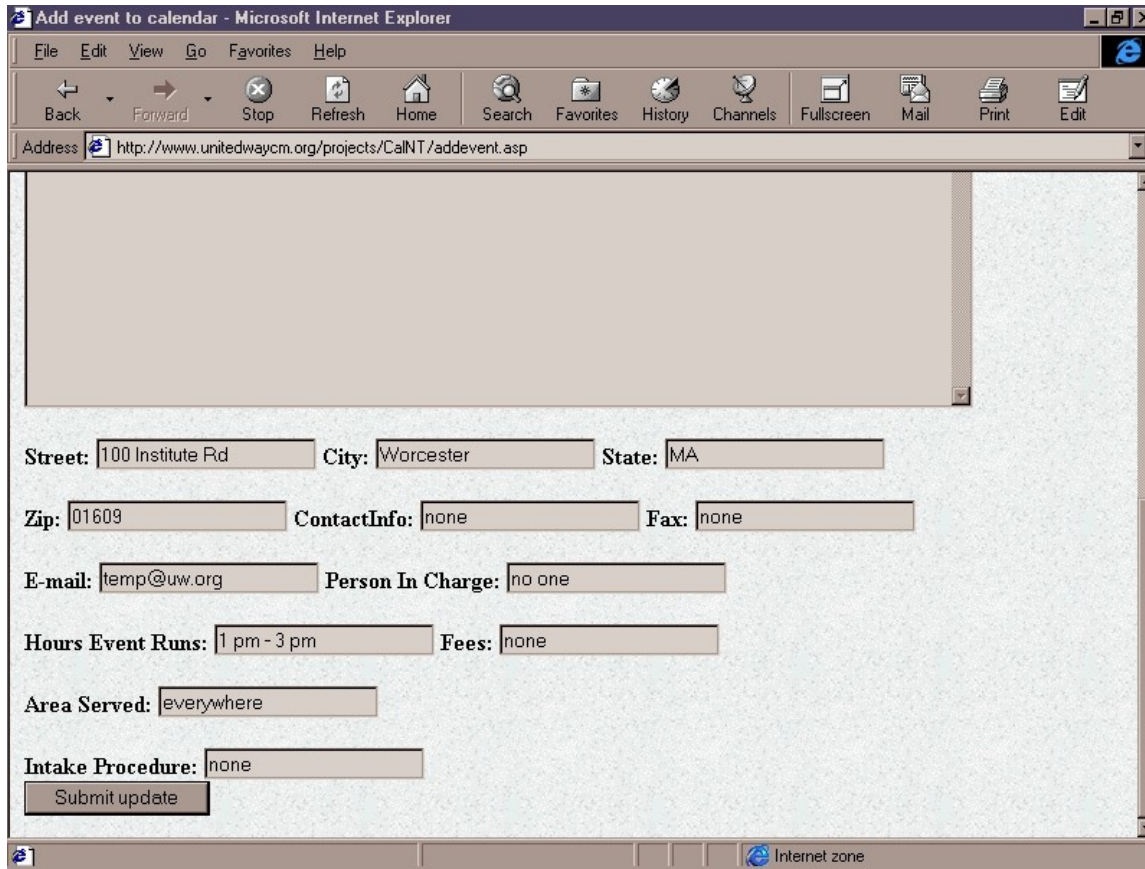
Scrolling down, you will also have to enter the following fields. So far this is required in the prototype. When ready, just click "Submit update" to create a new event.
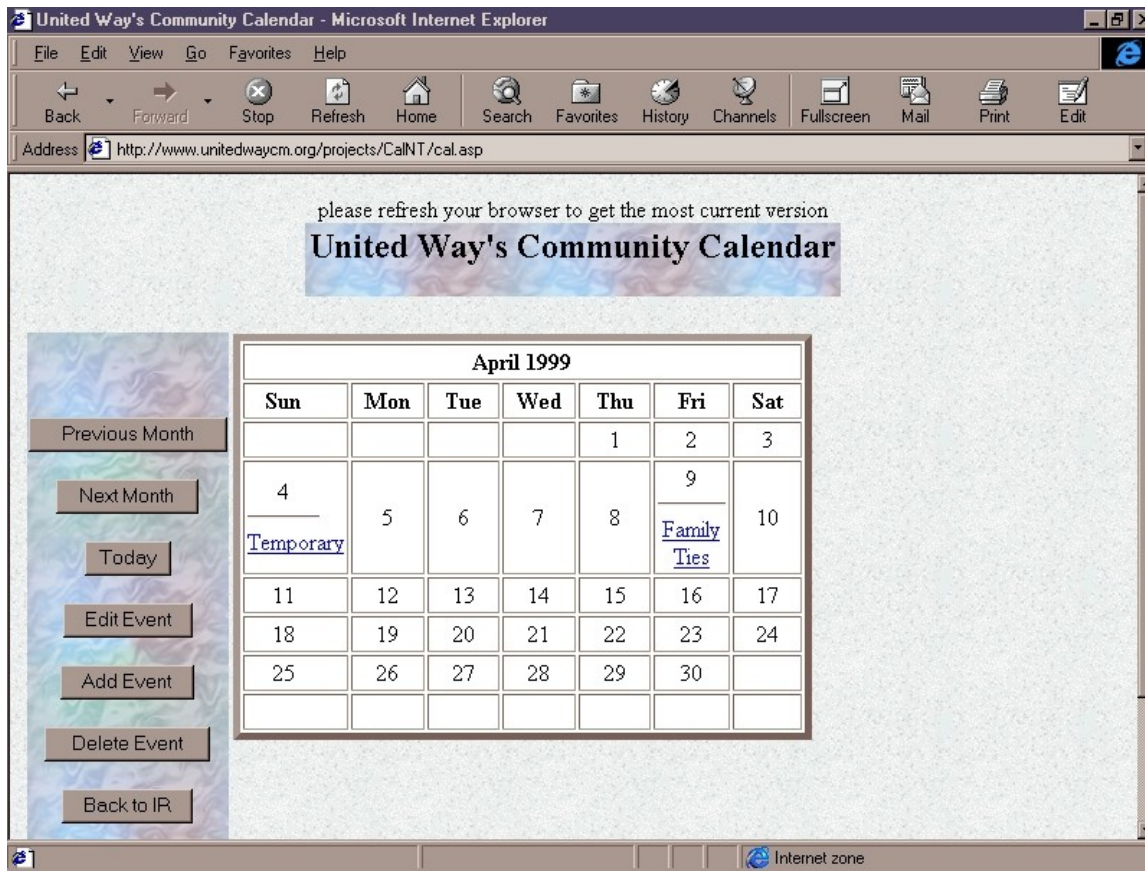
When returned to the month, We will see that the month of April now has 2 events. One called "Temporary" as in the name that we specified for the creation of this event in the previous step.

Now click on "Edit Event" to modify any event that was created under that organization.
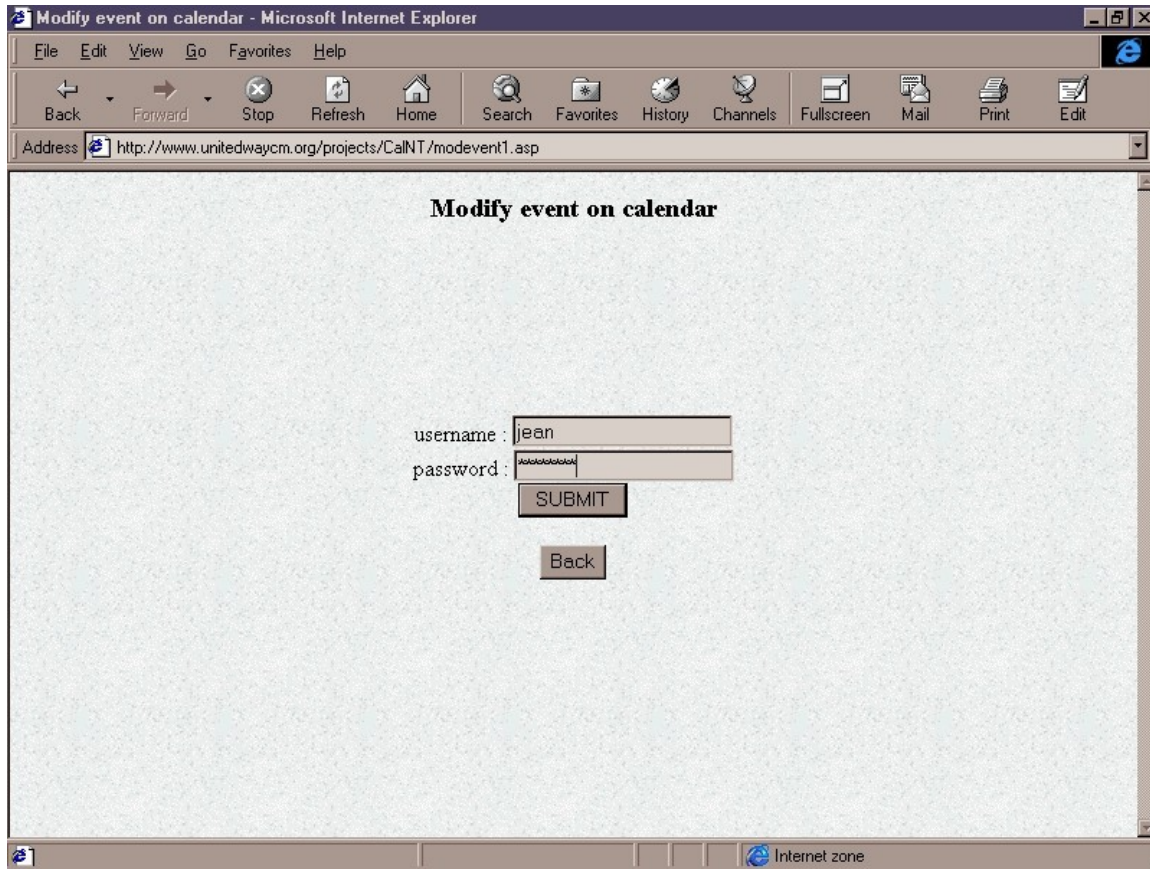
The modification of the records will require a password. Since the security will permit others from randomly modifying the organization's calendar events.
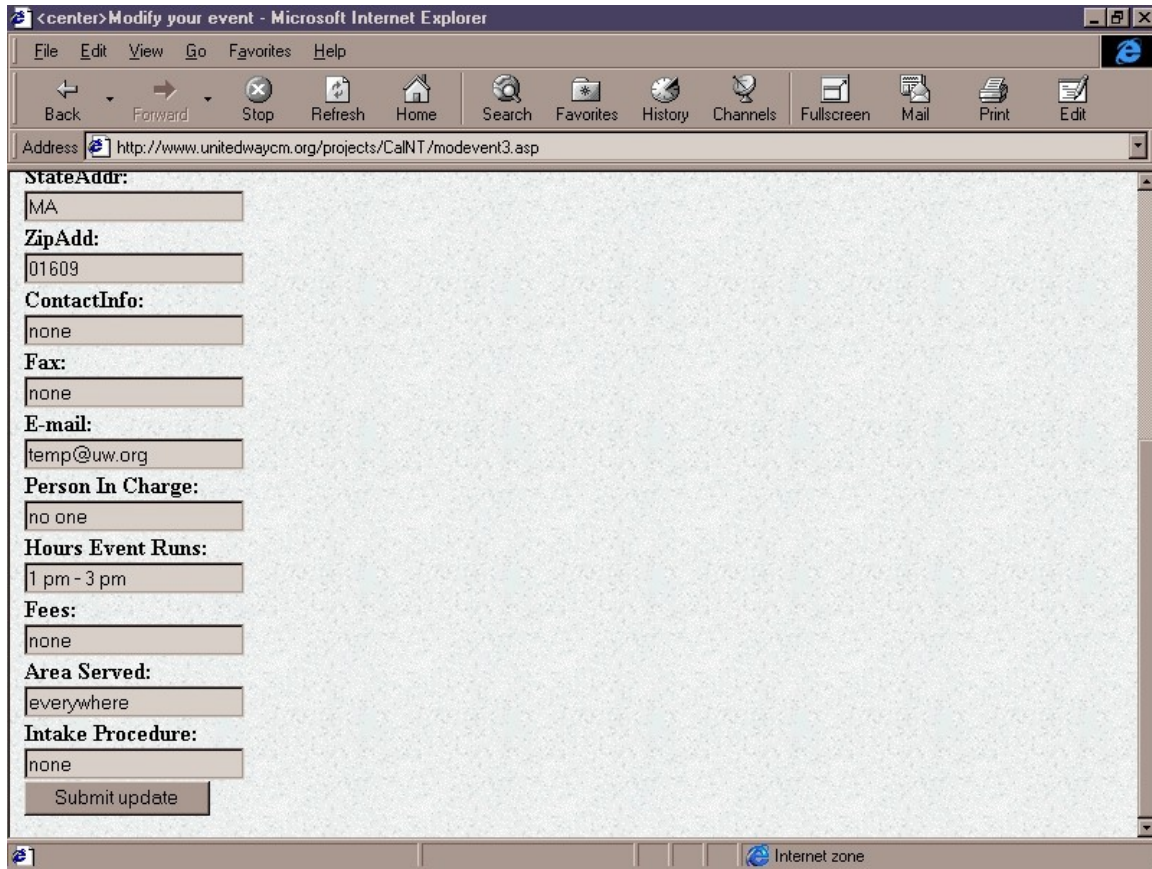
Click "Submit" to proceed.
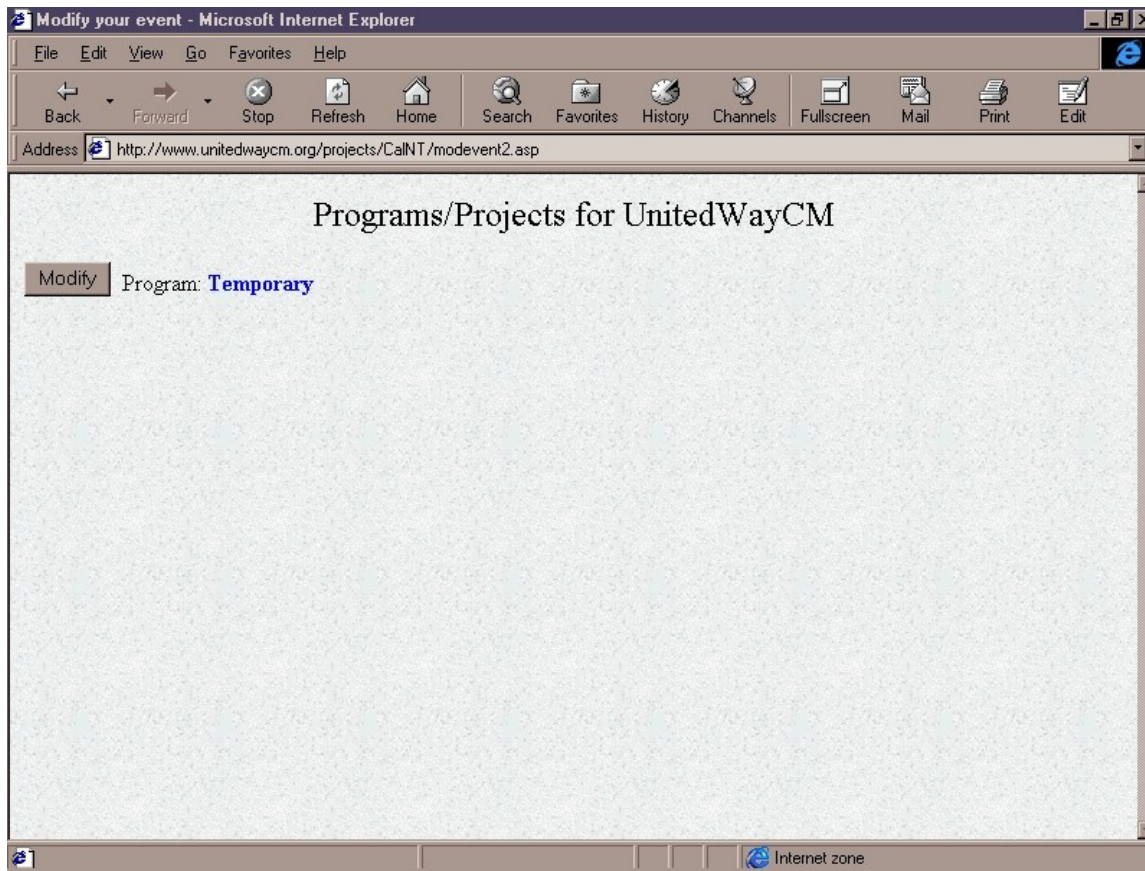
Like the previous editing of the database records, this will reveal a list of events under that organization's name. Since "Temporary" is the only event listed for United Way of Central Massachusetts right now, click on "Modify" to change the event information.
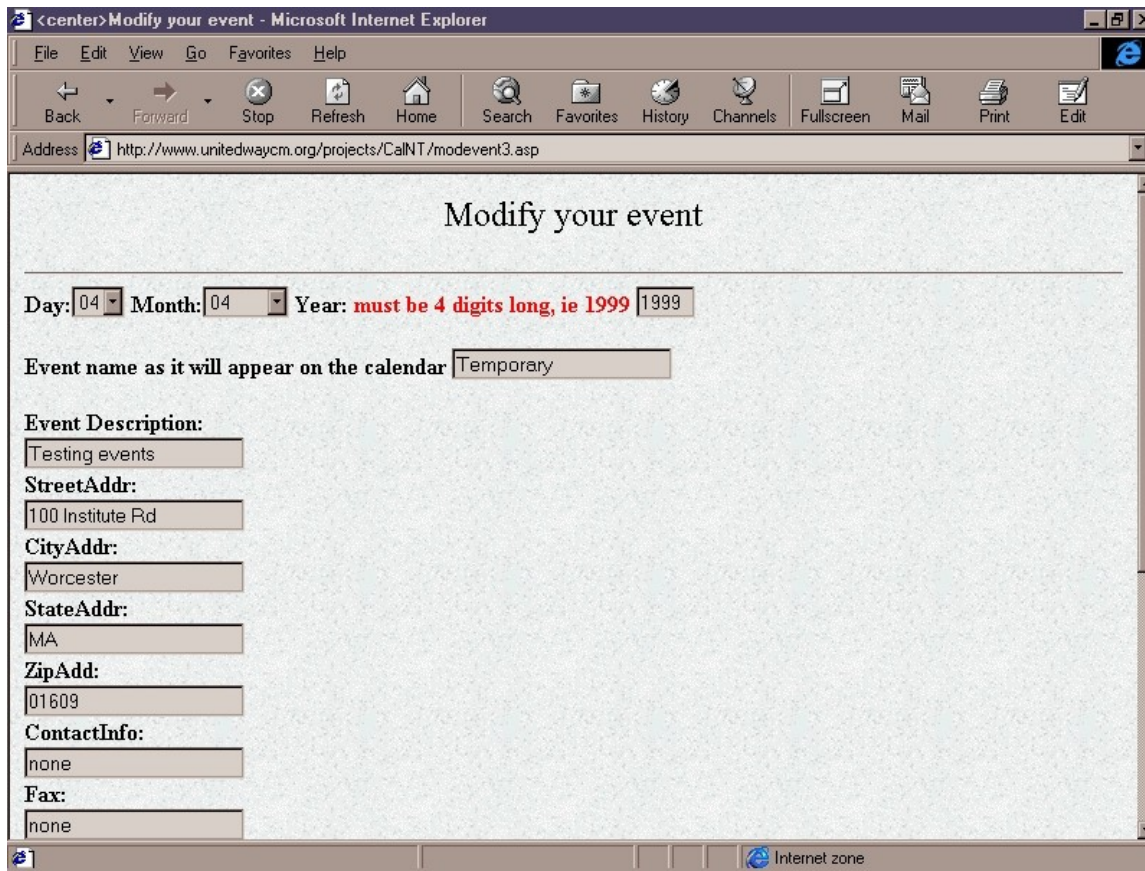
From here, one can change any of the information, including the program name!

Scroll down to the bottom, and the user will be able to submit the modified information.
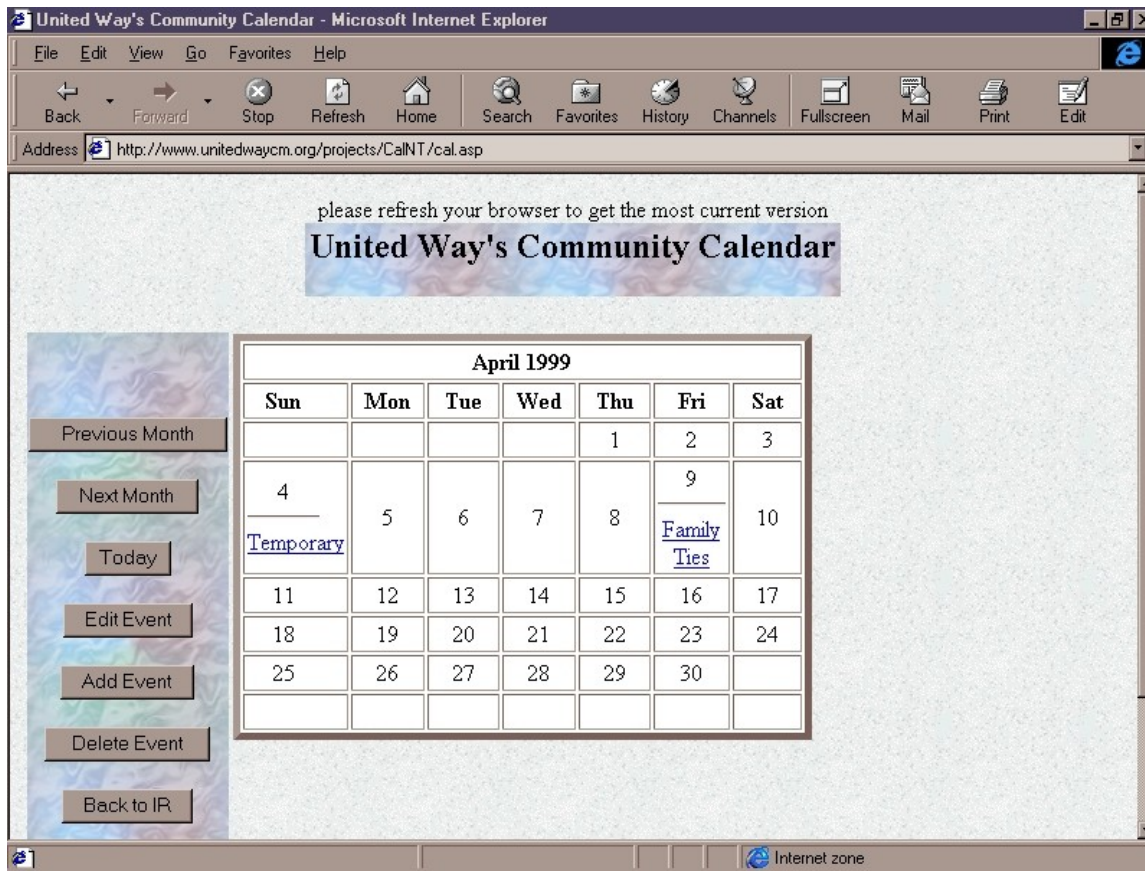
Returning to the main calendar, one could click on "Temporary" to see the information. Hitting "Refresh" on the browser will guarantee a more recent set of data to be displayed.