



# Mom-O-Meter A self-help pregnancy Android App

Evan Duderewicz (MIS), Brendan Harris (MIS), Thomas Jenkins (MIS),  
Ken Miyauchi (MIS), Michael Ng (MIS)

Advisor: Professor Bengisu Tulu(School of Business) & Professor Emmanuel Agu (CS)



## ABSTRACT

The goal of this project was to develop a self-help Android application to aid pregnant women in achieving healthy weight gain during pregnancy. Using a Scrum agile software development approach, the team gathered requirements, designed, and implemented a smartphone application utilizing the Android and Google Health platforms. This application empowers women to take their health into their own hands, reducing short-term and long-term health risks associated with gestational weight gain for both mother and child. This application is an example of continued advancement of mobile technologies in healthcare, which drives the shift from a reactionary to preventative treatment paradigm.

## BACKGROUND

The progression of technology has facilitated an increased use of mobile devices. Smartphones are now capable of many tasks, allowing many people to work wherever there is cellular service. Mobile technologies have also influenced the healthcare industry, allowing a drastic increase in the ability for doctors to provide the best care to their patients at a relatively low cost. The next step for mobile, specifically smartphone, systems is to empower patients. By keeping the patient at the center of the treatment of a disease, we can begin to shift to a preventative medical system, instead of the reactionary system we have today.

One particular area where mobile technologies could offer great value within healthcare is in the obstetrics and gynecology field. The Institute of Medicine (IOM) released updated gestational weight gain guidelines in 2009 which are generally accepted by medical professionals. The IOM noted that many women who had a pre-pregnancy Body Mass Index in the normal, overweight or obese categories will exceed the recommended weight gain without an intervention. Normal weight and especially underweight women are also at risk to under gain. This gain can be controlled with recommended nutrition and exercise, but requires commitment by the patient. Currently, the intervention process is done through paper and physical meetings between the physician and the patient. This process is resource intensive and inefficient. Exceeding the weight gain guidelines poses many health risks to the mother and child during and after pregnancy, resulting the need for an improved system to fill the gap and empower the patient.

	Normal Weight	Overweight	Underweight
Above target	4.3%	24.1%	-
Below target	10.4%	-	51.2%

Percentage of women who under/over gain during pregnancy

## PROJECT GOALS & OBJECTIVES

Use mobile technology to improve:

Improve availability of information	Automate manual processes	Reduce strain on patient and provider	Increase motivation and adherence to guidelines
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Our Solution: Mobile Self Help Tool

Self-care	Timely feedback	Instant access to information	Customization
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Weight provides :  
1. Overview of weight gain, is it in the recommended ranges?  
2. Details of weight gain shows a line graph of weight gain by week  
3. Input allows for weight to be input by lbs. or kg

Food provides:  
1. Nutrition overview – Are the recommended amount of fruits/vegetables being consumed?  
2. Week by week detailed view of average calorie consumption  
3. Meal input



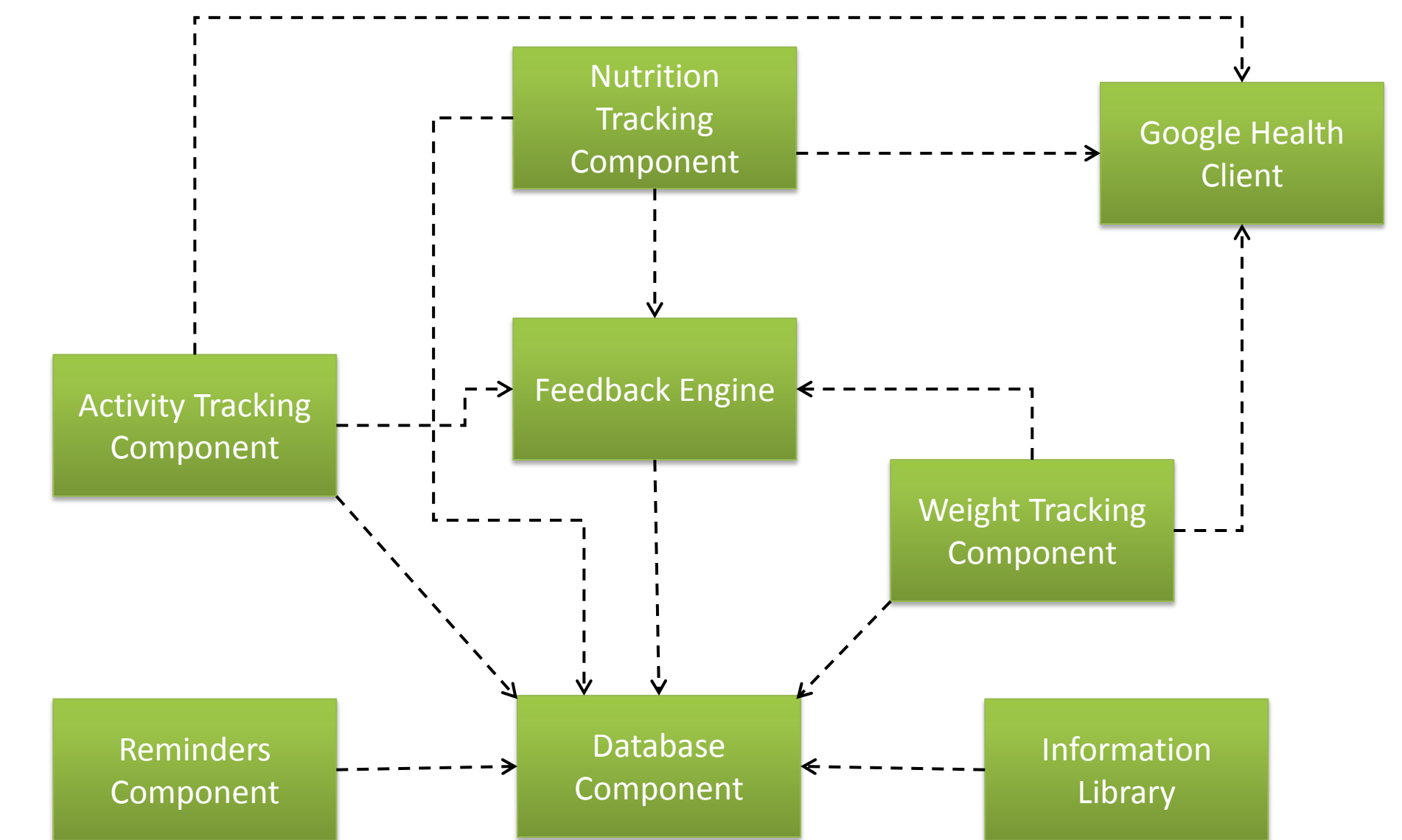
Reminders are used to configure notifications to input activity, food intake and weight.

Activity provides:  
1. Overview of active vs. sedentary time  
2. A review of activity and exercise for each week  
3. Input of activity and exercise

The profile screen allows the user to review their personal information and the application disclaimer.

The progress screen is for reviewing activity, weight and food intake progress all at once

## IMPLEMENTATION



## RESULTS & CONCLUSIONS

- Developed a fully functional Android application
- Developed measure to assess general acceptance of application usability and design
- Conducted focus groups and interviews to generate feedback, future development possibilities and recommended changes
- Built the framework for a more comprehensive pregnancy application

## RECOMMENDATIONS

- Further test the application to evaluate the effectiveness (i.e. clinical trials)
- Expand feature set
- More customizable
- Wellness data reports
- Integration with provider information systems
- Evolve the nutritional component
- Turn into a more comprehensive pregnancy application

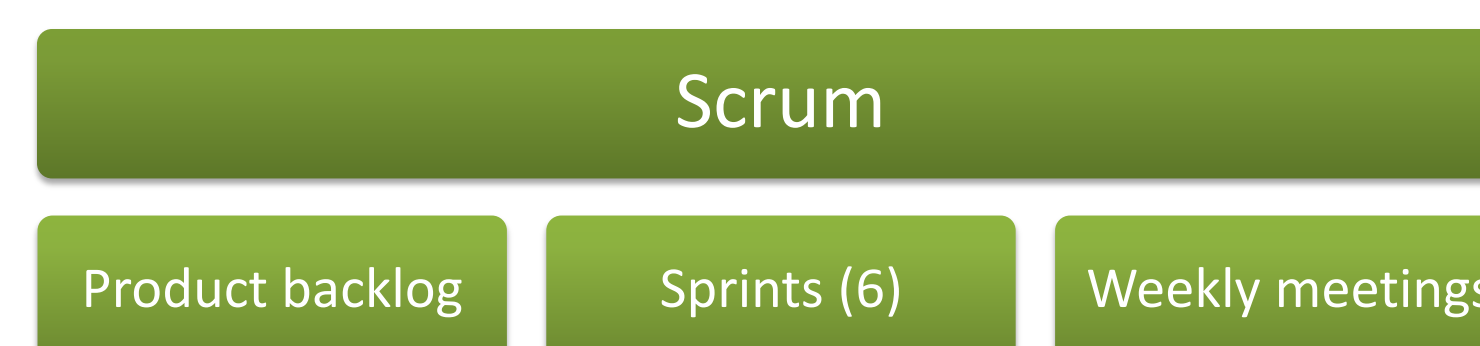
## ACKNOWLEDGEMENTS & REFERENCES

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## METHODOLOGY

Software Development Methodology:



Evaluation methodology:

