



An Interactive Qualifying Project  
Submitted to the faculty of

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the  
Degree of Bachelor of Science

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Date: December 14, 2012

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<http://sites.google.com/site/ve12pedia/>

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# Abstract

For the past twenty-five years the Venice Project Center has been collecting data pertaining to Venetian culture and heritage. In an effort to distribute this work and to create a usable resource on Venice for English speakers, Worcester Polytechnic Institute launched a wiki-style website known as Venipedia.org in 2007. Venipedia sought to fill a gap in the lack of specific statistical information on the individual objects and artifacts in Venice by creating a website that would allow users worldwide to collaborate to expand the website and create a comprehensive database on “every brick and stone” within Venice. In doing so the website would aid in preserving the heritage of Venice, essentially creating a single expansive and comprehensive source for English speakers to access everything in Venice. As recently as 2011, Venipedia reached over 4,500 pages on different objects and artifacts in Venice. Unfortunately, Venipedia became plagued by spam and inconsistencies because of its open allowance of contributors, many of whom did not follow strict page templates. This project created an entirely new Venipedia by moving the old website to a different domain, transferring only exemplary pages back to the reborn Venipedia.org, while coordinating the addition of new data from this year’s projects and developing a sustainable plan for the future growth and development of the site.

# Executive Summary

For decades, Venice, Italy has been a city studied and visited by people from all over the world. This unique city is composed of numerous islands and is navigated by canals. The city is renowned for its architectural beauty and cultural heritage. Although the city attracts over 17 million tourists per year, few websites contain a complete database of the artifacts and buildings of Venice. For almost twenty-five years, students from Worcester Polytechnic Institute have been working in collaboration with the Venice Project Center along with various Venetian sponsors to complete projects relating to data collection in Venice. One continuous project has involved the creation of an online database with all project center data available for use by the English-speaking public.

In this technological age, almost any reference work can be found online. A popular genre is an encyclopedia, or a reference work on all areas of knowledge, that anyone can use because of its simple and straightforward writing style. Encyclopedias have existed for almost two-thousand years. The first noteworthy encyclopedia was called *Encyclopédie, or a Systematic Dictionary of the Sciences, Arts, and Crafts*, which was published between 1751 and 1772 by Denis Diderot, a French philosopher. Today, over 80% of the United States and 30% of the world population uses internet (“Internet users...” 2012). As part of this availability many reference works have been made available online. An important example of an online encyclopedia is Wikipedia (Figure 1).

Established in 2001, Wikipedia currently contains over 28,188,214 pages in 285 different languages. One significant aspect of the site is that it provides a range of information accessible to anyone around the world. The site follows a “wiki” structure, which permits user collaboration by allowing people to edit and create pages. Furthermore, the ability to incorporate user contributions allows the site to be relatively self-sustaining because users work together to constantly update the site.



Figure 1. Wikipedia logo.



Figure 2. Photograph of a bookshelf at the Venice Project Center emphasizing the number of projects completed in the past 24 years.

Wikipedia incorporates various features to create comprehensive pages. The search bar is a crucial component, which allows easy access to articles on any topic. Within pages themselves, table of contents, information, and navigation boxes all help to construct a cohesive article. The table of contents box gives users an overview of the article and allows users to skip to any section. The information (info) box provides interesting facts about the topic. Finally, the navigation box provides a list of links to relevant articles within the site. Although Wikipedia covers a range of topics, it is not designed to provide breadth and depth on a specified topic.

Founded by Fabio Carrera in 1988, the Venice project center has hosted over 162 projects (Figure 2), which have all collected quantitative data on different aspects of Venice. In 2007, a team of Worcester Polytechnic Institute students in collaboration with

the Venice Project Center proposed utilizing a site similar to Wikipedia to provide a solution for storing the data collected from past projects. The students created “Venipedia.org,” a wiki-style website to make all of the results from past projects available to English speakers around the world. Although the site has continued to develop since it was founded, as of August 2012, Venipedia needed updating and maintenance in order to provide a fully-functional and complete online resource. The goal of this project was to clean-up Venipedia by establishing a newly-improved installation. To accomplish this transformation, the following four objectives needed to be completed:

- 1) Evaluate and prove the validity of current Venipedia pages
- 2) Ensure new pages abide by standards of consistent organization through the creation of page templates
- 3) Provide a method of monitoring page editing by implementing user feedback
- 4) Experiment with making information immediately available through mobile applications

Upon evaluating pre-existing pages, we found that Venipedia contained numerous irrelevant or outdated articles. To further understand the pages on the site, the pages were broken down into three types, aggregate, typical and individual. Aggregate pages summarized a general topic such as “Wellheads,” whereas typical pages provided key insights into the specific topic by focusing on the anatomy of the given subject such as “Wellhead.” Finally, individual pages were produced from raw data using a system called City Knowledge which automatically generated Venipedia pages.

By defining these page types, we were able to review thousands of Venipedia pages and determine what qualified as good page content and structure. Good content consisted of accurate information specific to Venice written in direct language. Good structure for all pages, needed to have a contents box, headings and subheadings, an info box, a navigation box, images, and maps. Required headings were: See Also, References, Bibliography, and External Links. Using these standards we evaluated a sample of 1,609 pages by using the spreadsheet format shown below in Figure 3.

Patere	Description	Contents Box	InfoBox	References	See Also	Info-graphics	External Media	Page Content	Translate	Total	Page Loads
Patere: Burano 141	1		0	1	1	1	1	1	0	6	28

**Figure 3. One row of the spreadsheet used to evaluate pages in bulk. This was filled out for an individual page on patere, a type of public art. The total score is 6, indicating this page needed attention.**

Scores were determined by assigning a “1” for parts needing attention. Pages with the highest scores required the most revision. Once pages were corrected, we redesigned the main page. The old and new homepages can be seen below in Figures 4 and 5.



Figure 4. Former Venipedia main page.



Figure 5. Current Venipedia main page.

The new main page provides new navigation portals, a section describing the purpose of Venipedia, a randomized featured article, “Did you know...” facts, Google Analytics, and a “New to Wiki?” section (Figure 5). We expanded the portals into two-word topics to ensure that future pages would be guaranteed appropriate categorization. “What is Venipedia?” was updated to give users an initial introduction into why Venipedia exists and refers readers to more information on the “About” page. Both featured articles and did you know facts were both installed to provide a glance at the content Venipedia offers. Google Analytics and other site statistics were added to showcase the success of Venipedia. Finally, we created the “New to Wiki?” section to redirect readers to the updated help section and the new article wizard tool.

To make Venipedia self-sustainable, we added several features beginning with the article feedback tool, (Figure 6) which appears at the bottom of every page so that anyone who visits the site can provide an opinion on any articles.

Figure 7. Graphic of the article feedback tool.

To prevent spam, a problem in past iterations of Venipedia we installed new management features. First, in order to edit or contribute, one must



Figure 6. reCAPTCHA used to prevent spam.

become a registered user with Venipedia which involves entering a username, password, and valid email address, in addition to passing the “Recaptcha” test. The “Recaptcha” shown in Figure 7 prevents spammers from automatically creating spam pages. The tool will also appear when a user wishes to save page edits.

We developed an article wizard to aid those wishing to contribute to Venipedia (Figure 8). The wizard contains six steps to give the user a comprehensible guide into the important features of pages including a valid subject, notable topic, credible sources and original content. The final step allows the user to choose what type of article he/she intends to create and the tool automatically generates a template and instructions for how to create the page. We hope that these management tools will help ensure quality content and encourage contributors. As an additional measure to spark interest in Venipedia, we have begun the baseline for a Venipedia smartphone application.

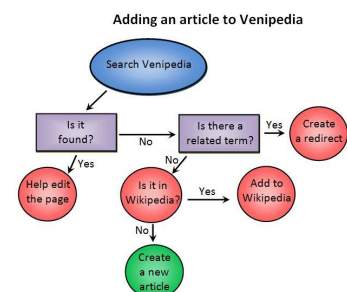


Figure 8. Diagram in the article wizard to ensure users are adding appropriate content to Venipedia.

The mobile application will make Venipedia data available from within the streets of



Figure 9. Graphic of the PreserVenice mobile application.

Venice. In its current state, the application can be viewed at PreserVenice.org. As seen in Figure 9, the app generates a location map with icons representing nearby objects. These objects are added as “layars” on the application. The current layars available are coats of arms, symbols, portals, fountains, fragments, street altars, wellheads, patera, and sculptures. By clicking an icon, a box will appear with a picture of the object and a description similar to the infoboxes used in Venipedia for the individual page of the given object. As contributors

generate more datasets through City Knowledge, more “layars”

will be added to the application such as bridges, canals, streets, monuments, palaces and many more. We feel the application will greatly improve Venipedia's popularity. With WPI inventories in various topics such as coats of arms, confraternity symbols, canals, bridges, wellheads and many more, the site will contain a total of over 10,000 pages and will be continuously growing as more datasets are made available online. We encourage readers of this report to visit [Venipedia.org](http://Venipedia.org) and experience what the site has to offer or become a contributor if they are interested in Venice.

# Acknowledgements

We would like to thank the following people who helped us in our work and without whom our project would not have been successful:

*Alberto Gallo* – We would like to thank Alberto and his staff for their accommodations and allowing us to conduct meetings in their office space. Their generosity was exemplary, particularly toward the end of the term when we conducted daily meetings in the VPC.

*Anthony Kraus* – We thank Anthony for sharing with us his interest in our project and we thank him and the UNESCO staff both for hosting our team in their accommodating presentation room.

*Kyle Miller* – We extend our most sincere gratitude to Kyle, who single-handedly installed the new version of Venipedia. We are grateful for the many hours that Kyle spent, both in Venice and abroad, to help make our vision of Venipedia become a reality. We could not have succeeded without Kyle's help.

*Ben Lichtner* – We would like to thank Ben for his work with the City Knowledge console, without which we would have been unable to populate Venipedia's Individual pages. Ben saved us many hours of work and allowed us to focus our efforts on other aspects of Venipedia, while he executed the finer details of data-driven pages.

*Previous Venice IQP Students* – It should go without saying that many students have contributed to this effort through the years, and we are but the most recent. To all of the WPI students who laid the groundwork for our project's success, we appreciate your work very much, and we are proud to contribute to the Venice Project Center's legacy.

*Dr. John Zeugner* – We are most grateful for Professor Zeugner's help and guidance in the completion of our project. Professor Zeugner was always available to provide us with guidance for this report, as well as to offer his wisdom in the execution of our project. Without Professor Zeugner's insight and guidance, we would have been lost.

*Dr. Fabio Carrera* – Finally, we especially owe our thanks to Professor Carrera, without whom our project and time in Venice would not have been remotely possible. Professor Carrera's guidance and knowledge was invaluable in shaping Venipedia into the completed project we produced. We spent countless hours and caused Professor Carrera to miss many a meal during our almost daily meetings to discuss the organization and implementation of the new Venipedia site. Once again, we are deeply thankful of Professor Carrera's role in our education and are grateful for the opportunity he provided us.



# Authorship

Each team member contributed equally to the writing and revising of this report.

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# 1.0 Repositories of Knowledge

Various systems exist for relaying data and information. Since the dawn of humanity, the majority of modern history has been passed through the ages by literature. Whether through journals, books, poems, textbooks, or other various formats, reading enhances one's knowledge of the world he or she lives in. One such example of an educational genre of literature is the encyclopedia.

## 1.1 Encyclopedias

Encyclopedias have existed around the world as references for all areas of human knowledge for over two millennia. "Encyclopedia" is derived from the Greek words *enkyklios paideia*, which directly translates to "circle of learning" (Beuttler 2003). In the 18th century, Denis Diderot published *Encyclopédie* which set the standard for modern day equivalents. Typical encyclopedias provide general and accessible information on as many topics as possible to accommodate the everyday person in the language of their choice. Additionally, much of today's literature is published online (Figure 10), which has made the Internet a repository of resources that are available worldwide.



Figure 10. Graphic illustrating that today's literature has become available online ("Literature online" 2010)

### 1.1.1 Origins of Encyclopedias

One of the first reference works in history (called the *Historia Naturalis*, or the Natural History) was published between 77 and 79 AD by a Roman man known as Pliny the Elder (Pliny the Elder 2012). Although readers of the first century did not recognize it as such, Pliny's 37-volume text is often regarded as the first western encyclopedia in that it demonstrated the Greek concept of *enkyklios paideia* or complete knowledge (Doody 2010). The *Natural History* covers a vast range of topics that pertain to the time period including: science and technology, magic, earth, and stone (Lendering, n.d.). Pliny the Elder's rendition of a reference work, with informative facts about various areas of knowledge, paved the way for future encyclopedias as secondary and tertiary resources.

The French philosopher Denis Diderot is perhaps one of the greatest contributors to Enlightenment literature and the modern-day encyclopedia. Diderot was originally asked to co-edit the French translation of Ephraim Chamber's *Cyclopaedia*, or Universal Dictionary of the Arts and Sciences. The project developed into his and several other contributors' attempt to summarize the current discoveries and facts regarding the sciences and arts in a

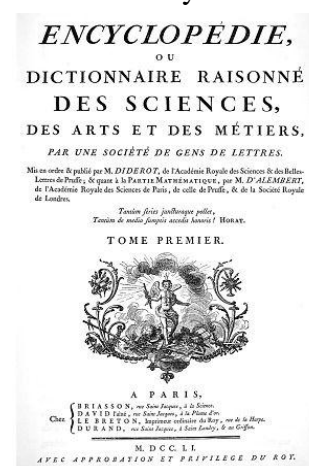


Figure 11. Denis Diderot's *Encyclopédie*.

total of seventeen volumes of articles and eleven volumes of illustrations known as *Encyclopédie, or a Systematic Dictionary of the Sciences, Arts, and Crafts* (Liukkonen 2008) (Figure 11 above). Published between 1751 and 1772, Diderot's work revolutionized encyclopedias because it broke down the mechanical arts, jobs and crafts of the time, and the natural sciences by using memory, reason, and imagination, which Diderot and his contributors anticipated would help make the text easy to read and understand. One example intended to enhance the readers' educational experience, but which laid the structural groundwork for future texts- especially modern encyclopedias- was the use of references to point readers to other sections of the *Encyclopédie* that were relevant to the subject matter (Denis Diderot - Biography 2012).

### 1.1.2 Purpose of Encyclopedias

Due to the unique structure and style that encyclopedias use, encyclopedias are considered their own genre of literature. Encyclopedias consist of simply-written concise articles absent of personal opinion, because encyclopedias present purely educational information. In a sense, encyclopedias could be categorized among the most boring readings because most people are unlikely to sit down and read an encyclopedia cover to cover. Instead, they have come to be used as a resource used in piecemeal fashion, referenced from time to time to satisfy a question or bridge a gap in the reader's understanding of a particular subject.

An encyclopedia should be a complete and objective repository of knowledge, limited to the basic facts about subjects with little room for interpretation. Today, this idea of a "storehouse of facts" is being implemented online rather than through printed books. With almost 80% of the United States and about 30% of the worldwide population using internet (shown in figure 12), most encyclopedias have been converted to searchable online text formats that make data easy to find (Beuttler 2003). One notable example of an online encyclopedia is Wikipedia.

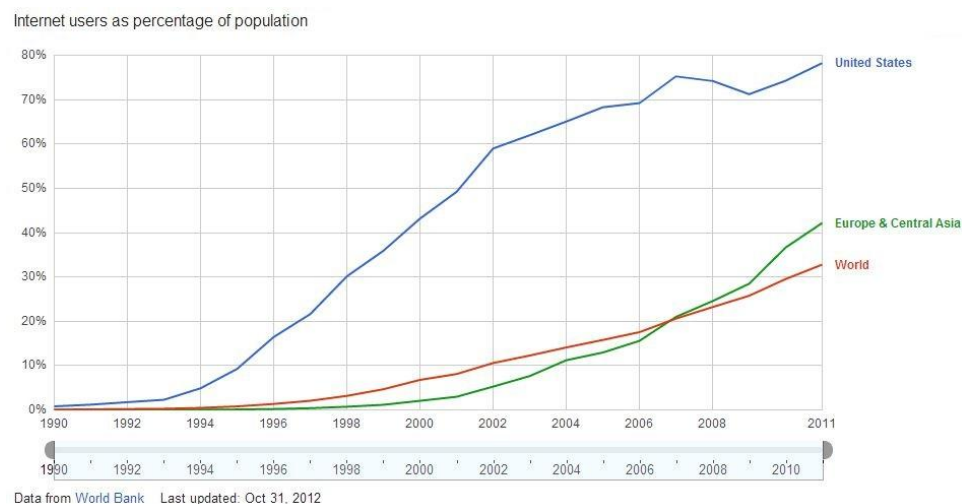


Figure 12. Internet users by percentage of population from 1990 to present ("Internet users..." 2012)..

## 2.0 Characteristics of Wikipedia

Founded in 2001, Wikipedia (Figure 13) is a successful implementation of an online encyclopedia and is responsible for popularizing the wiki structure, which allows for internet collaboration and site moderation through a website's users (Desmarais 2005). Wikipedia is a free resource that provides immediate access to many areas of knowledge in an intuitive structure. Containing over 28,188,214 pages in 285 different languages, Wikipedia is a resource for information about almost any topic in

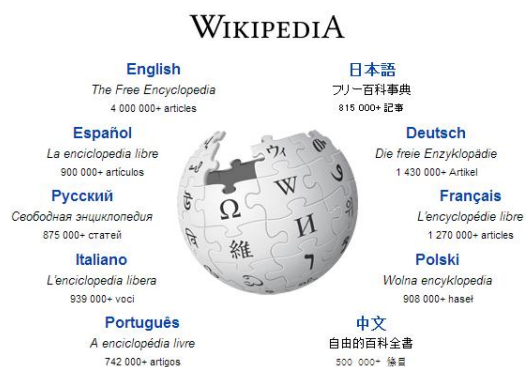


Figure 13. Wikipedia home page with links to wikis in different languages.

the world (Wikipedia.org). The modern interpretation of Diderot's cross-referencing alludes to the "hyperlink," which is used repeatedly in Wikipedia to connect pages of related topics. The site follows a unique "wiki-style" structure, which helps to create an effortless user experience by supplying each page with clear headings, highlighted facts, and easy navigation to other wiki pages. More information on Wikipedia navigation can be found in Section 2.2

## 2.1 Wikis

The term "wiki," meaning quick in Hawaiian, was first used in relation to website pages by Ward Cunningham during the 1990's (*It's a wiki, wiki world*. McFedries 2006). A wiki website gives users adding, editing, and deleting privileges, which allows users to collaborate remotely via the internet (McFedries 2006). Such a format seeks to immerse visitors in websites by allowing the visitors to contribute to the sites. As a result, the wiki websites rely heavily on internet crowd sourcing, which means the sites depend on the public user-base to maintain and update the site.

Websites that properly utilize crowd sourcing manage to develop and adapt more quickly through the increased amount of work that can be accomplished by having many users editing and moderating a website simultaneously. In this way, Wikipedia is mostly self updating and requires few paid administrators.

## 2.2 Structure of Wikipedia

Wikipedia uses Hypertext Preprocessor (PHP) coding along with its wiki format to allow simplicity in the coding of the site. As aforementioned, the wiki format is crucial in that it allows contributors to collaborate via the internet, causing the users of Wikipedia to drive the growth of the site. However, in the past, this growth has led to vandals and practical jokers who took advantage of the free access to edit and created corrupt pages with false information (Chesney 2006). Despite the risk of reading inaccurate information, the execution of the site is so effective that there are



currently over four million English articles, many of which include references and sources to support their validity (wikipedia.org).

Internet encyclopedias like Wikipedia are popular for the ease and speed with which they can be accessed in comparison to printed encyclopedias. The search engine (Figure 14) along with table of contents box within each page allows users to jump from topic to topic seamlessly through hyperlinks and embedded page structures; whereas, printed encyclopedias may only offer suggestions of related topics. There are three specific page structures that help Wikipedia maintain an easily comprehensible and navigable format. These structures are the table of contents, information, and navigation box.

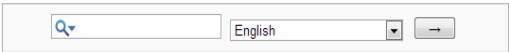


Figure 14. The search bar on the main page of Wikipedia, which allows language choice.

2.2.1 Contents Boxes

Contents [hide]

1 Usage

2 Parameter list

3 Parameter descriptions

3.1 Setup parameters

3.2 Cells

3.3 Style parameters

3.3.1 Default styles

3.4 Advanced parameters

3.4.1 Microformats

4 Layout of table

5 Examples

5.1 No image

5.2 With image, without groups

5.3 With two images, without groups, multiple lists

5.4 With image, groups, above, below

6 Child navboxes

6.1 Subgroups example

6.2 Multiple show/hides in a single container

7 Relationship with other Navbox templates

8 Technical details

8.1 Intricacies

8.2 Copying to other projects or wikis?

8.3 Known issues

9 See also

Table of contents boxes allow users to quickly navigate pages by clicking website hyperlinks embedded within listed topic headings and subheadings. Figure 15 shows a sample table of contents box taken from Wikipedia. In Figure 15 clicking on a heading or subheading such as “3.1 Setup parameters,” would bring the user to that heading within the page itself.

Website visitors can also obtain a quick understanding of the topics within an article by reviewing the headings listed within table of contents box. In effect, the table of contents is implemented to cut down the time required for a user to extract information from a lengthy web page.

Figure 15. Contents box on Wikipedia page.

2.2.2 Information Boxes

Information boxes include select facts about the topic presented on any given page. These facts seek to provide an overall summary of key points that are elaborated on within the web page itself and also serve as a point of comparison. For example, Figure 16 shows a screenshot of the information box for Venice, Italy taken from the English Wikipedia. The box contains information on the total surface area of Venice as well as the population and population density, which are characteristics not only of Venice, but of all cities, which makes the information box a useful tool for comparing similar topics.

<b>Country</b>	Italy
<b>Region</b>	Veneto
<b>Province</b>	Venice (VE)
<b>Frazioni</b>	Chirignago, Favaro Veneto, Mestre, Marghera, Murano, Burano, Giudecca, Lido, Zelarino
<b>Government</b> <div><span> </span><span>•</span> <b>Mayor</b></div>	Giorgio Orsoni (Democratic Party)
<b>Area</b> <div><span> </span><span>•</span> <b>Total</b></div>	414.57 <span> </span> km <sup>2</sup> (160.07 <span> </span> sq <span> </span> mi)
<b>Elevation</b>	0 <span> </span> m (0 <span> </span> ft)
<b>Population</b> (2009-04-30) <div><span> </span><span>•</span> <b>Total</b></div> <div><span> </span><span>•</span> <b>Density</b></div>	270,660 <div>650/km<sup>2</sup> (1,700/sq<span> </span>mi)</div>
<b>Demonym</b>	Venetians
<b>Time zone</b> <div><span> </span><span>•</span> <b>Summer (DST)</b></div>	CET (UTC+1) <div>CEST (UTC+2)</div>
<b>Postal code</b> <div><b>Dialing code</b></div>	30100 <div>041</div>
<b>Patron saint</b> <div><b>Saint day</b></div>	St. Mark the Evangelist <div>25 April</div>
<b>Website</b>	Official website <a href="#">↗</a>

Figure 16. The infobox taken from the Venice, Italy page on the English Wikipedia.

### 2.2.3 Navigation Boxes

Navigation boxes provide hyperlinks to pages of the same category. The boxes provide a table format in which certain pages related to the topic can be grouped by location or material type etc. As seen in Figure 17, the box is typically used when the related content would contain too many hyperlinks to easily fit into a simple table. One key aspect of navigation boxes is that the pages listed in the box only link to pages within Wikipedia. This makes a navbox a unique feature for jumping through this online encyclopedia.


V • T • E		Works by Denis Diderot	[hide]
Author	<i>The Indiscreet Jewels</i> • <i>Lettre sur les aveugles à l'usage de ceux qui voient</i> • <i>Le Fils naturel</i> • <i>Le père de famille</i> • <i>La Religieuse</i> • <i>Rameau's Nephew</i> • <i>Le rêve de D'Alembert</i> • <i>Jacques the Fatalist</i> • <i>Madame de La Carlière</i> • <i>Supplément au voyage de Bougainville</i> • <i>Ceci n'est pas un conte</i>		
Editor	<i>Encyclopédie</i>		

Figure 17. Navigation box linking to other works by Denis Diderot. Works are sorted by those of which he was the author and those for which he was an editor.

### 3.0 Characteristics of Venipedia

Wikipedia currently provides a page on Venice in both Italian and English. Given that Venice hosts over 22 million tourists per year and receives over twice as many online search results (Google.com), this city has been a topic of many reference works and is potentially one of the most analyzed cities in the world. Unfortunately, primary research about Venice is difficult to access, especially for users who do not speak Italian. To help fill the gap in knowledge between both of the Venice wikis, which only give a broad overview of the city and the many resources which can hardly encompass all the city has to offer, students at Worcester Polytechnic Institute (WPI) in collaboration with the Venice Project Center (VPC), created an online encyclopedia called “Venipedia” to publicize Venetian data gathered by the VPC over that past twenty-four years.

#### 3.1 History of Venipedia

Beginning with the PreserVenice Initiative in 2007, teams of WPI students sought to create an online encyclopedia to not only fill the gap between the English and Italian Wikipedias for Venice, but also provide an electronic resource for all of the data collected by past projects held at the VPC (PreserVenice 2012). The Venice Project Center was founded by Fabio Carrera and WPI in 1988 and has hosted over 162 projects (figure 18), most of which have been collecting observational data on the various aspects of the city. With guidance and supervision from Fabio Carrera, teams of students have been able to collect valuable information on the city of Venice. In 2008, students from the PreserVenice team decided that publishing the information gleaned through past years of work online through a Wikipedia-style webpage would help both catalog the data and provide it as a resource for the rest of the world. To make Venipedia usable, the students uploaded datasets from past projects conducted at the Venice Project Center (Venipedia 2011). In 2010, a team used information graphics to showcase Venipedia’s content and to make data publicly accessible to groups such as 40xVenezia, which was a local effort to preserve Venetian culture (Showcasing Twenty Years of Venice Project Center Results using Interactive Online Infographics 2011). By integrating modern web-hosting applications, undergraduate students populated the website with over four thousand pages sorted into eighty-nine categories. The reasons and rationale behind the creation of Venipedia extend to the various standards which set Venipedia apart from Wikipedia.



**Figure 18. Shelves containing every project completed at the VPC.**

#### 3.2 Rationale for Venipedia

If one were to search “Venice” on Google, a top search result will be the English or Italian article for Venice in Wikipedia. Within both articles, one will find that the pages contain primarily general information. Although the pages have quality content, they can only reach a certain depth about a topic since Wikipedia mainly strives to make these articles an “overview” of the city. Past years have debated whether

Wikipedia could have been a potential place to publish all of the Venice project center data; however, the issue with this idea was that the information would be too hard to maintain given the number of projects completed at the Venice project center (VPC).

### 3.1.1 Selective focus

Wikipedia entails over 28 million pages in 285 different languages. With such a vast collection of articles, it is understandable that Wikipedia mainly focuses on general topics. Looking at the table of contents for Venice page in the English Wikipedia, it is evident that the article provides a summary of key topics in Venice but cannot analyze each heading in depth. Venipedia was created to provide a resource for specified information only pertaining to Venice. By having this separate website rather than pages in Wikipedia, Venipedia would allow for a greater breadth and more depth for topics in Venice.

### 3.1.2 Greater breadth

With data from over 160 different projects, Venipedia is capable of covering a greater breadth than Wikipedia. For example, the bridges category on the English Wikipedia only contains 10 bridges, likewise, the Italian Wikipedia only contains 15 bridges; however, Venipedia contains all 433 bridges existing in Venice. Figure 19 below shows the two categories side-by-side. Clearly, adding 433 bridge pages to Wikipedia would not be an easy task and would not be easy to maintain either. Additionally, Venipedia has many other inventories which Wikipedia lacks such as numerous pages for, various topics such as coats of arms, patere, monuments, statues, canals, bridges, docks and many more. Past years brought Venipedia up to a total of over 4,000 pages all pertaining specifically to Venice. However, Venipedia still has room to grow because as of August 2012, many datasets were still missing from the site.

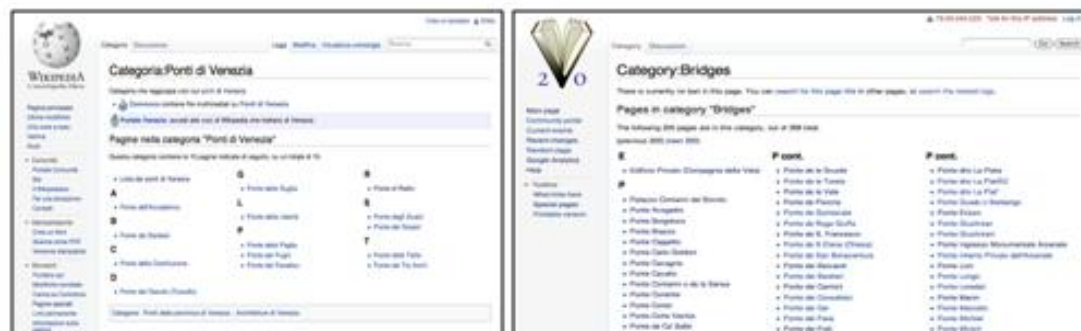


Figure 19. Bridges category for Italian Wikipedia (left) vs. Venipedia (right). Clear differences in breadth; it.wikipedia only offers 15 bridge pages while Venipedia has all 433 bridges.

### 3.1.3 More depth

Although Venipedia clearly has a greater breadth than Wikipedia, the pages within Venipedia also provide more depth for each topic. The content within each page contains more technical or quantitative data that has been taken by past students at the

VPC. A good example is comparing the differences between the pages on a bridge in Venice. The pages for the Accademia Bridge or Ponte dell'Accademia are compared below in Figures 20 and 21 for the English Wikipedia and Venipedia.



Figure 20. A screenshot from en.Wikipedia showing the Accademia Bridge article.

The English article is too short to even have a table of contents, infobox, or even navigation box to the other bridges in Venice. Looking at just the table of contents and infobox from the article on this same bridge in Venipedia, the differences in depth are evident. Just from the table of contents it can be seen that Venipedia provides the



Figure 21. The Contents (left) and infobox (right) from Venipedia's Accademia Bridge article.

History, Architecture, Traffic Data and Map for the bridge. Especially interesting is the traffic data section which will not be found anywhere else on the internet. The data was taken by WPI students who observed the pedestrian traffic across the bridge. Additionally, the infobox provides a picture with quantitative facts such as length, height, year built, etc. From this comparison, it is clear that Venipedia not only provides a greater breadth of topics but also has more depth for each topic in Venice. Based on its selective focus,

greater breadth, and more depth, Venipedia is a justifiable and important creation for making the data taken by the Venice project center available online for both those physically present in Venice and those who are relying on the web for information.

The site allows users to quickly access information about the city and it provides English-speaking foreigners access to Venetian culture. Venipedia has made significant strides in providing a platform for past and future work to be made available in a consistent and convenient format. Unfortunately, as of 2011 Venipedia was not yet a fully-functional or complete online resource. Although the site was a central hub for the majority of VPC work from the past twenty-four years, Venipedia was unwieldy to navigate and was also afflicted by spam (Figure 22), due to the wiki-nature of the site which allowed anyone to edit and update the information within the pages.

## Venipedia talk:Community portal

washing cloth for gold and <http://www.monclerkupowac.com/moncler-men-s-kurtki.html> silver diamond jewelry is one for silver.2.) for <http://www.monclerkupowac.com/moncler-puchowe.html> around in an amazing broad just about any slightly <http://www.monclerkupowac.com/moncler-sprzedaz.html> range of design and types, much more "in-depth" <http://www.monclerkupowac.com/moncler-men-s-vests.html> gaining terrific reverence washing you may nicely <http://www.monclerkupowac.com/moncler-sklep.html> in its 4,000 twelve weeks

**Figure 22.** An example of one of the previous spam pages on Venipedia. Clearly this post has nothing to do with Venipedia and the posting of irrelevant pages should be prohibited in the future.

As a response, the Venipedia administrators limited editing privileges to approved contributors, and created a test site to develop a new iteration of Venipedia to be released upon completion. The old database was redirected to [future.venipedia.org](http://future.venipedia.org) and a clean installation was created at [venipedia.org](http://venipedia.org). The current administrators are the founder of the site, Fabio Carrera in collaboration with Kyle Miller and Ben Litchner, both former WPI students. They work to keep the site updated when new versions of wiki are available and also moderate the use of the site to ensure that no major changes go unnoticed.

The goal of this project was to produce a fully functional Venipedia site for English-speaking users. To improve the site, our team worked to evaluate the current Venipedia pages, create templates for common types of pages, provide a monitoring method for users, and experiment with making information immediately available and editable through a mobile application. By piecing together all of the information gleaned through previous IQPs and research on Venice, this project sought to create a brand new, user-friendly website and Smartphone application that would provide the Venice Project Center with an extensive and accurate database of Venetian culture, as well as geography of the city, such that the database would be as complete as possible for its release on the 25th anniversary of the Venice Project Center. To achieve these goals, we needed to fulfill the following objectives:

- 1) Evaluate and prove the validity of current Venipedia pages
- 2) Ensure new pages abide by standards of consistent organization through the creation of page templates
- 3) Provide a method of monitoring page editing by implementing user feedback
- 4) Experiment with making information immediately available through mobile applications



## **4.0 The New Venipedia (2012)**

Our overall goal was to reconstruct Venipedia for its release during the 25<sup>th</sup> anniversary of the Venice Project Center (VPC). Before starting this project, Venipedia was home to over 4000 pages representing the data collected from 24 years of VPC projects.

In recent years, teams of WPI students organized the new pages they added upon completion of their projects into three different page types: aggregate, typical, and individual (Section 4.1). To provide overall consistency to the site, our team implemented this organization throughout all topics in Venipedia. To further improve consistency, we also made the decision to have each page in Venipedia include the standard Wikipedia page headers: “See Also”, “References”, “Bibliography”, and “External Links” (Section 4.1.2.2).

Another priority of this project was to ensure good and appropriate page content. We defined good content in a rubric and assessed each page accordingly, making changes where needed (Section 4.1.2.3). Moreover, we concluded that appropriate Venipedia pages must pertain explicitly to Venice and should not be generalized topics that are typically covered in Wikipedia. We felt that it was crucial to distinguish Venipedia from Wikipedia in this way in order to uphold the quantitative and technical aspects of the site.

One important decision that took a great deal of deliberation between our advisors and us was how to categorize Venipedia (Section 4.1.3). Ultimately our team compared the portals or “overarching categories” in Venipedia to those contained in Wikipedia and agreed to create new two-word portals. We felt that this conclusion allowed every topic in Venipedia and every potential new topic covered in future years to belong, with proper categorization.

Our team sought to improve the overall management of the site by allowing a page-rating system to keep track of the quality of the pages, updating the “Help” section of the site, and creating an article wizard similar to that of Wikipedia to promote simple and consistent page creation (Section 4.3).

Finally, we remodeled the main page of Venipedia to enhance the style of the site and stimulate user engagement (Section 4.2). We chose to keep the “What is Venipedia?”, “Featured Article”, and “Did you know...” sections and add sections for viewing site usage statistics and for contributing through the article wizard.

### **4.1 Improving the Organization of Venipedia**

As previously mentioned, Venipedia follows the same wiki format as Wikipedia, meaning that both websites share common page aspects such as table of contents boxes, infoboxes, and navboxes. Venipedia differs from Wikipedia overall because Venipedia has a hyper local setting, meaning that pages only pertain to data about Venice. Furthermore, this local focus means that Venipedia utilizes different types of pages along with different structural aspects for categorization of pages. For pages themselves, common page structure and content were also important in making Venipedia a user-friendly website.

### 4.1.1 Types of Pages

Although Wikipedia and Venipedia remain similar in wiki styling, Venipedia contains more specific data than Wikipedia. To deal with the large amounts of data associated with Venipedia pages, page content is often sorted into three different page types: aggregate, typical, and individual pages.

#### 4.1.1.1 Aggregate Pages

Aggregate and typical pages both share common ground in that these pages are not data-driven. Aggregate pages contain general information on a group of objects as a whole. An example of one such page would be “Bridges,” which contains information about all 433 bridges in Venice as a single group. As seen in Figure 23, the bridges aggregate page contains a small infobox with interesting statistics such as total number of bridges in Venice as well as the longest, widest and newest bridge.



Bridges	
	
The Rialto Bridge	
Number	433
Longest	Ponte della Costituzione
Widest	Rialto Bridge
Newest	Ponte della Costituzione

Figure 23. The infobox for the Bridges page.

The Table of contents box on the left in Figure 24 below shows headings listed as History, Statistics, Notable Venetian Bridges, Location, See Also, References and External Links. All of these headings contain only relevant information to all the bridges in Venice with the Location heading consisting of a GIS map identifying the locations of all 433 bridges.

#### 4.1.1.2 Typical Pages



Contents [hide]	Contents [hide]	Contents [hide]
1 History	1 Materials	1 Structure
2 Statistics	2 Processes Affecting Bridges	2 Archways
3 Notable Venetian Bridges	3 See also	3 See Also
4 Location	4 References	4 References
5 See Also	5 External Links	5 External Links
6 References		
7 External Links		

Figure 24. The table of contents from three bridges pages. From left to right, Bridges (aggregate page), Bridge (typical page), and Masonry Bridge (typical page).

Typical pages represent the typical manifestation of an object in a group. For example, the Venipedia page “Bridge” contains information pertaining solely to the anatomy of a typical Venetian bridge. Figure 24 (middle) shows the table of contents box for the bridge page.

The page contains Materials, Processes Affecting a Bridge, See Also, References and External Links. Even more specifically, the materials heading leads to three more singular pages concerning the anatomy of a bridge made out of a certain material. The material pages are, Masonry Bridge, Wood Bridge, and Stone Bridge. Each of these singular pages relating to structural composition contains a contents box with structure, archways, see also, references and external links.

One may notice that Aggregate Pages use the plural form of the noun as a title and Typical Pages use the singular form. For example, the “Bridges” Aggregate Page is the plural form of “bridge” and the “Bridge” Typical Page is the singular form.



Venipedia admins enforce this structure in order to maintain consistency in titling throughout Venipedia and so that users can recognize different types of pages simply by reading a page title.

4.1.1.3 Individual Pages

Individual pages play a key role in setting Venipedia apart from Wikipedia because Individual Pages are a unique type of page designed to deal with data collected by the Venice Project Center. These pages are often referred to as data-driven pages and are all

Contents	[hide]
1	Map
2	Maintenance
3	Traffic
4	Utilities
5	See Also
6	References

Figure 26. Contents box for the Ponte do la Cortesia bridge page.

automatically generated through a system called City Knowledge (Appendix 7.3.2) for a given group of objects. Because Venipedia has a hyper-local setting, the site has pages for every bridge in Venice along with other data sets of pages such as all the coats of arms, canals, boat lines, churches, bell towers, and many more. An example of an individual page would be *The Ponte*

*de la Cortesia*, which contains specific information for a single bridge in Venice. Another unique feature is that all pages referring to the same topic (for example each bridge page) follows the same template. Figure 25 shows the infobox and Figure 26 shows the contents box for the Ponte do la Cortesia Bridge in Venice. Additionally, each individual page has a navigation box linking to all of the other bridge pages in Venipedia. To ensure that all of these pages followed certain standards, we defined what made a “good” Venipedia page.

4.1.2 Defining a Good Venipedia Page

Part of revamping Venipedia involved defining what makes a good Venipedia page. Unlike Wikipedia, which has few restrictions on the types of pages being made, Venipedia only contains articles about topics relating to Venice. When evaluating the aspects of a good page, it was important to look at both the content and structure.

4.1.2.1 Page Content in Venipedia

We decided that the content of a page must contain enough information to thoroughly explain the subject, without becoming overwhelmed with generalized information that can be found in Wikipedia. A good article must also provide numerous references from credible sources. Pages should consist of accurate information as well as proper style and grammar. These aspects are important to creating a clear and concise article that can be understood by a large audience. Likewise, following an encyclopedia format meant that the writing style should be mostly factual leaving little room for personal opinion or interpretation. Although this definition of good page content seemed like a hefty task to undertake considering most content is relevant to a user’s perception, the basic definition helped

Ponte de la Cortesia



Ponte de la Cortesia

Type of Arch	Sesto Ribassato
Material	Mattoni e Pietra d'Istria
Sestiere	San Marco
Canal Crossed	Rio de S. Luca
Length	8.46
Number of Steps	27

Figure 25. Infobox for the Ponte do la Cotresia bridge page.

to ensure proper page content for future contributors, which is addressed further in Section 4.3.

#### ***4.1.2.2 Page Structure in Venipedia***

Determining the structure of each page involved looking at the layout of various pages to find their common aspects as well as a typical Wikipedia page. Overall, we decided that regardless of page type, each page should have a contents box, headings and subheadings, an info box, a navigation box, images, and maps. The infobox within the page should be solely for data related to the subject. The only specific headings that we found appropriate for all pages were See Also, References, Bibliography, and External Links. For these headings, we determined that See Also would contain links to other related Venipedia pages as well as the navigation box. References would be for specific citations within the text whereas the Bibliography would be for general citations that were referenced throughout the article. External Links would be for links to other relevant websites aside from those contained in Venipedia. Each page should also have related images and maps to make the page more interesting. Figure 27 shows a model page with structures in order of how they should appear.

# Model Page

Brief Description of Subject Matter

<b>Contents</b> <a href="#">[hide]</a>
1 <a href="#">Heading 1</a>
1.1 <a href="#">Subheading 1</a>
2 <a href="#">Heading 2</a>
3 <a href="#">See Also</a>
4 <a href="#">References</a>
5 <a href="#">Bibliography</a>
6 <a href="#">External Links</a>

## Model Page

<b>Data 1</b>	XXX
<b>Data 2</b>	XXX

## Heading 1

Insert Text

### Subheading 1

Insert Text

## Heading 2

Insert Text

## See Also

<a href="#">v</a> • <a href="#">d</a> • <a href="#">e</a>	<b>Sample Navigation Box</b>	<a href="#">[hide]</a>
<b>Group1</b>	links to Venipedia articles in group1	
<b>Group2</b>	links to Venipedia articles in group2	

Insert links to other Venipedia pages not included in NavBox

## References

References generated by references in text.

## Bibliography

Insert citations for outside sources that encompass the entire article.

## External Links

Insert links to web pages outside of Venipedia.

Figure 27. This model page shows the table of contents box, infobox, and navigation box, three unique wiki aspects previously discussed. Additionally, the model page provides the general layout along with required headings for every Venipedia page.

Other than the general requirements for all types of pages, we determined that individual pages should all follow the same template. Luckily, the creation of these templates was mainly generated through City Knowledge which is discussed in detail in Appendix 7.3.2; however, the overall concept involves recalling the definition of an individual page in Section 4.1.1.3, which states that it is a data-driven page such as a

single coat of arm in Venice. Therefore, every coat of arm page should require the same data-fields for the infoboxes along with the same headings in the table of contents box. Additionally, each page will contain a navigation box for all other coats of arms pages in Venipedia.

4.1.2.3 Assessing Former Venipedia Pages

To evaluate Venipedia pages we designed a page requirement rubric (Figure 29) based on the criteria above. To demonstrate the use of this rubric, we analyzed the “Fountains” page (Figure 28).

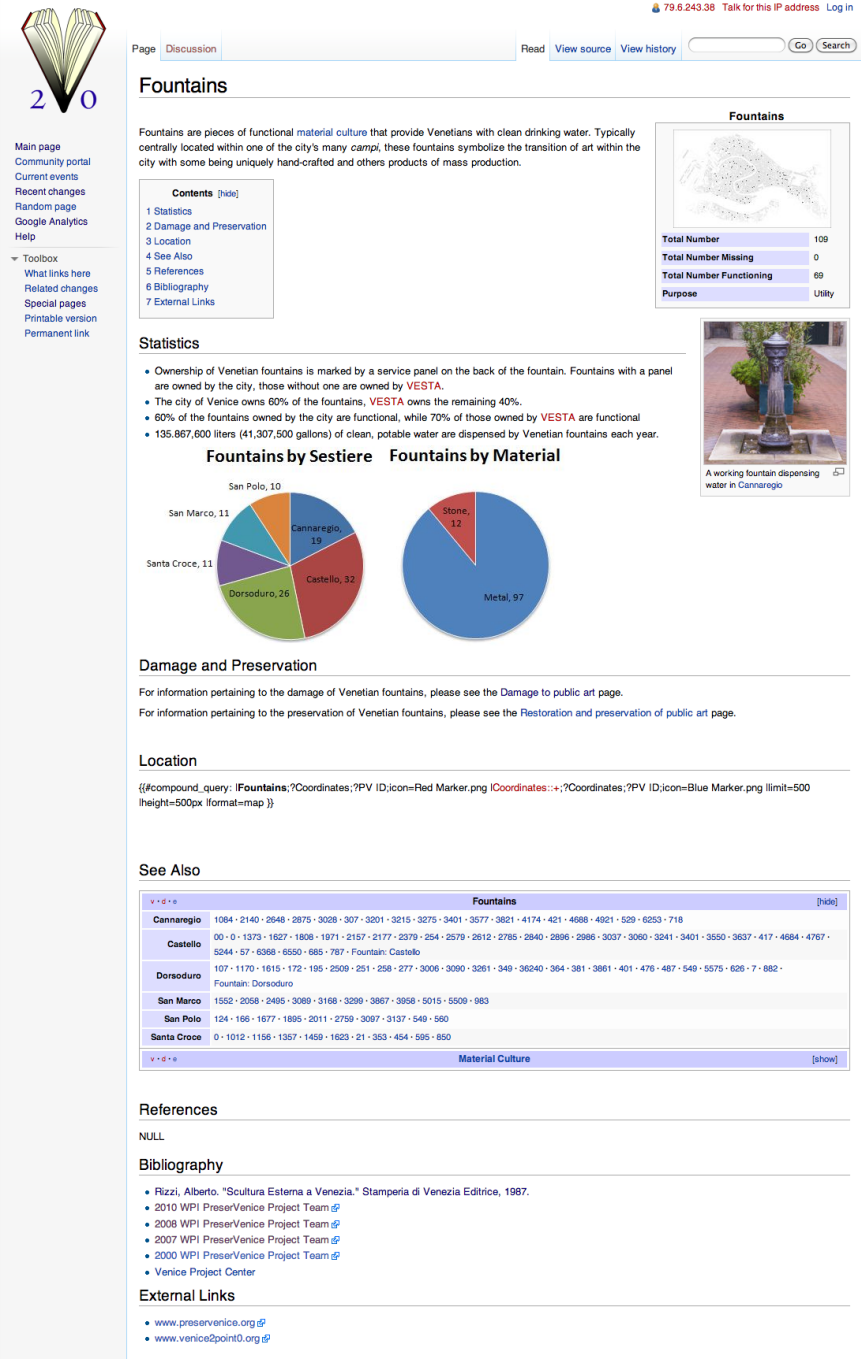


Figure 28. The Fountains page taken from the former Venipedia

Page Requirement	Venipedia
<b>Contents Box</b> Contains headings and subheading to guide and inform user of page content	Exists 6 headings-all relevant
<b>Information Box</b> Contains a list of critical information, which summarizes the page material	Exists Map of fountains total # and purpose
<b>References</b> External and internal hyperlinks to sources of information as well as lists of said sources	6 references all w/ links 1 link broken
<b>See Also</b> Easily accessible hyperlinks to related pages	Exists leads to fountain individual pages which are just #s based on location
<b>Info-graphics</b> Graphical and visual data, such as GIS maps, which add to the aesthetics and ease of understanding information	Google map showing all fountains, links to each fountain work
<b>External Media</b> Images, audio, and video that enhance and immerse a page viewer in the page subject	1 image 2 pie charts as part of "statistics"
<b>Page Content</b> Pages are written in clear, concise language and do not contain errors in grammar or sentence structure	Little amount of text needs minor changes but more contexts

Figure 29. The completed rubric for the Fountains page in Figure 28.

Looking at the rubric, this page had no major problems but needed minor revisions before it could be transferred to the new Venipedia website. In an effort to streamline the rating process, we configured a rubric in excel for all of the given requirements. The spreadsheet with an example of one graded page can be seen below in Figure 30.

Patere	Description	Contents Box	InfoBox	References	See Also	Info-graphics	External Media	Page Content	Translate	Total	Page Loads
Patere: Burano 141	1		0	1	1	1	1	1	0	6	28

Figure 30. One row of the spreadsheet used to evaluate pages in bulk. This was filled out for an individual page on patere, a type of public art. The total score is 6, indicating this page needed attention.

If problems warranting attention were noted in any of the rubric categories, the category was marked with a 1, which led to each page having a total score signifying its relative need for improvement. Pages with the highest scores needed the most work, while those with lower scores were better and as such needed less attention.

Following this method, we evaluated a sample 1,609 of the existing Venipedia pages and compiled the results in a spreadsheet. The highest possible score was a 9 meaning that a page was lacking in all categories and the lowest score was a 0 signifying that

the page had no major errors and would be a good candidate for transfer. Once problems in content of pages and structure were fixed, the pages needed to be linked to each other and categorized such that the website would be easily navigable.

### 4.1.3 Improving Navigation throughout Venipedia

The similar construction between Wikipedia and Venipedia can further be seen

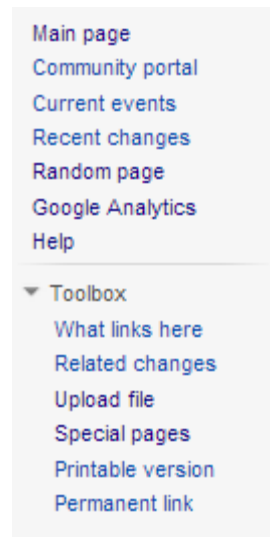


Figure 31. The left sidebar of all Venipedia pages.

through the home page layout. Figure 31 shows the left sidebar of the every page within Venipedia. The left side of all pages contains a list of links to noteworthy pages such as the main page, community portal, and current events. Further down on the left side of the page are links that will take visitors to the Help page, Toolbox, and Print/export page. These links, along with the portals box at the top of the home page, add to the ease of traversing the site to find certain information. The top-right of the Venipedia homepage, under the banner, contains various portals, which sort relevant articles based on topic. The webpage navigation can be thought of as a hierarchal tree by which a single portal has various categories and subcategories. Figure 29 shows the portals in Wikipedia compared to those of the former Venipedia site. We composed a complete mapping of Venipedia portals, which can be found in the Appendix 7.1. In brevity, the portals were Art, Economy and Tourism, History, Institutions, Urban Maintenance and All Categories. Despite these portals, many of the 89 categories in “All Categories” were not linked to any of the portals. Additionally,

670 pages were uncategorized and could not be found though the main page without searching.

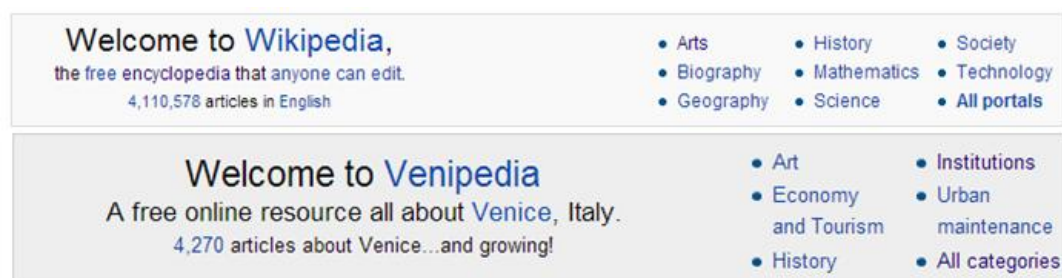


Figure 32. Comparison between the Wikipedia portals (top) and the former Venipedia portals (bottom), which are used to help navigation and find pages within related sections.

#### 4.1.3.1 Categories in Venipedia

Working our way from pages to portals, our team came up with a total of seven new portals, to which categories are continuously being added. It is important to note that we added the portals (Section 4.1.3.2) after considering the ever-growing number of categories that are added to Venipedia each year. We wanted to ensure that all

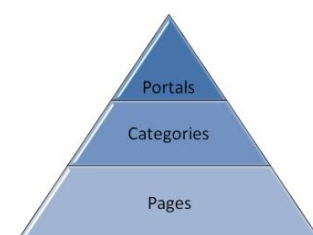


Figure 33. Pyramid of Venipedia navigation.

categories would have an appropriate section to fall under so that the user can follow a logical navigation to his or her pages of interest.

#### 4.1.3.2 Portals in Venipedia

Wikipedia has nine listed portals while the former Venipedia had six. Despite the much larger database of Wikipedia, we ultimately decided that the most effective way to encompass all of the topics covered in Venipedia was to create a total of seven two-named portals. Although the portals are the highest “super categories” of the site, we reached final designations of the portals by working our way up from the lowest level of pages, which can be seen in Figure 33. We started with the pages and projects, and thought of the best-suited categories to fit the topics covered. Next we organized the categories into portals, which resulted in the following portals (Figure 34): Arts & Crafts, Economy & Society, History & Geography, People & Institutions, Infrastructure & Mobility, Nature & Energy, and Science & Technology.

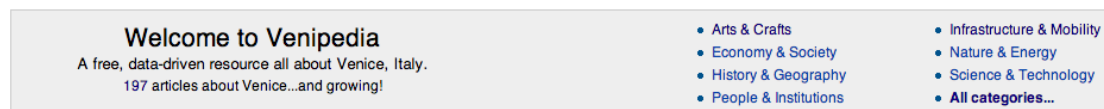


Figure 34. The updated portal names on Venipedia.

## 4.2 Recreating the Main Page

To ensure a clean website, the Venipedia database was transferred to the URL [future.venipedia.org](http://future.venipedia.org) so that the pages could be put under construction. A new installation including blank database and wiki was created at the URL [Venipedia.org/wiki](http://Venipedia.org/wiki) and only well-developed pages were transferred over upon approval. To ensure the security of both websites, we restricted editing privileges to administrators while the new Venipedia was under construction.

The new installation of Venipedia involved a multi-step process to initiate the website. Almost all Templates and Extensions from the old site were transferred over before all of the revised pages could be transferred over along with uploading all of the images associated with them. Upon completion of these various tasks along with decisions made in section 4.2, the website was finalized on December 15<sup>th</sup> with a new and improved main page (Figure 48).







### 4.2.1 The “What is Venipedia?” Section

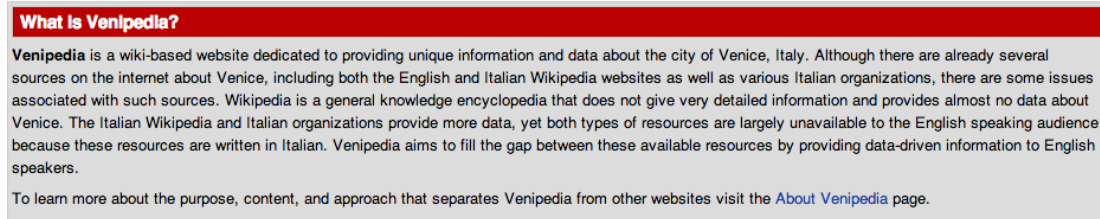


Figure 36. The “What is Venipedia?” section of the current main page

Figure 36 is a screen capture of the “What is Venipedia” section of the current main page of Venipedia. This section serves the purpose of defining Venipedia as a source of information about the City of Venice for potential new users. Moreover, it justifies the reason for visiting a site such as Venipedia instead of the English or Italian Wikipedia when searching for details about the city. The “What is Venipedia?” section refers the user to the “About Venipedia” page for more information about the encyclopedia. This section is brief because the main page is meant to draw the attention of users to interesting aspects of the site, such as the “Featured Article” and “Did you know?” sections discussed next.

### 4.2.2 The “Featured Article” Section

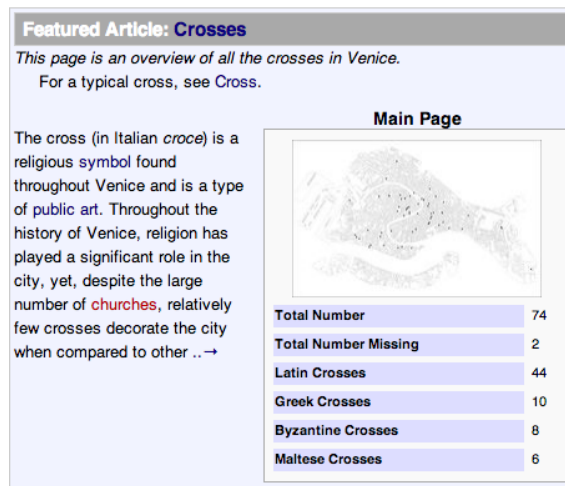


Figure 37. The “Featured Article” section of the main page. In this case, the featured article is the “Crosses” page.

Figure 37 is a screen capture of the “Featured Article” section of the main page of Venipedia. The featured article is randomly selected from the aggregate and typical pages in the site and it automatically changes every time the main page is refreshed. To ensure that the entire article is not visible on the main page, the featured article is condensed to a short blurb of text and usually either an infobox or an image, which can be seen in the “Crosses” article example in Figure 37. The featured article is a glimpse at the range of pages that Venipedia has to offer.

### 4.2.3 The “Analytics at a Glance...” Section

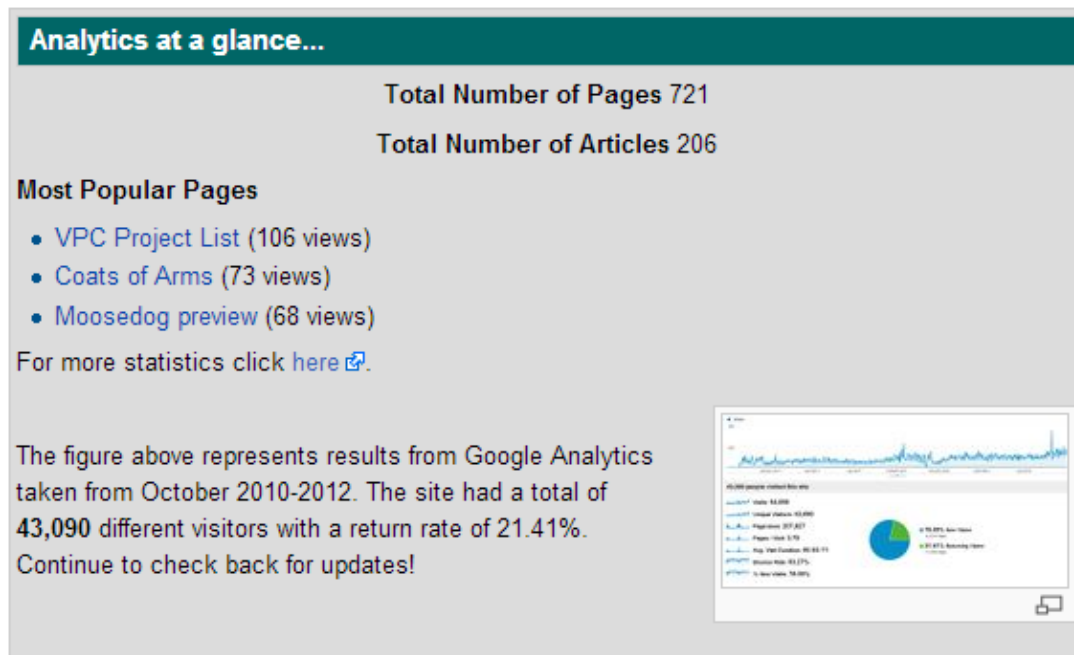


Figure 38. The “Analytics at a Glance...” section showing site usage statistics.

As discussed later in depth later on in Section 4.4, Google analytics along with wiki statistics were added to the home page. Figure 55 shows what the “Analytics at a Glance...” section looks like. The main page displays total number of pages, total number of articles, top three articles along with a brief description of the past years Google analytics and an image which can be enlarged to show the site usage data produced by Google analytics. These analytics are all automated and self-updating.

### 4.2.4 The “Did you Know...” Section

The screenshot shows the 'Did you know' section with a red header. It contains a list of eight trivia facts about Venice, each with a bullet point and a question mark. The facts are: 1) '...that the **Centro Maree** is responsible for sending out the tide forecast and acqua alta warnings in Venice?'; 2) '...there are 1,098 **coats of arms** in Venice?'; 3) '...that Venice is the **cruise ship** capital of the Mediterranean?'; 4) '...there are 238 **well heads** in Venice?'; 5) '...Venice is composed of 182 **canals** that are navigated by **public transportation boats** along with more traditional **gondolas**?'; 6) '...that the Venetian **sewage** system was once the most advanced in the world?'; 7) '...the greatest flood in history was the **flood of 1966** which destroyed billions of dollars worth of art?'; 8) '...the **2650** streets of Venice are connected by **433** bridges?'. The text is color-coded with red and blue for emphasis.

Figure 39. The “Did you Know...” section of the main page.

Figure 39 is a screen capture of the “Did you know” section of the main page of Venipedia. This section lists a number of what the administrators consider to be

interesting facts about the City of Venice. These facts are neither random nor automatically updated, but rather manually changed by administrators on a regular schedule. Although “Did you know” facts are changed manually, administrators are working towards a method for displaying an automated list of facts in an effort to make the main page of Venipedia completely self-maintained.

#### 4.2.5 The “New to Wiki?” Section



Figure 40. The “New to Wiki?” section of the main page.

Figure 40 above shows the “New to Wiki?” feature on the home page. The box contains a link to the new Venipedia help section as well as a link to the article wizard for those wishing to contribute. We hope that this section on the home page will encourage users to learn more about the technical aspects of the site through the help section while also learn how to contribute if they desire.

### 4.3 Controlling the quality of Venipedia

With pages fixed and navigation taken care of, the next step was to determine a proper method for managing the site and its contributors as a whole. It has been stated by Edward Tufte, a professor at Yale university and well-known for his books about information design in websites, that “clutter and confusion are failures of design, not attributes of information” (Kalbach 2007). Therefore, it remains important that in order for anyone to learn from a website such as an online encyclopedia it must be kept up to date with ample information. As part of fulfilling this goal, we took preemptive measures to monitor user contribution, install user feedback mechanisms, and collect analytics to determine whether the site is fulfilling its goal of being a comprehensive and useful online resource.

Venipedia strives to follow the wiki standard of allowing free editing capabilities to anyone desiring them; however, in the past, these capabilities led to large amounts of spam, which caused clutter and confusion - two flaws we aimed to eliminate. In order to abide by the wiki standards, we decided to control editing privileges for pages. To edit or create pages, one has to request to create an account with Venipedia. One way of doing so is by entering a valid email address into the Article Feedback Tool, which is discussed in section 4.3.3. A group of Venipedia moderators must then approve the potential user before allowing him or her to begin editing the site. Our team thought that the selective addition of new users was the best way to control any new information on Venipedia. We developed a plan in which the aforementioned group of moderators will monitor the first 50 edits from the new user, to ensure that his or her edits are appropriate. Additionally, users have to correctly fill out a Recaptcha before any of their contributions can be saved. The Recaptcha tool can be seen in Figure 41; Recaptcha is a commonly used tool to prevent malicious software from automatically generating hundreds of unwanted pages. To guide new users in proper

formatting and the general wiki syntax along with more specific details to Venipedia, we revised and reorganized the Help Section.

As a non-profit organization run by fewer than ten administrators, Venipedia needs as many contributors as possible to expand; however, in the meantime the site cannot handle the negative effects of free editing. The content supplied by contributors must be monitored to guarantee our standards of high quality pages.. The group of moderators that currently run the site are founder Fabio Carrera and a small number of associates. This is acceptable for the initiation of the moderation process but we believe that a select group of moderators must be determined in the near future to monitor the actions of new users. Although the time constraint of this project did not allow us to establish a group of moderators, we came to the conclusion that these users must speak English and have an extraordinary interest in the City of Venice.



Figure 41. The reCAPTCHA installed on Venipedia requires users to type the words shown above correctly into the yellow box. This prevents robots from generating pages.

#### 4.3.1 Helping Venipedia Users

In order to provide a simple and effective guide of Venipedia's inner workings, we remodeled the Help Section. Before we started our project the Help section contained much of the information that a user would need to understand the purpose of Venipedia, as well as page mechanics and how to take advantage of wiki syntax to properly contribute to Venipedia. Unfortunately, the aforementioned information was lost within cluttered article pages, which made it difficult to find tutorials for many of Venipedia's features. To remedy these issues we reorganized the pages into two distinct guides: The Help Section and the About Page.

The new Help Section is essentially a mechanics guide and is dedicated to teaching users how to use wiki syntax. A new section, called the About page, contains information regarding Venipedia itself: Venipedia's purpose, what separates Venipedia from other sites, Venipedia's content, and other such large scale issues. To learn more about the layout and content of the "Help" and "About" sections, visit Appendix 7.4.

#### 4.3.2 Ensuring Consistency by using the Article Wizard

For users wishing to add pages, we needed to create a method to ensure that new pages followed our standards and to guide users in the page creation process. To accomplish this we adapted the page creation method that Wikipedia uses- what they refer to as the "article wizard." Wikipedia's Article Wizard page is shown below in Figure 42.



Figure 42. The Wikipedia demonstrates the steps involved in creating a new article.

By clicking “create an article now,” the second box shown in Figure 43 appears, displaying topics that the user may seek to write about. From there, there are six steps involved in creating a new article: Introduction, which questions the reader on if she or he is truly ready to create an article; Subject, which helps the reader choose a proper title concerning what one’s article is actually about; Notability, which verifies that the subject has enough credibility to be written about knowledgeably; Sources, which ensures that the proposed article has valid sources; Content, which outlines steps to avoid plagiarism or poor writing; and finally the end step which allows one to submit an article for review.

Although Venipedia shares many similarities with Wikipedia, Venipedia needed its own way for users to create good pages solely pertaining to Venice. To help users abide by Venipedia standards, we created an article wizard similar to the Wikipedia wizard. Venipedia’s wizard follows the same six steps as the Wikipedia wizard, but has details pertaining to Venipedia. The wizard can be seen below.



Figure 43. The article wizard in Wikipedia asks questions such as “What is your proposed article about?” to ensure that relevant pages are being added and to help the user understand what he or she should put on the page.

<b>1. Introduction</b>	2. Subject	3. Notability	4. Sources	5. Content	6. End
------------------------	------------	---------------	------------	------------	--------


**Welcome to the Venipedia Article Wizard!** This wizard will help you through the process of submitting a new article to Venipedia. There are 6 sections to step through, and then you'll be taken to the editing page. As each section is completed, the next will become available.

Please remember that in order to create a page, you need to be a registered user!

If you have questions at any point, please reference the [Venipedia help section](#). Please remember that we are a unique wiki concerned with only subjects related to Venice, Italy. The administrators for this non-profit site are volunteers so please ensure your article is a relevant subject. Thanks!

**Are you ready to create an article?**

**Basics of editing**

 It's highly recommended that you thoroughly review the [help section](#) on Venipedia before you attempt to create an article. We encourage contributions but only those that are relevant to Venice, Italy and are correctly formatted.

To learn more about what makes Venipedia unique please [click here](#). To understand what subjects may be a conflict of interest [click here](#).

Figure 44. The “Introduction” section of the Venipedia article wizard.

Clicking “I am new to Venipedia” from the section in Figure 44 would lead to the next section called, “2. Subject”, which contains the features shown below in Figures 45 and 46. The remaining steps are fully documented in Appendix 7.5.

**What is your proposed article about?**

To continue, click on one of the options below:

Figure 45. Article wizard section asking what the proposed article is about.

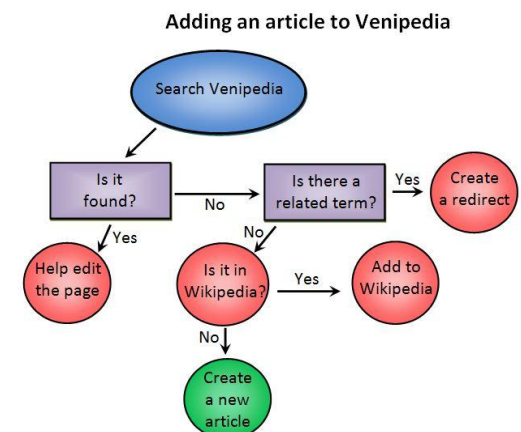


Figure 46. Diagram ensuring that users have thought through whether or not their articles belong in Venipedia.

Clicking “I am an advanced user” (Figure 44) would lead the user directly to the last page of the wizard, which is designed for the actual creation of a page.

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	<b>6. End</b>
-----------------	------------	---------------	------------	------------	---------------

**You are ready to go!**

Don't forget to hit the  button when you are done editing - otherwise your submission will be gone!

Figure 47. The final section of the article wizard that allows users to choose from a list of page types.

By clicking on the article type that you wanted to create, another page would appear for a more specific categorization for the page one desired to create. Pretending that the “Create a Project Page” had been clicked, the



following page would appear (shown in Figure 48).

## Venipedia:Article wizard/Create a Project Page

Project pages are geared towards those projects that are conducted in or for Venice. The most popular type of project within this category are projects conducted at the [Venice Project Center](#) (VPC). If you would like to get an idea of what these pages encompass, please view a full list of the [past projects conducted at the VPC](#).

To create your own Project page, choose one of the options below:

**VPC Project** If you are a Worcester Polytechnic Institute (WPI) student trying to create a page for your project, you can create your page here.

Enter your VPC project name here

Create your VPC Project Page

**Other Project** If you're trying to create a page for a project not associated with WPI or the VPC, create a page here.

Enter the project name here

Create a Project Page

Figure 48. The “Create a Project Page” Page in the article wizard.

Here, a user is given two options for project pages. Depending on the type of project page desired, the user would type the title of the project they were trying to create a page for in the box and then click the “Create a Project Page” button below. To create a VPC project page for “Project Y,” the result of clicking the VPC Project Page button is shown in Figure 49.

## Creating Project Y

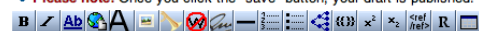
### Instructions

Creating a VPC project page only requires filling in the template that comes up below for you, here you can see what you should put for each heading. This template is for WPI students wishing to upload their projects.

1. **image=** This is for a professional picture of your team. Remember you need to upload a file of your team for this image to work in your page, for more on uploading files, click [here](#).
2. **team members** Team members should be listed with in between each team members name. ie. Mary  
Joe  
Tim
3. **sponsors** Remember that if your sponsor already has an institution page, insert the institution as a link like shown for the “Venice Project Center” which automatically appears for you.
4. **see also** Insert links to any Venipedia pages that your team created (**not** including links to every individual page)

### Important

- **Please note:** Once you click the “save” button, your draft is published.



[[Project page  
|image= [[File:Insert team image title here|200px]]  
|year=Insert year created  
|season=Insert season completed (ie Bterm would be “Fall”)  
|term= Insert letter of term  
|topic=Insert topic that your project was related to  
|team members=Insert team members here  
|advisors=Fabio Carrerra <br> Insert second advisor name here  
|sponsors=[[Venice Project Center]]<br>Insert any other sponsors here  
|abstract=Insert your abstract here  
|report=[[Insert the link to your report|Insert the title of your report]]  
|see also=  
|external links=\*(Insert links to related webpages here]

Summary:

☐ Watch this page

Please note that all contributions to Venipedia are considered to be released under the Creative Commons Attribution-NonCommercial-ShareAlike (see [Venipedia:Copyrights](#) for details). If you do not want your writing to be edited mercilessly and redistributed at will, then do not submit it here.  
You are also promising us that you wrote this yourself, or copied it from a public domain or similar free resource. **Do not submit copyrighted work without permission!**

Figure 49. The automated template generated by the article wizard for creating a project page.

Essentially, this is a pre-filled template for the user in which the user only has to insert information into the designated fields and the page will be automatically populated for them. Full documentation on this article wizard can be found in Appendix 7.5. The article seeks to keep Venipedia a relatively “free to edit” webpage while also ensuring less maintenance in the future since users should ideally be creating “good” pages with this tool.

### 4.3.2.1 Page Ratings

To maintain a high quality website that follows wiki formatting and the general idea of an online encyclopedia, we installed feedback mechanisms so that we could not only gain user contribution to the site, but also receive opinions on the relevance and quality of pages. Furthermore, we

wished to monitor the website as a whole to see who was visiting and which pages were most popular.

Wikipedia utilizes, the Article Feedback Tool (AFT), which serves to address two primary concerns: “Quality assessment” and “Reader engagement” (“Wikipedia...” 2012). The tool, shown in Figure 50, offers users a method of rating an article based on trustworthiness, objectivity, completeness, and how well-written it is. Furthermore, it adds an option for the user to specify any expertise he or she may have on the subject, and provides a simple input box for the user’s email to help the user contribute to the article if so desired.

**Figure 50. The Article Feedback Tool rates pages with stars on four categories and even has a highly knowledgeable option that users can click if they would like to contribute.**

By implementing this simple tool as a component in Venipedia we hope to gain direct feedback on the contents of specific pages. Users can identify out-of-date information, poorly written pages, or sparsely populated pages to repair in future additions to the site. While this functionality is helpful for Wikipedia, it will be crucial for Venipedia because of the contrasting nature of content addition and editing between the two sites; without the extensive editorial user base that Wikipedia enjoys, Venipedia will face some difficulty in maintaining a high quality product as time passes. Receiving specific, quantifiable suggestions from users will aid Venipedia’s curators to keep up with demand through minimal effort.

### 4.3.3 Moderating Venipedia using page ratings

We hope that the Article Feedback Tool, shown previously in Figure 44, will allow Venipedia not only to ensure high page quality, but also allow Venipedia administrators to assess the quality of user contributions. As Venipedia becomes more popular we expect that the number of users seeking to contribute to articles will increase. By using the Article Feedback Tool to monitor user created page ratings administrators will be able to track how trustworthy, objective, complete, and well-written a user's contributions are. In this way, Venipedia administrators will be able to prevent poor contributors from continuing to make sub-par articles, while encouraging high-quality contributors to continue to add information to Venipedia, the end result being a registered-userbase of high quality contributors.

It is important for Venipedia to recruit and maintain high quality users because of Venipedia's more limited userbase, which makes it more difficult to maintain overall quality. This concept was mentioned before, however, the importance of developing a well-educated and quality group of contributors cannot be overstated. Without millions of users to moderate the site, Venipedia will depend on its small userbase to maintain site quality over thousands of pages. To accomplish proper moderation registered users will depend on the Article Feedback Tool to find less than perfect pages so that they can be fixed. Furthermore, as ratings accumulate, users will be able to find which pages are most popular and useful, which will aid in analyzing Venipedia's effectiveness and usability.



## 4.4 Measuring the effectiveness of Venipedia

It is not enough to merely design a website that we feel is of high quality and value, and make it available to internet users worldwide. As creators and contributors with specific goals, it is crucial that we analyze our progress in accomplishing those goals. Toward that end, we have developed a method for tracking statistics of how the world views Venipedia, and compiling that data to provide insight on what sections of our site are executed well and what areas might still need improvement.

### 4.4.1 Venipedia Analytics

To prove the practical value of Venipedia and understand the needs and preferences of its users, we have implemented a service called Google Analytics which accumulates statistics on how users interact with the website. Google Analytics is a free and elegant software solution for this purpose, allowing website administrators to customize the various types of statistics to track and providing many options for customizing the manner in which data is visually displayed. These customizations can be saved as charts and graphs in a “Dashboard” interface that updates in real-time (shown in Figure 51). In addition, the statistics may be downloaded as raw data spreadsheets, while the charts, graphs, and tables can be exported in PDF format. Thus far the Google Analytics data extends back through October 27<sup>th</sup> of 2010, and since it was briefly interrupted when the new installation of Venipedia was created under the URL “www.venipedia.org/wiki” instead of the previous “www.venipedia.org.” In the next section, we will explain the types of statistics being collected and analyzed for the new Venipedia’s performance by exploring the data collected in the past two years of the previous Venipedia’s operation.

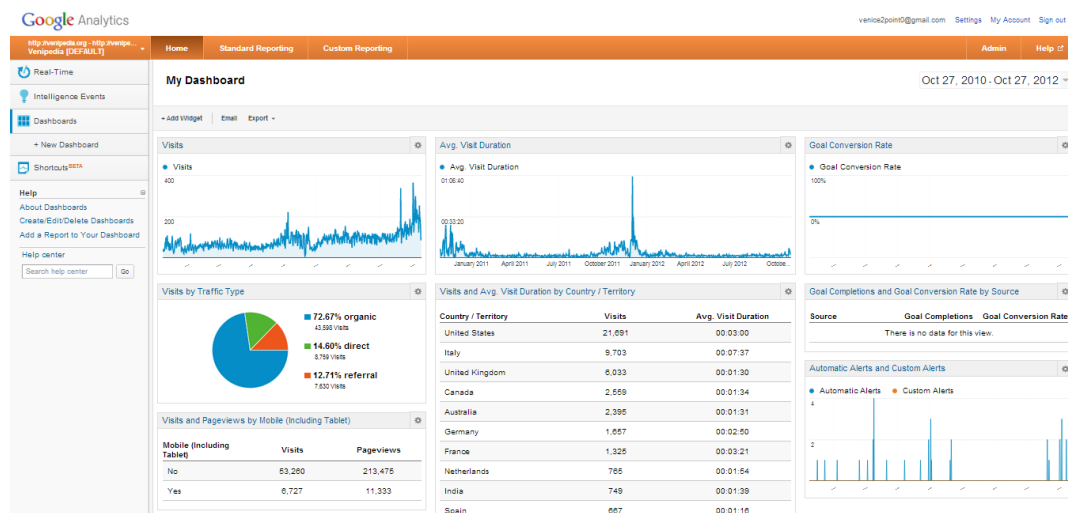


Figure 51. The dashboard for Google Analytics

### 4.4.2 Interpreting the Analytics

After scrutinizing past data on who uses Venipedia, and how they interact with the website, we were able to use various statistics to help understand the underlying

trends in user behavior. Figure 52 below shows the site use data from October 2010 when Google analytics was initially installed in Venipedia through October 2012, when the site's URL changed for the new installation. The site had a total of 54,850 visits over that two year period, from 43,090 unique viewers (distinguished from one another by IP-address). The pie chart in Figure 52 illustrates the proportion of new to returning users, showing that 78.59% of visitors were new and 21.42% were returning. This statistic interested us in how people were getting to our site and possibly why they were not returning.

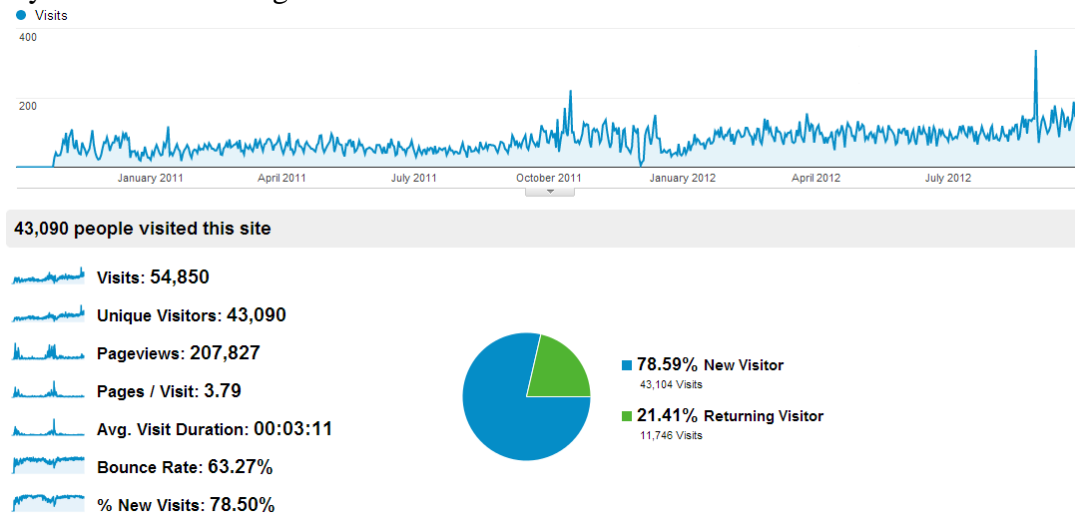


Figure 51. Google analytics shown in three various forms - users over time, total number of visits, and new vs. returning visitors.

As Figure 53 shows below, the average visit duration of Venipedia users (enumerated on the left-hand vertical axis) is roughly inversely proportional to the “bounce rate” (a percentage enumerated on the right-hand vertical axis). The bounce rate is the percentage of users who leave Venipedia after seeing only the first page they navigated to. This percentage is shown to hover at about 65% most of the time, and the average visit duration stays fairly constant at about a minute and a half. From September through December, the bounce rate typically drops to around 50% as the average visit duration jumps dramatically. It is no coincidence that this time period is the same time of year that students completing IQP projects in Venice are working on their projects, and making contributions to the Venipedia site. Taking this data to be statistically invalid, the conclusion can be drawn that the typical user from outside the WPI community spends an average of 78 seconds on Venipedia, then 65% either find the information they were seeking or left to find it elsewhere.

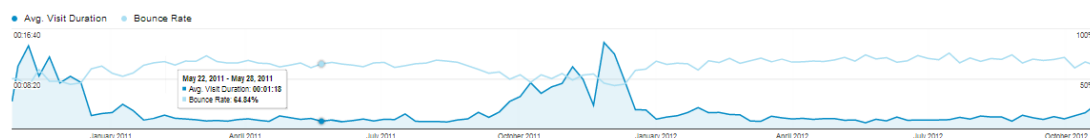


Figure 52. Illustration of Average Visit Duration relative to Bounce Rate

However, Figure 54 shows the bounce rate compared to the percentage of first-time visitors to Venipedia for the same period. It shows that the two percentages are roughly proportional. This is only logical, as it means that if users have visited Venipedia in the past, they are more likely to navigate through multiple pages on the site. However, since the percentage of new visits is also generally higher than the

bounce rate, this graph also shows that on average, roughly 20% of first-time visitors navigate through multiple pages of Venipedia. While we would like to increase this percentage in the future, knowing that approximately a fifth of new visitors to Venipedia are interested or impressed enough to navigate through the site.

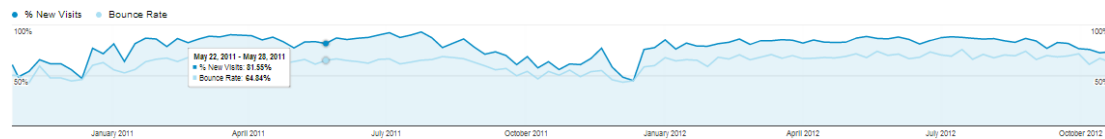


Figure 53 Comparison of New Visit Percentage and Bounce Rate for Venipedia.org

54,850 people visited this site

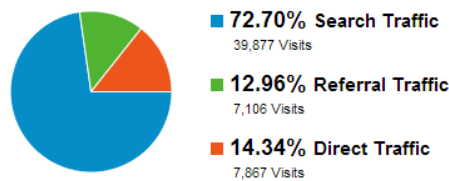


Figure 54. Pie chart created using Google analytics to show how users are accessing Venipedia.

The pie chart in Figure 55 shows that only 14.34% of visitors are through direct traffic (arriving at the site by typing in venipedia.org in their search bar). The majority of visits (72.70%) were from search traffic; for example a Google search on the Rialto bridge may have brought up Venipedia as an option for learning more about the bridge. From this we believe that people are largely searching for data or information on a particular object or topic and then discover Venipedia as a

useful source of information.

Furthermore, Google analytics gave us the ability to view which country visitors were viewing from. As Venipedia is an English based wiki, we suspected the majority of the crowd would be from the United States; however, we also figured that we would have some visitors from Italy as well. As predicted, users from the United States accounted for 36.17% of the visits and Italian users contributed 15.27% of the visits, together accounting for over half of Venipedia's traffic. Users from the top ten countries can be seen below in Figure 56.

Country / Territory	Visits	% Visits
1. United States	19,841	36.17%
2. Italy	8,376	15.27%
3. United Kingdom	5,630	10.26%
4. Canada	2,409	4.39%
5. Australia	2,168	3.95%
6. Germany	1,517	2.77%
7. France	1,221	2.23%
8. Netherlands	706	1.29%
9. India	704	1.28%
10. Spain	632	1.15%

Figure 55. The percentage of visits from different countries. The United States lead with 36.17% followed by Italy with 15.27%.

## 5.0 Recommendations

We feel that the revamping of Venipedia has been thought through such that the site will be maintainable and also continuously growing. We hope that the new features that have been set in place will appeal to more users. The site will need to be monitored to eliminate spam and poor content. Until a trustworthy group of contributors can be determined, administrators will need to keep an eye on the site; however, such monitoring should be an easier task because of the user-feedback mechanisms and a lengthy contribution process, which will deter people looking to simply add spam pages.

### 5.1 Expanding the content of Venipedia

Perhaps one of the greatest features that Venipedia has to offer is its expandable database. Recalling back to its existence in August 2012, the site had over 4,000 pages. Not only were these pages updated and transferred to the new Venipedia but, additional inventories were added to Venipedia. Looking at the WPI inventory for topics, Figure 54 shows the number of pages for each of the topics. Just these listed topics totaled to over 10,000 pages meaning that the site itself will reach **over 14,000 pages** upon completion of the datasets being uploaded. As a result, the data will be more than four times what it was before and will continue to grow since the inventories shown in Figure 57 are not even all of the data that the Venice project center has to offer. As more data from past projects is uploaded to the site, the site will grow in breadth. Expanding the database will help to make Venipedia more useful.



Figure 56. A sample of project topics and the number of Venipedia pages created from those projects.

### 5.2 Extending the usefulness of Venipedia

We expect that all of the data collected will someday be downloadable and extremely useful to the city of Venice especially for governmental agencies that who can use our data to help revise their management plans or compare results. Furthermore, the data available through Venipedia could potentially help Venice in revising their master plan which is a requirement for being part of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) which recognizes Venice as a world heritage site, an important recognition for attracting tourists to the city.

The ultimate goal of Venipedia is to connect users around the world who are seeking information about Venice. Furthermore, we hope that Venipedia.org could serve as a model for other WPI project centers that could benefit from an online encyclopedia, not only to showcase the work completed by WPI students around the world, but also to provide information about a given city to any English-speaking community and to the project center city itself. If successfully implemented, each center could potentially create a network of users who share similar interests about the city. Ideally, data on Venipedia and potentially other future wiki project center sites could become downloadable so that it could be available for any purpose; however, we need to determine a way to ensure that we are receiving acknowledgment for our work and that it is not being used for commercial purposes.

### **5.3 Protecting the intellectual property of Venipedia**

Although Venipedia is a free online resource, we need to ensure that our data is not misused. A recent concern that arose on October 21, 2012, was the existence of a commercial site called Venipedia.it. The webpage was presented in Venice and has gained great interest from Venetians who think the website is a great idea. Strangely enough, the website is not formatted to be an open wiki system like Venipedia and it launched this year, five years after Venipedia had been established. One would think that it would be contrary to good business practice to use a pre-existing name for a “for-profit” company unless of course they were perhaps hoping to use our open content to their advantage. This is exactly the type of misuse we hope to avoid if we were to have downloadable data. For now we will take emulation as a sign of flattery and perhaps future administrators will come up with a way to resolve this issue or that commercial websites like Venipedia.it may decide to join forces with us rather than against us and in turn help to create an Italian version of venipedia.org. For now, Venipedia will be maintained by administrators who donate their time to help update and expand the site. Eventually, a “donate” button may be added to the home page to help fund the maintenance of the site but until then, Venipedia will serve as a repository of information on Venice and potentially encourage worldwide IQP sites to implement a similar idea for their project centers. An idea to ensure that no commercial websites would wish to exploit our data is to produce a free smartphone application using the data from Venipedia.

### **5.4 Making Venipedia mobile**

The idea of a cell phone has grown from a simple mobile device that could only make calls to a portable device that can compute at relatively similar levels to those of a computer. Many new cell phones have internet capabilities, which allow cell phone users access to millions of online webpages. Likewise, recent development has sparked the popularity of cell phone applications, by which users can use programs such as iTunes, Maps, iMessage, and email (Figure 58). Based upon the integration of internet and applications in cell phones, we have experimented with making a Venipedia application that allows mobile users access to the Venipedia database.



**Figure 57.**  
Representative image of  
information accessible  
through mobile devices.



**Figure 59. The PreserVenice mobile application.**

In its current state, the Venipedia smartphone app is listed under [preservenice.org](http://preservenice.org). The app was created by the PreserVenice Team and contains a map with Venipedia's public art database. It looks as seen on the in Figure 59. The current layers are coats of arms, symbols, portals, fountains, fragments, street altars, wellheads, patera, and sculpture. Each layer contains each individual object on a map identifying the object's location. If one was to click on one of the symbols in Figure 60, a box would appear giving information on that object. In Figure 58, a user chose a fragment icon and the specific fragment for that location (San Polo 1591) was brought up as a box with information pertaining to that specific fragment. The fragment information for San Polo 1591 shown in the app is remarkably similar to the actual Venipedia page for the same fragment.

The PreserVenice application uses layar, which is an augmented reality application. Our hopes are to add all data driven pages with map locations to this PreserVenice application to adapt the app into the Venipedia app. We seek to add churches, bridges, streets, bells, bell towers and stores.

Additionally, the Semantic web associated with Venipedia will allow direct updating from the mobile app to Venipedia for approved users. The app would be able to take a picture of the object and record that picture to help show changes over time. If the object was missing from its location or damaged, a user would be able to update the database appropriately. Overall, the smartphone application is designed to make Venipedia available in the streets as well as to aid users in updating Venipedia remotely.



**Figure 58. An information page generated by clicking on an item in the PreserVenice application.**



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## 7.0 Appendices

### 7.1 Previous Venipedia Navigation Using Portals

The following hierarchal trees were designed to gain an understanding on the mapping of navigation within Venipedia. The portals are shown along with a tree created for each portal. Understanding the previous navigation including how generic topics encompass various subtopics helped us revise the portals into a more suitable organization for the Venipedia home page. Figure 57 shows how to find portals on the home page.

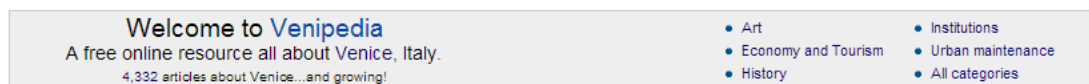


Figure 59. Former portals of Venipedia.

#### 7.1.1 Art

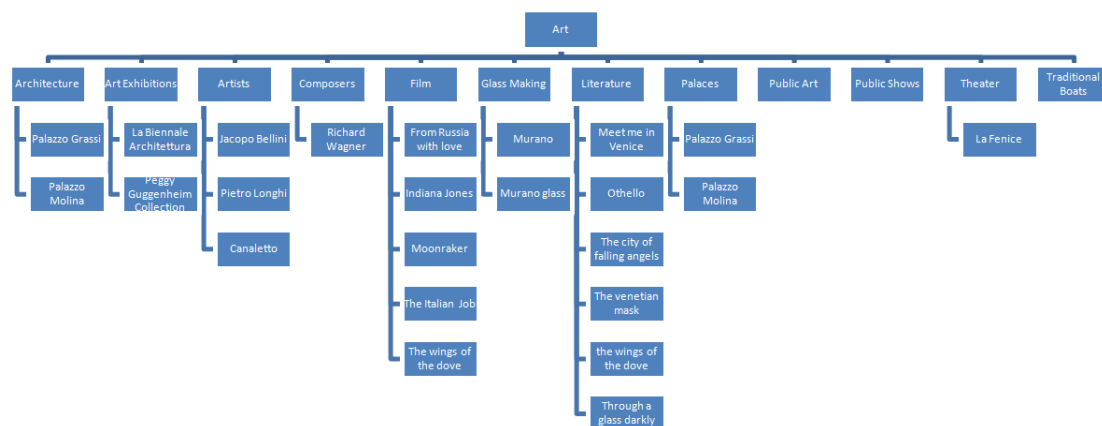


Figure 60. The art portal in Venipedia had 12 categories which each linked to various pages.

### 7.1.2 Economy and Tourism

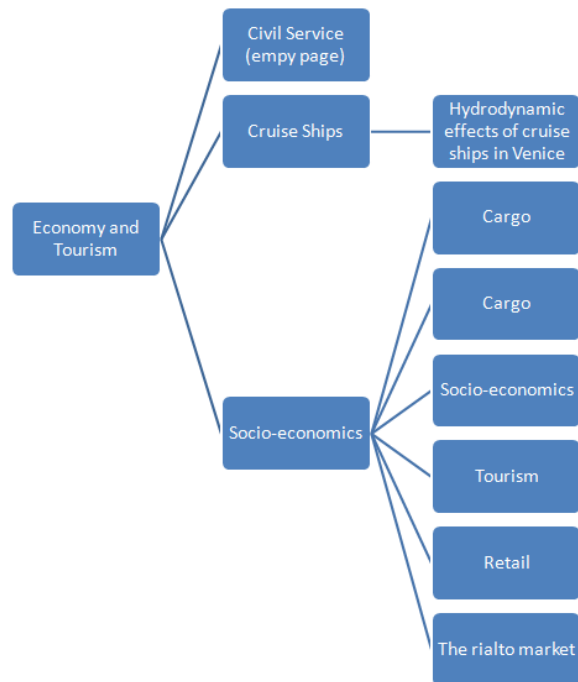


Figure 61. The Economy & Tourism portal had only three categories one of which was completely empty.

### 7.1.3 Institutions

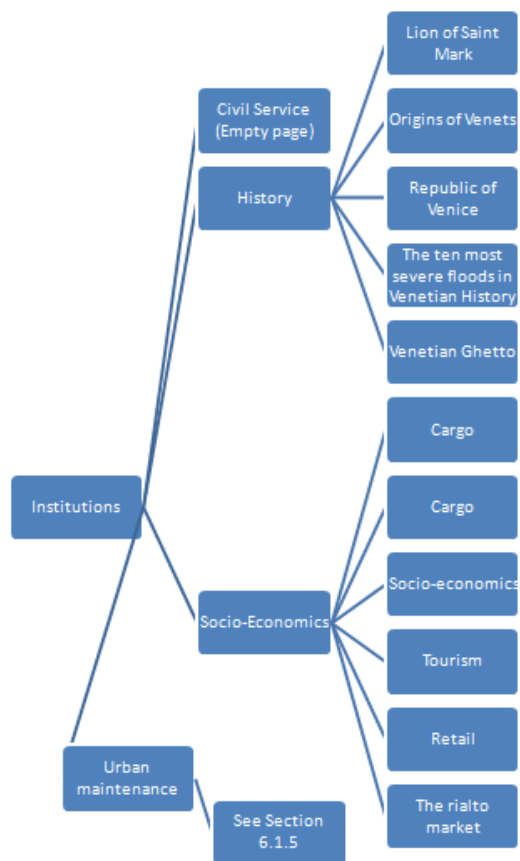


Figure 62. The Institutions portal contained four categories, one of which was empty (civil service), one which simply linked to another portal (urban maintenance) and the other two didn't contain any institution pages at all.

### 7.1.4 History

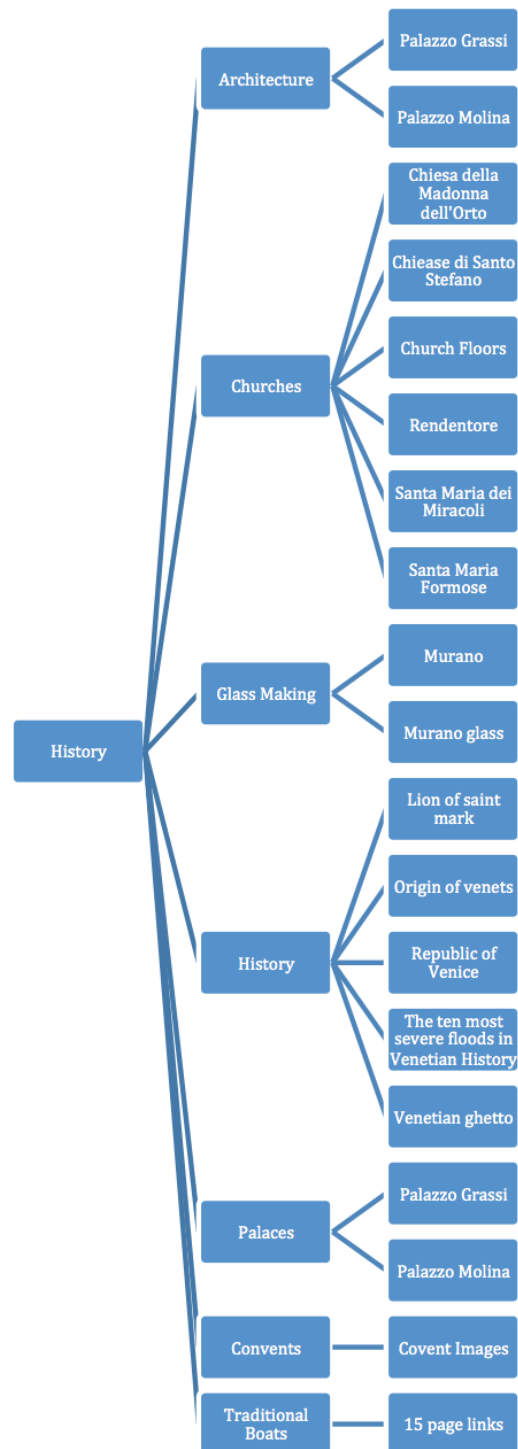


Figure 63. The history portal had 7 categories and was highly unorganized. In fact, the portal even had a category called history as well.

7.1.5 Urban Maintenance

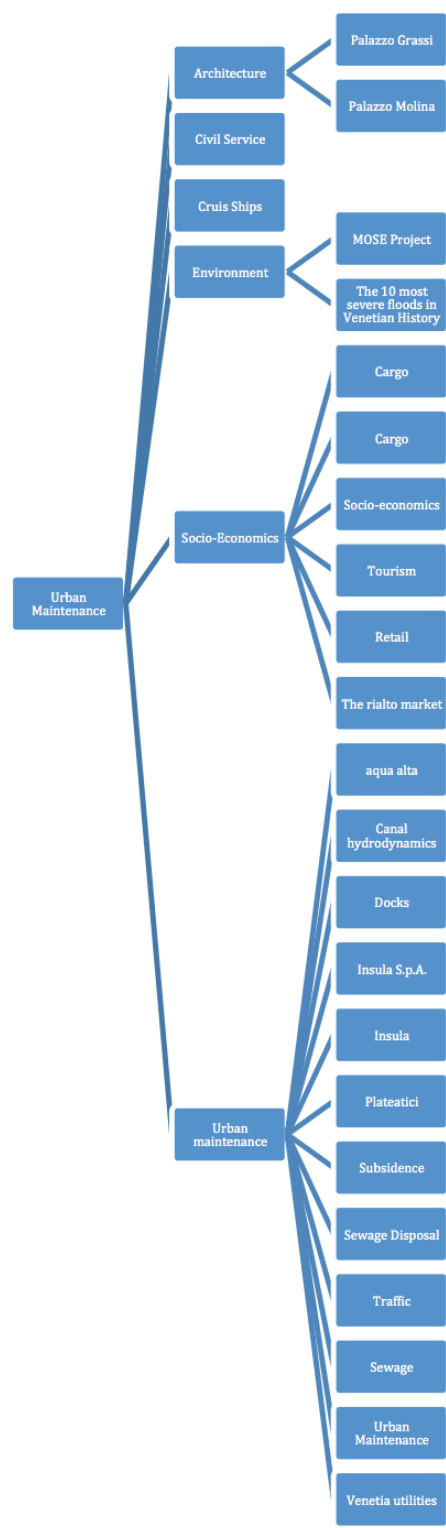


Figure 64. The Urban Maintenance portal spanned into such great depth that it is barely visible in the tree. Essentially, it broke into six categories: Architecture, Civil Service, Cruise Ships, Environment, Socio-Economics and Urban Maintenance. The Civil Servi

7.2 New Venipedia Navigation

As seen in Section 7.1, the portals were often confusing when trying to find any given topic. Additionally, they had multiple layers, which were difficult to comprehend. In its current state, the portals on Venipedia have been simplified by expanding the name into two word topics. The new portals should allow future project data to fall under a portal and therefore avoid having to re-map the Venipedia portals in the future. Figure 67 shows what the main portal topics were as seen on the home page of Venipedia.

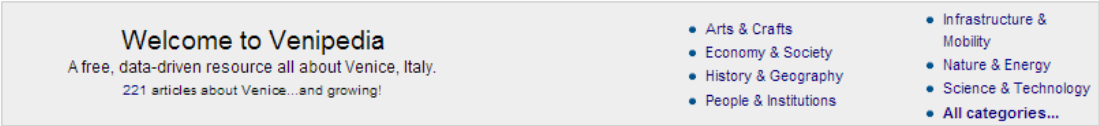


Figure 65. New Venipedia portals are two words.

7.2.1 Arts & Crafts

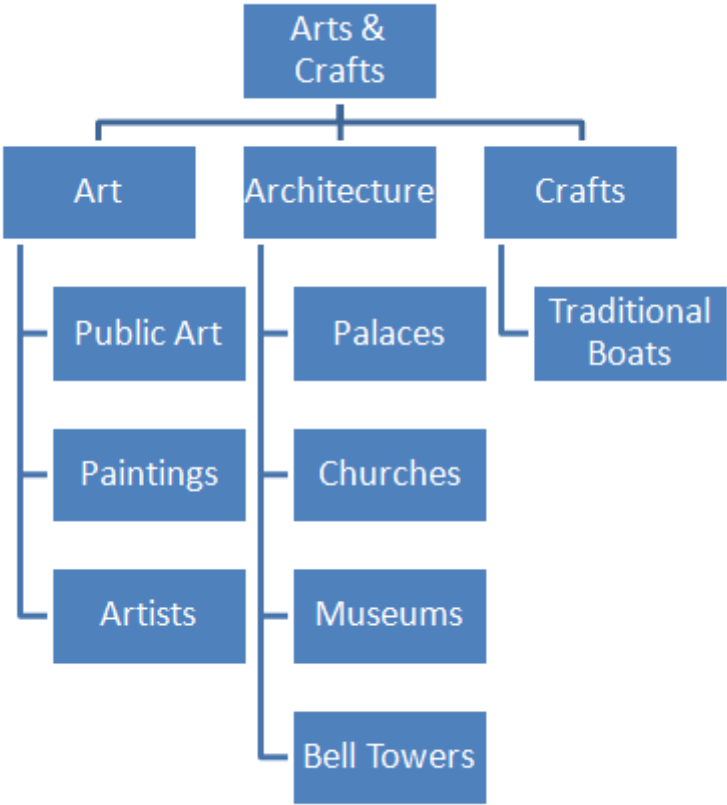


Figure 66. The Arts & Crafts portal encompassed three main categories which were then broken down into subcategories with relevant pages in each one.

### 7.2.2 Economy & Society

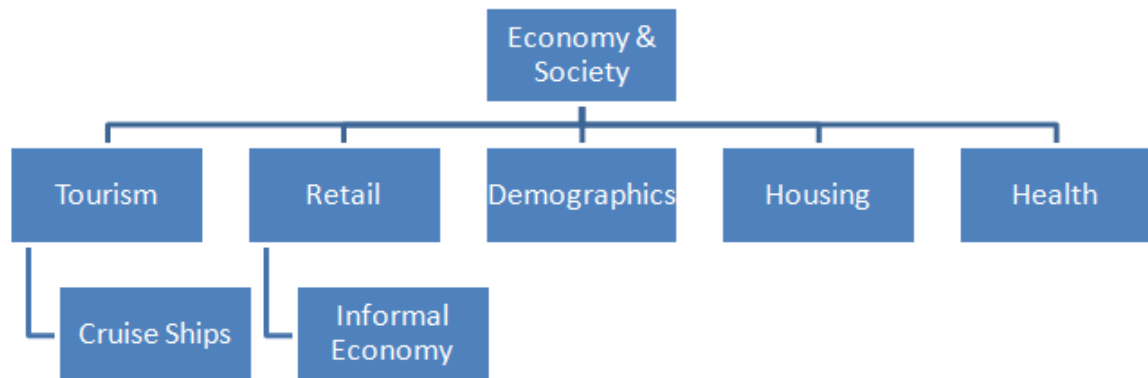


Figure 69. The Economy & Society portal broke down into 5 categories. Tourism was changed from previously being part of the portal to being its own category.

### 7.2.3 History & Geography

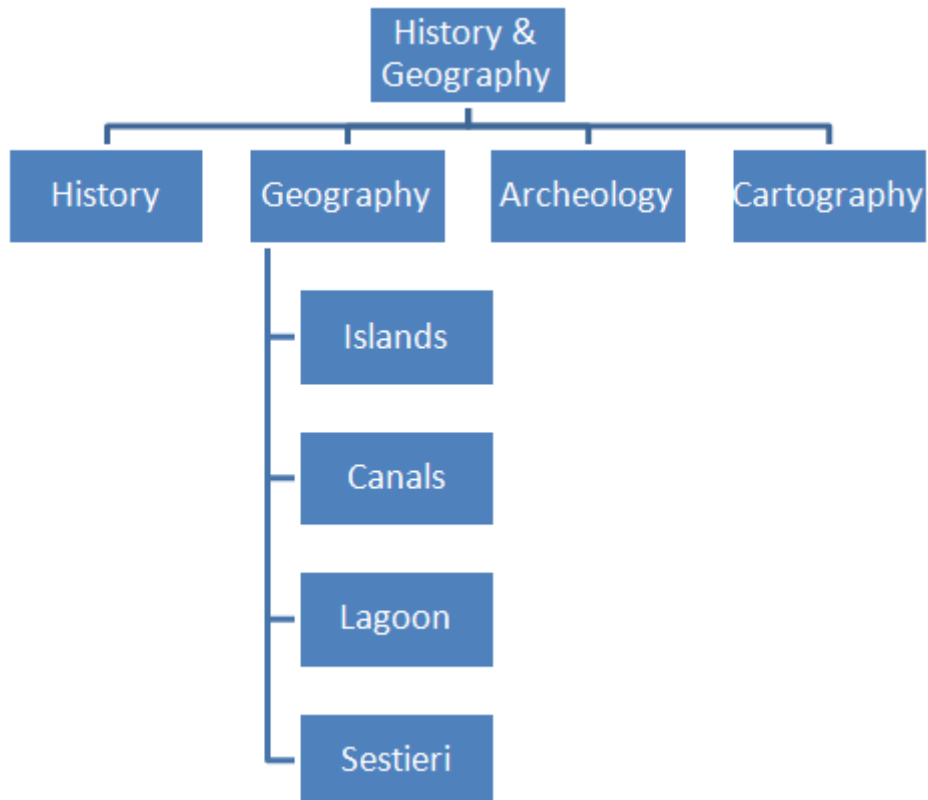


Figure 67. The History & Geography portal expands to break down into history and geography categories but also adds another two categories for topics not only pertaining to one or the other.



#### 7.2.4 People & Institutions

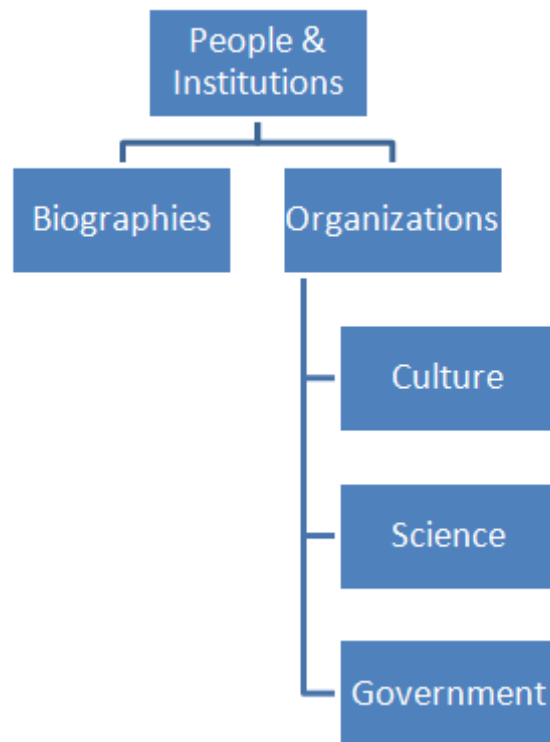


Figure 68. The People & Institutions portal was divided into biographies and organizations mainly so future contributors would have a place to add such articles in which are not data-driven.

### 7.2.5 Infrastructure & Mobility

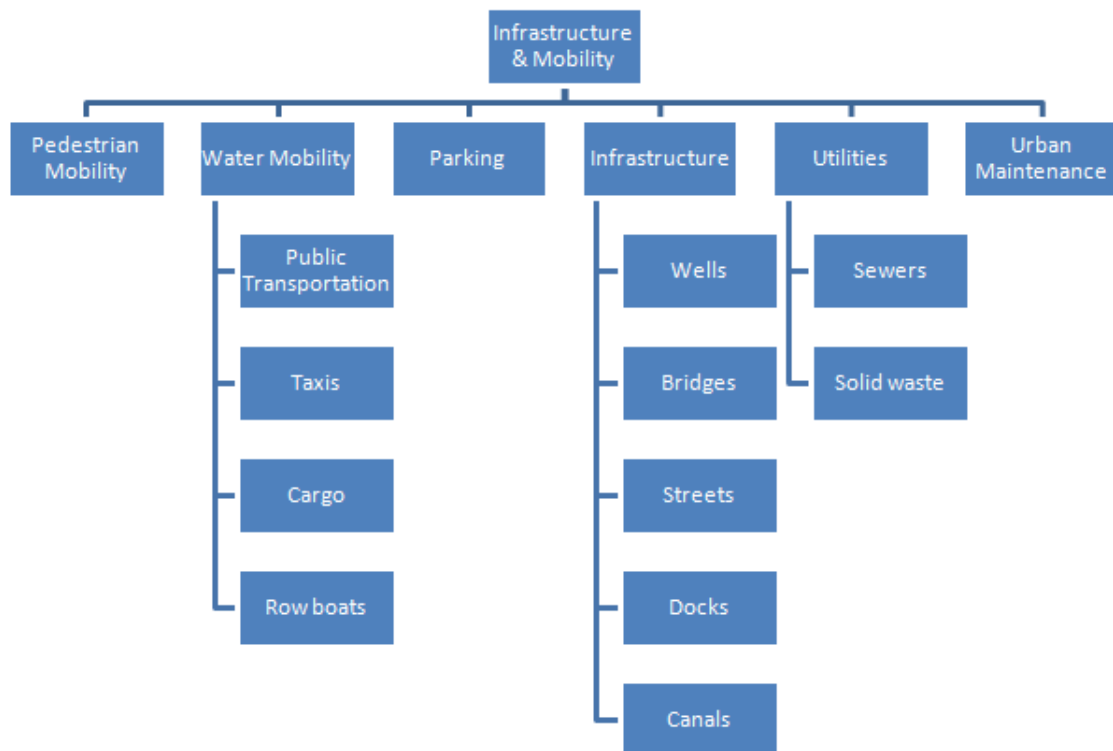


Figure 69. The Infrastructure & Mobility portal was designed to encompass the structure of the city.

### 7.2.6 Nature & Energy

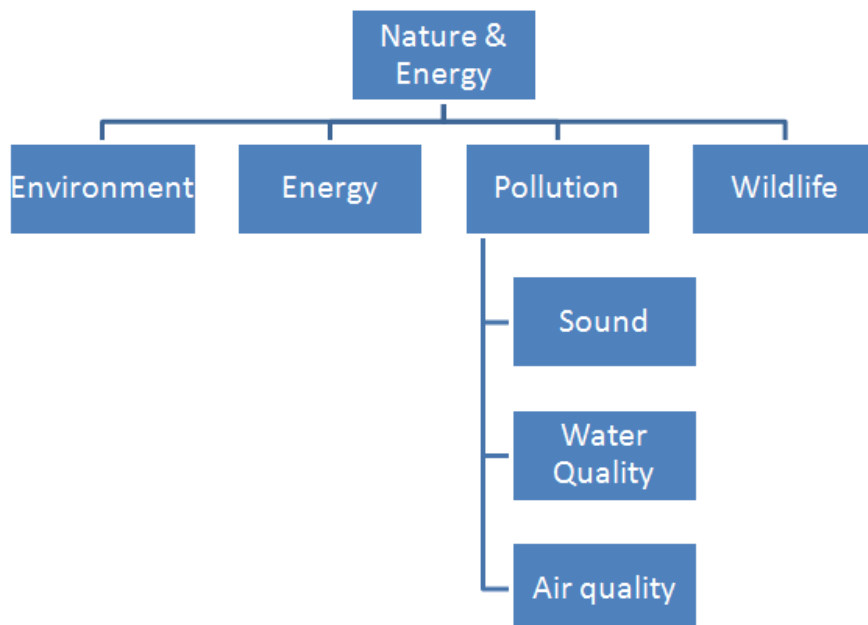


Figure 70. The Nature & Energy portal encompasses environmental aspects and issues along with energy such as pages like solar energy or cogeneration.

### 7.2.7 Science & Technology

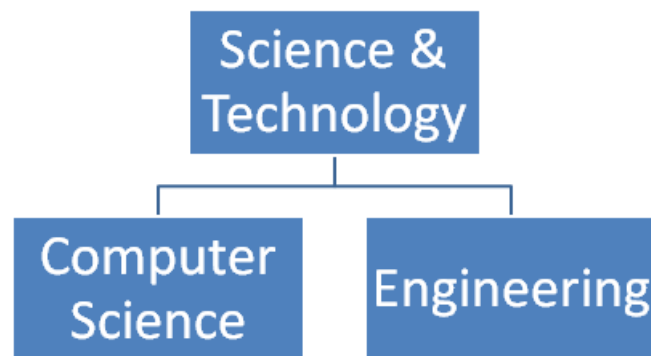


Figure 71. The Science and Technology portal was initiated for those projects which focused on high-tech applications or other topics which did not fit under any of the other portals. This is expected to be an expanding category as well.

Overall, the new portals cover a greater breadth of topics in a comprehensive manner. Additionally, the “All categories” link on the main page was kept so that users could see all categories if they were unsure where they would find their topic.

## 7.3 Data Management

With over twenty years of research conducted through the Venice Project Center, the organization and management of collected data is imperative for the effective implementation of a fully-functional Venipedia site. Databases from the project center are either poorly incorporated in the current Venipedia or stored elsewhere and not in use. A system recently developed by Dr. Fabio Carrera combines the use of Firebase applications and Venice’s City Knowledge Console to automatically generate new Venipedia pages and update pre-existing pages.

### 7.3.1 Introduction to Firebase

Firebase is a dropbox service for a user’s applications and data. Applications built and designed using Firebase allow the user to develop a data structure and to transfer this data to services in connection with his or her Firebase service. Essentially, the service enables the ability to manage web application data with time efficiency. The creators of Firebase have reduced its functionality to the following four core concepts: (1) data synchronizes in real-time; (2) each piece of data has its own unique URL; (3) servers are not needed and (4) applications scale automatically (“How It Works” 2012).

Although additional servers are not required to run Firebase applications (3), developers are still able to run their own programs in conjunction with these applications (“How It Works” 2012). The ability to run other servers with Firebase is mandatory for the effective implementation of Venipedia through Venice’s City Knowledge Console (see 2.4.2.2). Furthermore, the synchronization of data in real-time (1) is a necessary concept for the maintenance and upkeep of Venipedia. It allows any changes or additions to the current data structure implemented within

Firestore to automatically update any collaborative servers, such as the City Knowledge Console (“How It Works” 2012).

### **7.3.2 City Knowledge**

#### ***7.3.2.1 Geographical Information Systems Initiatives***

Urban maintenance of any city requires geo-spatial data. Typically, when planning or managing a particular project, a large amount of time is spent collecting related information by searching records of various city departments. Furthermore, municipal government offices gather administrative data and information that are used for purposes such as revenue-generation or regulatory compliance. All information and data are recorded and stored for their original purpose, perhaps supporting a project or an act, and are not usually treated as reusable for other urban tasks. Since the rise of both technology and the use of personal computers, partakers of urban maintenance have embraced Geographic Information Systems (GIS) (Carrera 2004).

GIS measures concentrate on organizing municipal activities and reducing the duplication of data. The need to manage geo-spatial data and information has led to other initiatives, including National Spatial Data Infrastructures (NSDIs) and Community Statistical Systems (CSS) (Carrera 2004). Dr. Fabio Carrera (developer of the City Knowledge concept discussed in the next section) describes NSDIs as a top-down approach, derived from the national level, as the network is “designed to enable the development and sharing of this nation's digital geographic information resources ([www.fgdc.gov](http://www.fgdc.gov)).” Moreover, he describes CSS as a bottom-up approach, as these systems examine how smaller-scale communities contribute to the development of spatial infrastructure (Talen 1999). Dr. Carrera argues that the aforementioned GIS initiatives make urban data and information available and accessible; however, they do not necessarily provide up-to-date data, or knowledge that can be easily expanded upon (Budic 1994).

#### ***7.3.2.2 The Development of City Knowledge***

In response to the lack of rich and current geo-spatial data needed among the previously indicated GIS efforts for thorough studies and analyses, Dr. Carrera developed a concept called City Knowledge. The notion and purpose of City Knowledge can be condensed into the six foundations that Dr. Carrera has defined: (1) the “middle-out” approach; (2) informational jurisdictions; (3) fine-grained, distributed data management; (4) sustainable updates; (5) information sharing and (6) interagency coordination (Carrera, 2004).

The “middle-out” approach, which is the fundamental basis for Dr. Carrera’s remaining five foundations, integrates the general systematic and standardized top-down approach with the creative and attentive to detail bottom-up approach. After large initial investments, top-down approaches struggle to carry out and maintain municipal operations, such as state-wide or even city-wide projects, at the national level. Top-down efforts typically reject community-specific initiatives that are meant to be conducted at the local level and lack the hierarchical integration that could identify the contributions expected from each level (Sabatier 1986). Bottom-up approaches begin as strong efforts to achieve local urban plans; however, they usually

do not envelop a “single concept”, or proper categorization of what must be completed, and they lack adequate funds for full execution of plans (Kowling 2005). With the combination of top-down and bottom-up approaches, City Knowledge builds databases from the bottom-up, or from self-interest and local support in an urban maintenance department, which are kept organized from the top-down, or at the divisional and level (Carrera 2004).

Ever since Dr. Carrera first envisioned City Knowledge, he has practiced urban studies and maintenance through hundreds of projects in cities around the world, including Venice. The implementation of a platform that exhibits the six foundations distilled from his City Knowledge theory exists today in what is known as the City Knowledge Console. The current version of the City Knowledge console automatically extracts data entered into Firebase (see 2.4.1) and with this data, generates individual wiki pages for publication in Venipedia (Carrera, Fabio. August 24, 2012).

## 7.4 Reinventing the Help Section

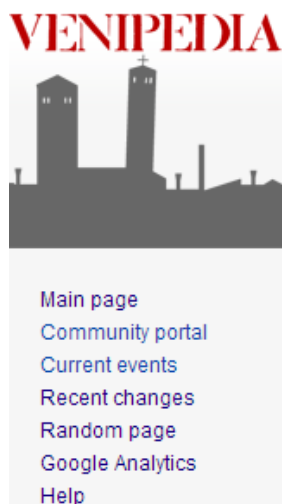


Figure 72. The Help link appears on the main page links-list.

In an effort to aid future contributors in understanding Venipedia’s wiki syntax and the mechanics that drive page creation, we completely remodeled the Help Section. As one of the main links on the Home Page, as seen in Figure 75, we decided that it was of utmost importance to remodel the Help section in a way that would allow users to easily find information, given that the old Help Section was focused mostly on adding data rather than on what

content belongs on Venipedia and how to

properly edit pages, as can be seen in Figure 76. After some discussion, we decided that the overall Help section should be divided into two parts: a mechanics focused “Help:Contents” page and a major concept oriented “Help:About” page.

We began the reorganization by reviewing the old Help section, to see which topics were worth retaining on the Help page, as well as which topics could be moved to the About Page. Eventually we decided to move any information we encountered regarding Venipedia’s content and purpose to the About page, while filtering information regarding Venipedia’s mechanics in a way that would allow users to find Help topics easily without cluttering the



Figure 73. The main headings on the former Help page.

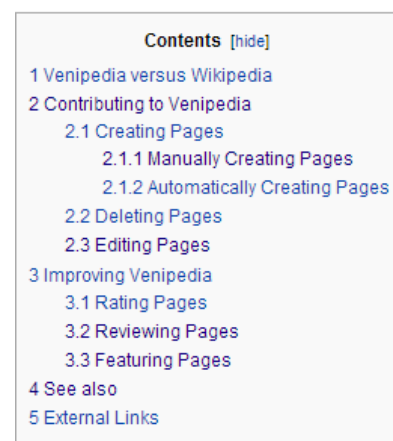


Figure 74. The main headings on the new Help page.

page. Figure 77 shows the Contents Box from the remodeled Help Section, while Figures 78 and 79 show thumbnails of the new Help Page and the old Help Page, respectively.

Beginning with Figure 77, one can see that the contents of the new Help page focus on large scale topics: *Venipedia versus Wikipedia*, which explains the differences and similarities in syntax between Venipedia and Wikipedia; *Contributing to Venipedia*, which explains how to create, delete, and edit pages with links to more in depth information; and *Improving Venipedia*, which highlights how users can rate, review, and feature content in Venipedia. Moving on to Figure 74, although the text itself is too small to read, one can see that the overall layout of the new Help page is more simple in that the page is short and concise, with links to more in depth information on every topic. The old Help page on the other hand contains links, but also specific information, which causes the page to look messy and makes the page hard to navigate.

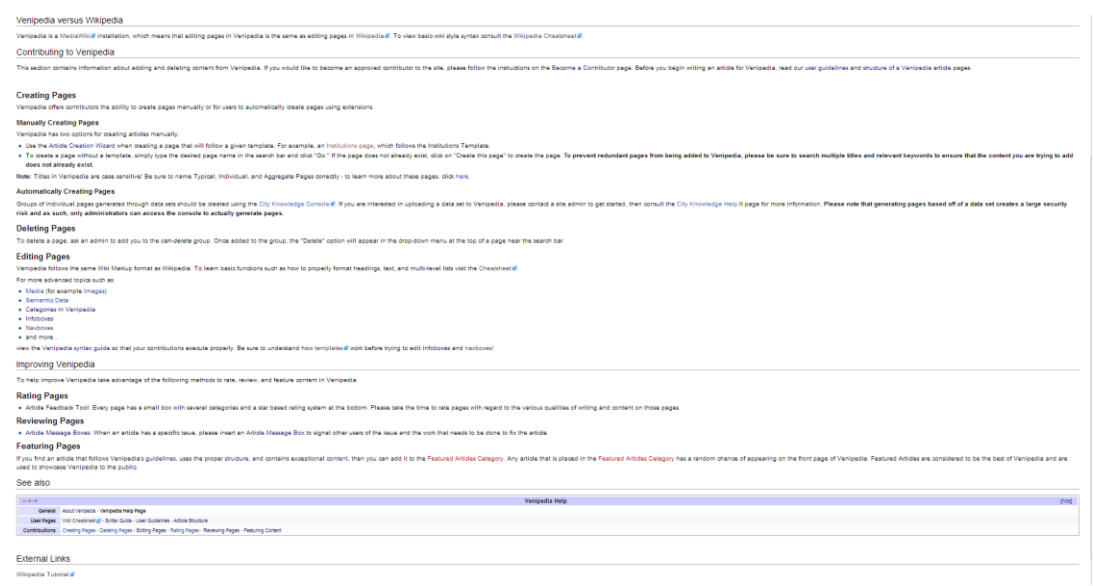


Figure 75. A thumbnail image of the new Help page.

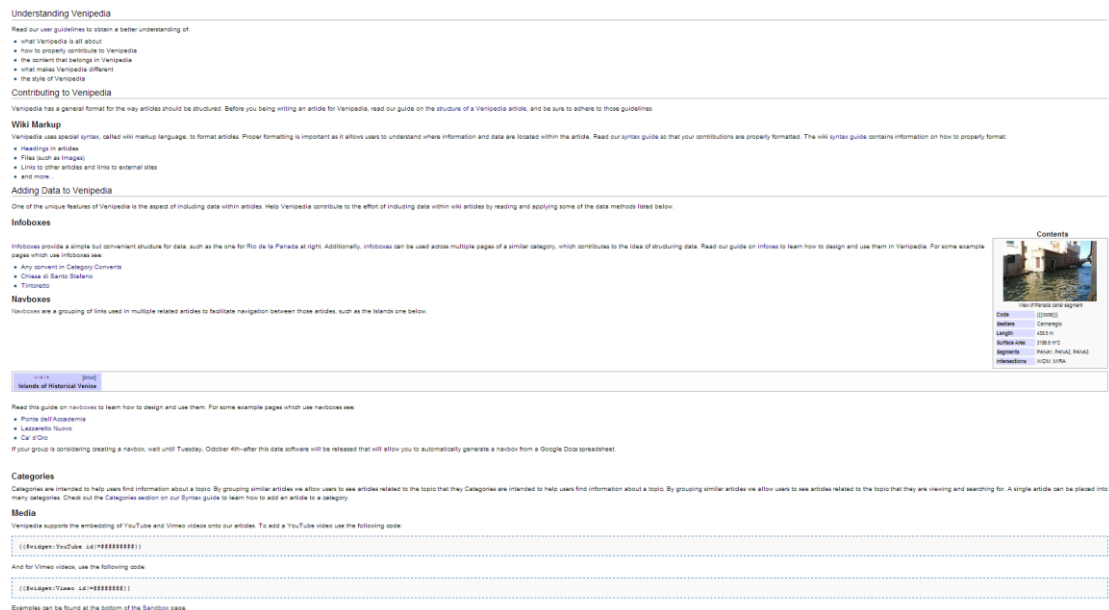


Figure 76. A thumbnail image of the old Help page.

After creating the mechanics oriented Help page, we began planning the About page, which we wanted to contain information about the underlying concepts that drive Venipedia. We settled on the topics shown in Figure 80, which we feel adequately explain Venipedia’s purpose, userbase, approach, rationale, organization, and content.

The overall purpose of the About page is to educate Venipedia’s visitors and users on the ways that Venipedia differs from other websites in regards to specificity and organization of articles, as well as which types of content belong on Venipedia and which types of content don’t belong. The About page itself utilizes many article hyperlinks to show readers examples of exceptional articles and content in Venipedia

Contents [hide]
1 Venipedia's Purpose
2 Venipedia's Userbase
3 What Makes Venipedia Different
4 What Venipedia Is Not
5 Why Venipedia?
6 Venipedia's Organization
6.1 Typical Pages
6.2 Individual Pages
6.3 Aggregate Pages
6.4 Categories and Portals
7 Venipedia's Content
7.1 Desirable Content
7.2 Undesirable Content
8 The Future of Venipedia: Growth and Development

Figure 77. The main headings on the About page.

such that contributors can model their edits to uphold Venipedia’s page quality.

In a final effort to make the overall Help section, including both the Help:Contents (mechanical page), Help:About (concepts page), and lower level pages with more specific information, we created a navigation box to allow Venipedia users to jump from page to page to make finding specific topics simple and more accessible. The navigation box is shown below in Figure 81.

v • d • e		Venipedia Help	<a href="#">[hide]</a>
General	About Venipedia • Venipedia Help Page		
User Pages	Wiki Cheatsheet <a href="#">[?]</a> • Syntax Guide • User Guidelines • Article Structure		
Contributions	Creating Pages • Deleting Pages • Editing Pages • Rating Pages • Reviewing Pages • Featuring Content		

**Figure 78.** The navigation box for the Help section.

The Navigation Box contains three lists: General, User Pages, and Contributions. We organized the navigation box into these categories to allow users to view the more general page links first, with more specific links below. Organizing from less specific to more specific allows users to see the overall breakdown of the Help section as a whole, as well as encourages users to read more general pages before trying to understand specific ones.

The result of our reinvention of the Help section was an entirely reorganized and revamped group of pages that provide Venipedia users with clear and concise information on all of the help topics that one may want to learn about in Venipedia. Furthermore, the new Help section provides a clear and understandable page for new visitors to learn about the underlying concepts that drive Venipedia in the form of the About page.

## 7.5 The Article Wizard Tool for Simple Page Creation

At the bottom of the main page of Venipedia, there is a button labeled “Contribute!” (Figure 82). Clicking this button leads users to the new article wizard. The first step in the article wizard (Figure 84) basically welcomes the user to the article wizard and refers the reader to the Help section if they are looking for technical details or to the About page if they are looking to learn more about why the site was created and what its purpose is for.



**Figure 79.** The contribute button on the main page.



## Article wizard

1. Introduction2. Subject3. Notability4. Sources5. Content6. End

Welcome to the Venipedia Article Wizard! This wizard will help you through the process of submitting a new article to Venipedia. There are 6 sections to step through, and then you'll be taken to the editing page. As each section is completed, the next will become available. Please remember that in order to create a page, you need to be a registered user!

If you have questions at any point, please reference the Venipedia [help section](#). Please remember that we are a unique wiki concerned with only subjects related to Venice, Italy. The administrators for this non-profit site are volunteers so please ensure your article is a relevant subject. Thanks!

Are you ready to create an article?

I am new to Venipedia

I am an advanced user

Basics of editing



It's **highly recommended** that you thoroughly review the [help section](#) on Venipedia before you attempt to create an article. We encourage contributions but only those that are relevant to Venice, Italy and are correctly formatted.

To learn more about what makes Venipedia unique please [click here](#). To understand what subjects may be a conflict of interest [click here](#).

Figure 80. The introduction ensures that the new users understand they must become a registered user before they can create a page and suggests that they reference the “Help” section if they have any technical questions along the way.

Clicking “I am new to Venipedia” outlined in red on Figure 83 above, will lead to Figure 84 below.

### Venipedia:Article wizard/Subject

1. Introduction2. Subject3. Notability4. Sources5. Content6. End

Register to become a user

Please remember that in order to create an article you must be a registered user.

Is the subject already covered?

Venipedia has 197 articles covering as many possible subjects relevant to Venice, Italy. **The subject you're thinking of may already be covered** under an alternate spelling, capitalization, or transliteration; or simply under an alternative name or expression. To avoid duplicating effort needlessly, make sure you've searched thoroughly for alternate titles. (If you find your subject is already covered under another title, your proposed page title might usefully be redirected there – see [Redirect](#)).


Another **requirement** for Venipedia pages is that the pages do **NOT** duplicated articles already created in Wikipedia. If Wikipedia has a good article on the topic you wish to write about, we suggest that you ask Wikipedia to help edit that article rather than adding the page to Venipedia.

*If you haven't already done so, search in the top right corner of the page to see if your subject is already covered. Also make sure to search [Wikipedia](#) to verify that they do not already have an article on the subject.*

My proposed article already exists under a different name

Does the subject meet guidelines for inclusion?

Did you know?



Venipedia has a unique set of standards that define what subjects warrant pages within the site. Pages that are irrelevant will be deleted quickly. The Venipedia administrators have created many guidelines for suitable article topics and to help ensure that your page will not be deleted. Please follow this wizard carefully.

Please do not submit articles that are about:

- yourself, your company or organization (unless your company is operating in or for Venice).
- your friend, your band, or your website.
- your vendettas or campaigns.

Remember, the people who review submissions are just volunteers who give up valuable time in order to review your submission.

What is your proposed article about?

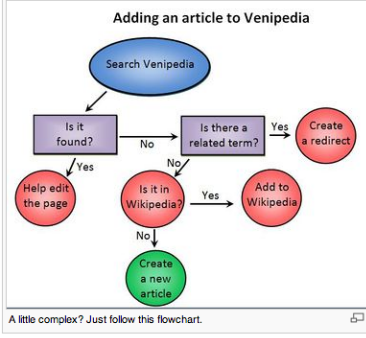
To continue, click on one of the options below:

I'm writing about a company, organization or foundation

I'm writing about myself

I'm writing an article about something else

Adding an article to Venipedia



```
graph TD
    Start([Search Venipedia]) --> Found{Is it found?}
    Found -- Yes --> Edit([Help edit the page])
    Found -- No --> Related{Is there a related term?}
    Related -- Yes --> Redirect([Create a redirect])
    Related -- No --> Wikipedia{Is it in Wikipedia?}
    Wikipedia -- Yes --> AddWiki([Add to Wikipedia])
    Wikipedia -- No --> CreateNew([Create a new article])
```

A little complex? Just follow this flowchart.

Figure 81. Subject section of the article wizard.

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The page on “Subject” ensures that users understand the Venipedia policy on what topics should and shouldn’t be written about. Essentially, articles that already exist on Venipedia or Wikipedia should not be created again. Figures below outline the various steps that a user could take from this point.

Clicking “**My proposed article already exists under a different name**”

## Venipedia:Article wizard/Redirect

Redirects are used to point one article to another, effectively giving a single article several names. Reasons to use a redirect include:

- Common abbreviations (B&B redirects to **Bed and Breakfasts**)
- Alternate names (**Boatbuilders** redirects to **Squerarioli**)
- Accents (Arzana redirect to Arzanà)
- Multiple spellings (Colonnina redirects to Colonnine)

To complete a redirect:

- 1) Type the title of the page you want to redirect into the Search bar
- 2) If the page name does not exist, click to create the page
- 3) Insert the code #REDIRECT followed by the title of the page you think should also be associated with the page

Figure 82. The Redirect page explains what a redirect is and how to properly use it.

Clicking “**I am writing about a company, organization or foundation**”

## Venipedia:Article wizard/Company notability

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	6. End
-----------------	------------	---------------	------------	------------	--------

Very few companies and corporations are suitable for inclusion into Wikipedia. There are millions of companies in the world but only a minute percentage of these companies are considered notable enough to be considered for inclusion into Venipedia.

In order to be included in Venipedia, the company **must**:

- be based in Venice, Italy OR
- conduct projects pertaining to Venice, Italy

Pages fitting this category are often Institutions that work in or for Venice. To get an idea of what an Institution page encompasses, review the various institutions listed under the institutions portal.

**Conflict of interest/advertising**

Please remember that encyclopedias aim to write from a neutral point of view. If you are closely associated with the institution you wish to write about, keep in mind that lengthy articles or trivial information will be deleted from your pages. Additionally, the goal of the page is **NOT** to advertise your institution. Links to your webpage and to becoming a member are acceptable; however, any other forms of advertising will be deleted and can potentially affect your abilities to add future pages.

**Does your proposed article meet the requirements?**


 **My proposed article meets the defined criteria.**

Figure 83. Company notability ensures that users are not simply writing for advertising purposes.

Clicking “**I am writing about myself**”

## Venipedia:Article wizard/Conflict of interest

### Thank you for using the Article Wizard!

Unfortunately writing an article about yourself (or someone or something very close to you) does not follow the Venipedia guidelines for what types of articles are acceptable. The main problem with submitting articles of this type is that it is hard to remain in a neutral point of view.

Part of what makes encyclopedias unique is that they present unbiased facts; therefore, a page on yourself is not suitable for this type of website.

We encourage you to read the article in Wikipedia concerning general [conflicts of interest](#). If the subject matter really merits an entry, then sooner or later an administrator will create one. Therefore **we would encourage you *not* to create the article yourself**. If you have a different article in mind, please return to the Article wizard.

Figure 84. “I am writing about myself” is considered a conflict of interest as it is not relevant to Venipedia and therefore is invalid.

## Clicking “I am writing about something else”

### Venipedia:Article wizard/General notability

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	6. End
-----------------	------------	---------------	------------	------------	--------

**Venipedia is an online encyclopedia.** This means that by its very nature, items in Venipedia have to be notable enough to be considered encyclopedic. As an additional requirement, the topic **MUST** be related to Venice, Italy.

A topic is notable if it has been the subject of multiple, non-trivial published works from sources that are reliable and independent of the subject itself and of each other. The requirement for proper page content exists to ensure that the article is verifiable and encyclopedic for a given topic.

**What makes a good article**

To gain a better understanding about the notability criteria specifically for Venipedia, see the article on *what makes Venipedia unique*. For general questions on what makes an article encyclopedic, please see the Wikipedia page which follows the same general standards.

---

**Does your proposed article meet the notability requirements?**

☒ My proposed article is about a notable and encyclopedic subject

Figure 88. This page outlines the general notability standards for Venipedia.

Assuming that one is writing about a notable topic, whether they clicked that they are writing about a company or clicked that they are writing about something else, by clicking “My proposed article is notable,” the wizard will continue to the next step shown in Figure 89 below.

## Venipedia:Article wizard/Sources

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	6. End
-----------------	------------	---------------	------------	------------	--------

**Information on Venipedia must be reliable and verifiable.**

Facts, viewpoints, theories, and arguments may only be included in articles if they have already been published by reliable and reputable sources. Sources should have a reputation for fact-checking and accuracy, and be independent of the subject. Citing sources is one of the core elements of Venipedia and is a policy for every article on Venipedia. Any unsourced material may be challenged and removed. Sources should also be appropriate to the claims made; for example, outlandish claims need very strong sources. If you're not sure if your sources are good enough, explore the types of sources used on other Venipedia pages.

Note: *other Venipedia articles are not reliable sources* (though you can of course copy relevant sources from other Venipedia articles).

**Good sources**

1. have a reputation for reliability: Venipedia follows a similar policy to Wikipedia on this subject matter, for more information, please see the Wikipedia article on [identifying reliable sources](#)
2. are independent of the subject
3. are verifiable by other editors: again, Venipedia follows a similar policy to Wikipedia on sources considered verifiable, see the Wikipedia article on [verifiable sources](#)

If your article does not cite reliable, *independent* sources, it may be deleted.

**Does your proposed article have good sources?**




Figure 85. The “Sources” page explains how every article needs credible sources. The page gives a glimpse at examples of good and bad sources and how to reference sources in an article.

### Clicking “My proposed article has good sources”

## Venipedia:Article wizard/Content

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	6. End
-----------------	------------	---------------	------------	------------	--------

**Your article submission must not violate copyrights.**

**Do not copy and paste text**, unless it is a properly attributed and sourced quotation. Articles violating copyright will be deleted. If you're considering uploading an image for the article and you've not done so before, you might want to wait a few days to get input from others on your article. Relevant, illustrative images are great, but if you didn't create the image yourself, this may lead to copyright issues. Any photos existing on Venipedia can be found in the File namespace and are suitable for use. If you choose to upload an image, make sure to provide references for the image as well.


**Your article should also establish notability.**

On a previous page, you were given guidelines on what makes your subject notable enough to merit inclusion in Venipedia. Be sure that by the time the reader finishes reading your article, they will understand why the subject is notable.


**Your article must be neutral in its tone.**

Articles in Venipedia strive to adhere to a [neutral point of view](#), meaning that it neither is “for” nor “against” any particular subject matter. While properly cited praise or criticism of the subject is perfectly acceptable, your article should approach it from a neutral tone. Just write about facts — it is fine to include the fact that somebody else has published an opinion, but do not write about your own. Articles must represent all significant views fairly, proportionately, and without bias. Articles that only attack their subject may be deleted, and articles that serve only to praise a subject may be deleted or radically edited by others seeking a neutral tone.

**Does your article submission meet the content requirements?**



**Copyright**

 As a general rule, **NEVER COPY-PASTE TEXT FROM OTHER WEBSITES**. (There are a few limited exceptions, and adding a few words as part of a properly cited and clearly attributed quotation is OK.)

- Venipedia follows the same [copy-paste policy](#) as Wikipedia








Figure 86. The “Content” page essentially ensures that users understand that copying and pasting directly from a preexisting source is considered plagiarism and should not be done.

### Clicking “My submission is neutral, established notability, and is not copy-pasted from anywhere else”

## Venipedia:Article wizard/Ready for submission

1. Introduction	2. Subject	3. Notability	4. Sources	5. Content	6. End
-----------------	------------	---------------	------------	------------	--------

You are ready to go!

-  Create an Institution Page
-  Create a Project Page
-  Create an Art Page
-  Create a History Page
-  Create an Economy & Tourism page
-  Create a Mobility Page
-  Create an Infrastructure Page

Don't forget to hit the  button when you are done editing - otherwise your submission will be gone!


Figure 87. The final step in the wizard asks the user what type of article he or she desires to create.

The final step asks what kind of page the user wants to create. The options are based on the portals in Venipedia and essentially by clicking any of the options, the page will be directed to specific categories and further entering the title of one's desired article. After submitting a title, a template with instructions will be generated automatically and all the user will need to do is fill in the template and save the page. This simple process should ensure more quality contributions.

# 7.6 Full Crosses Page

This is documentation for the full crosses article which is one of the featured articles.

VENIPEDIA



Main page

Community portal

Current events

Recent changes

Random page

Google Analytics

Help

▼ Toolbox

What links here

Related changes

Special pages

Printable version

Permanent link

Browse properties

Rate this page

Page

Discussion

Read

View source

View history

Search

Go

Search

Crosses

This page is an overview of all the crosses in Venice.

For a typical cross, see Cross.

The cross (in Italian *croce*) is a religious symbol found throughout Venice and is a type of public art. Throughout the history of Venice, religion has played a significant role in the city, yet, despite the large number of churches, relatively few crosses decorate the city when compared to other examples of Venetian material culture.

Contents [hide]

1 Statistics

2 Damage and Preservation

3 Location


4 See Also

5 References

6 Bibliography

7 External Links

Crosses

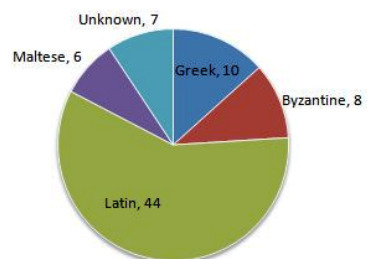


Total Number	74
Total Number Missing	2
Latin Crosses	44
Greek Crosses	10
Byzantine Crosses	8
Maltese Crosses	6

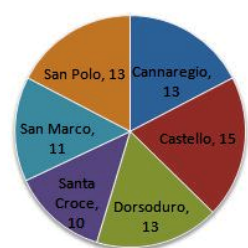
Statistics

- The oldest Venetian cross can be found in Cannaregio and dates from 850 AD.
- The most recent cross can be found in Castello and dates from 1700 AD.
- The cross in the most need of restoration is located in Cannaregio and dates from 1050 AD.

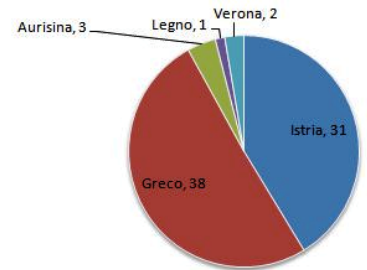
Crosses by Type



Crosses by Sestiere



Crosses by Material



Damage and Preservation

For general information pertaining to the sources of damage to Venetian crosses, please see the Damage to public art page.

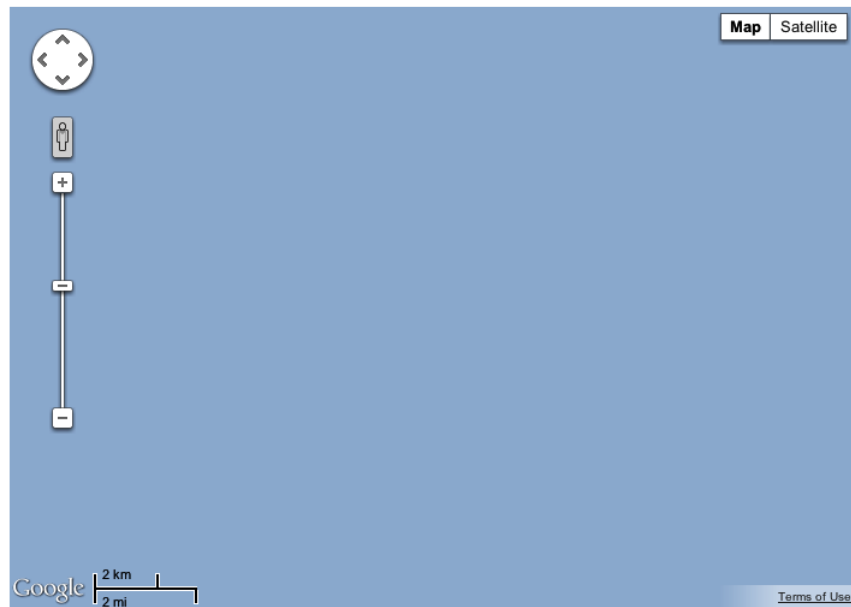
For general information pertaining to the restoration and preservation of Venetian crosses, please see the Restoration and preservation of public art page.

Specific information regarding the damage and restoration needs of each cross can be found on the pages dedicated to each individual cross, as listed in the map below and in the navigation box under the "See Also" section of this page.

Location

57

## Location



## See Also

<a href="#">v · d · e</a>	<b>Crosses</b>	<a href="#">[show]</a>
<a href="#">v · d · e</a>	<b>Material Culture</b>	<a href="#">[show]</a>

## References

NULL

## Bibliography

- Rizzi, Alberto. "Scultura Esterna a Venezia." Stamperia di Venezia Editrice, 1987.
- 2010 WPI PreserVenice Project Team [↗](#)
- 2008 WPI PreserVenice Project Team [↗](#)
- 2007 WPI PreserVenice Project Team [↗](#)
- 2000 WPI PreserVenice Project Team [↗](#)

## External Links

- [www.preserv Venice.org](http://www.preserv Venice.org) [↗](#)
- [www.venice2point0.com](http://www.venice2point0.com) [↗](#)

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★ ★ ★ ★ ★

★ ★ ★ ★ ★

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Figure 88. Crosses Page, please note map was zoomed out.