

Diet Logging Mechanism

**Team Members: Natasha Benkovich, Kaitlin Brendel,
Aaron Freis, Matt Hoffman, Vincent Mi**

**Client: Walter Block
Advisor: Mitchell Tyler**

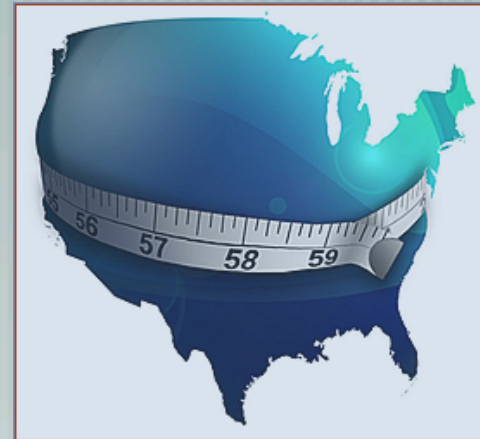
Background

— [Obesity is a big problem in the U.S. — leads to:

— Cardiovascular disease

— Diabetes

— Cancer



— [Approx. 60 million Americans are obese (BMI > 30) [CDC]

— [National obesity rate is continuing to climb despite growing awareness on the issue

Dieting



— [\$40 billion a year industry in the United States [Business Week]

— [We are all familiar with a multitude of weight loss products and companies

— [Most diet programs advocate some type of diet logging

— [Diet logs vary from a simple notepad and pen to advanced digital logs



Electronic Diet Logs

Require exact quantities

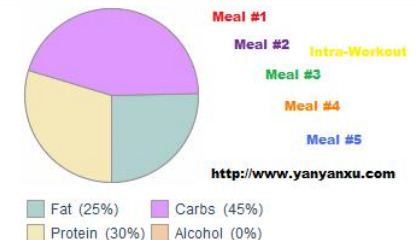
Attempt to provide complete nutritional information

Time consuming

Extreme dedication required

Food Name	Amount	Unit	Cals	Carb	Fat	Prot
Total			3,504	391.8	100.5	256.9
ON Whey	1	serving	120	3.0	1.0	24.0
Milk, 2% fat	12	fl oz	183	17.1	7.2	12.1
Cereals, QUAKER, Quick Oats, Dry	1	cup	297	54.5	5.5	11.0
Peanut butter	2	tablespoon	188	6.3	16.1	8.0
Chicken, breast	4	oz, boneless, cooked	222	0.0	8.7	33.5
Pasta, fresh-refrigerated, plain, cooked	8	oz	299	56.8	2.4	11.7
Spinach, raw	1	cup	7	1.1	0.1	0.9
Apple, raw	1	medium (2-3/4" dia) (approx 3 per lb)	72	19.1	0.2	0.4
PW + GM + BG + WPH + MD	1	serving	164	28.2	0.0	14.0
Rice, white, medium-grain, raw, enriched	0.78	cup	548	120.7	0.9	10.1
Beef, round, knuckle, tip side, separabl...	0	oz	0	0.0	0.0	0.0
Pork chop	8	oz, boneless, cooked	568	0.0	33.0	63.3
Milk, 2% fat	12	fl oz	183	17.1	7.2	12.1
ON Casein	1	serving	120	4.0	1.0	24.0
Banana, raw	0	medium (7" to 7-7/8" long)	0	0.0	0.0	0.0
Tangerine, raw	0	small (2-1/4" dia)	0	0.0	0.0	0.0
Granola bar, chocolate-coated	0	Quaker Oats Dipp	0	0.0	0.0	0.0
Orange TRIad	1	serving	0	0.0	0.0	0.0
Egg, whole, raw	3	large	214	1.2	14.9	18.9
Spinach, raw	1	cup	7	1.1	0.1	0.9
Bagel	122	grams	314	61.6	2.0	12.2
Total			3,504	391.8	100.5	256.9

	Grams	Calories	%-Cals
Calories	3,504		
Fat	100.5	893	25 %
Saturated	24.4	307	9 %
Polyunsaturated	16.1	141	4 %
Monounsaturated	38.1	338	10 %
Carbohydrate	391.8	1,583	45 %
Dietary Fiber	18.9		
Protein	256.9	1,044	30 %
Alcohol	0.0	0	0 %



Problem Statement

College students have poor eating habits

Diet logging is an effective method to eat well

Problems with current diet logs

Low compliance

Inaccurate

National Institute of Health (NIH) Grant



PDS Summary

College-aged adults (approx. 18-24 years)

Readily available device or application

Michael Pollan

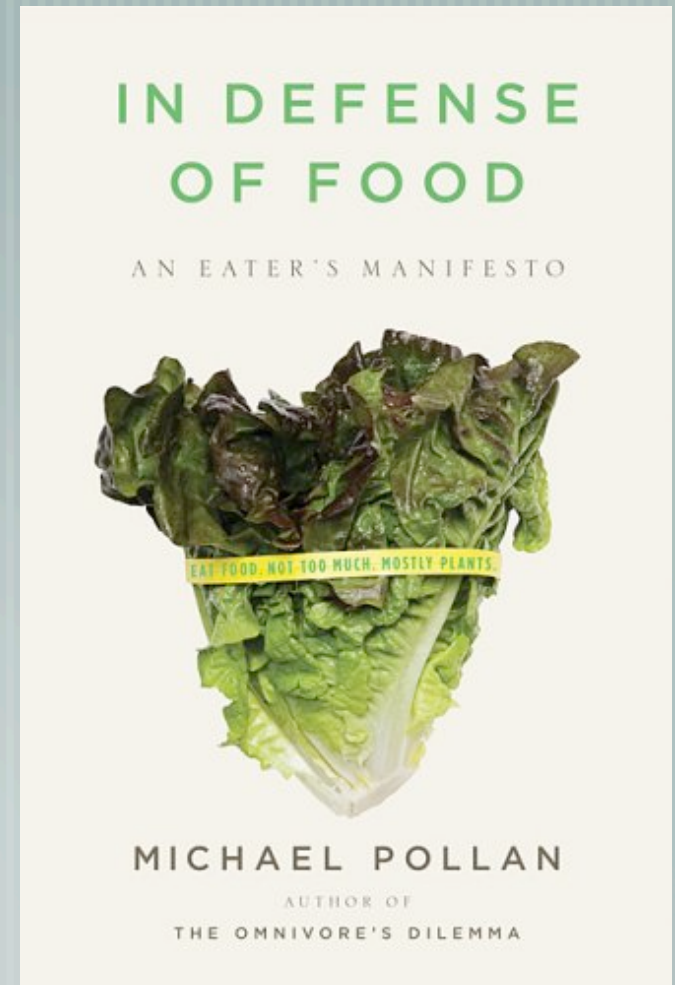
Smaller portions

More plants

Foods categorized

Does not count calories

General idea of what a person is eating



Design 1: Website

- [Part Blog — suggest new habits and provide inspiring information

- [Part Restaurant/Grocery Database

 - Initially localized to UW-Madison

 - Give healthy options

 - Other: location awareness, comparisons, ratings, comments, etc

- [Who are we to say what is healthy?

- [High upkeep

- [Innovative design, but questionable engineering

Design 2: Probe

— [Food probe that will classify food as you eat it

— [Integrate into

— Utensils: fork, spoon, knife, etc.

— Tooth filling

— [Questionable Feasibility

— [Potentially excessive testing required



Design 3: Pictures

— [Visual log more engaging and influential

— [Smartphone hardware

— popular with college demographic

— readily available

— user takes before/after pictures



Decision Matrix

	Website	Probe	Picture App.
Feasibility (25)	15	0	10
Nutritional Recommendation (25)	15	20	25
Convenience (20)	12	3	20
Availability (10)	10	2	5
Upkeep (20)	0	15	10
Total	52	40	70

Final Design: Picture Log

- [User takes picture of everything they eat
- [Readily available through smartphone hardware
- [Interactive interface
- [Feedback — weekly review

Relative Quantities

Qualitative, not quantitative

User selects between sizes

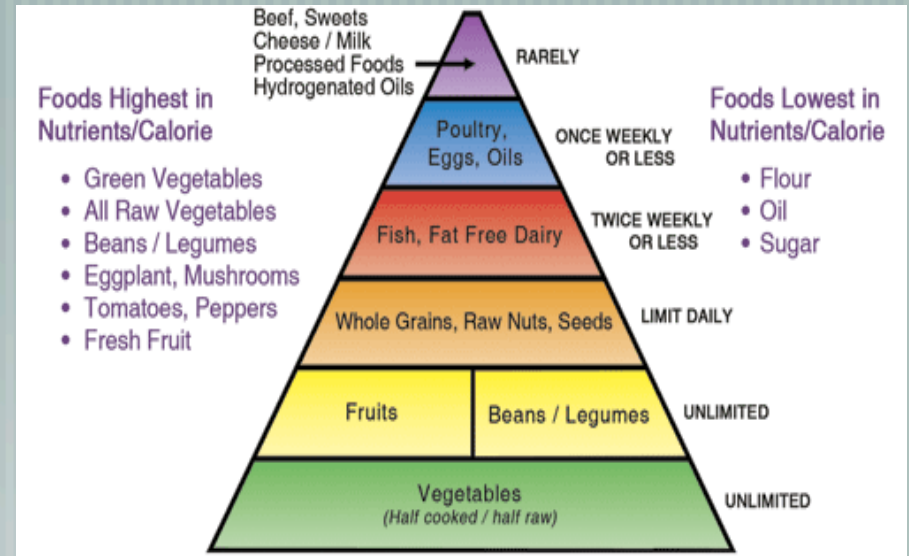
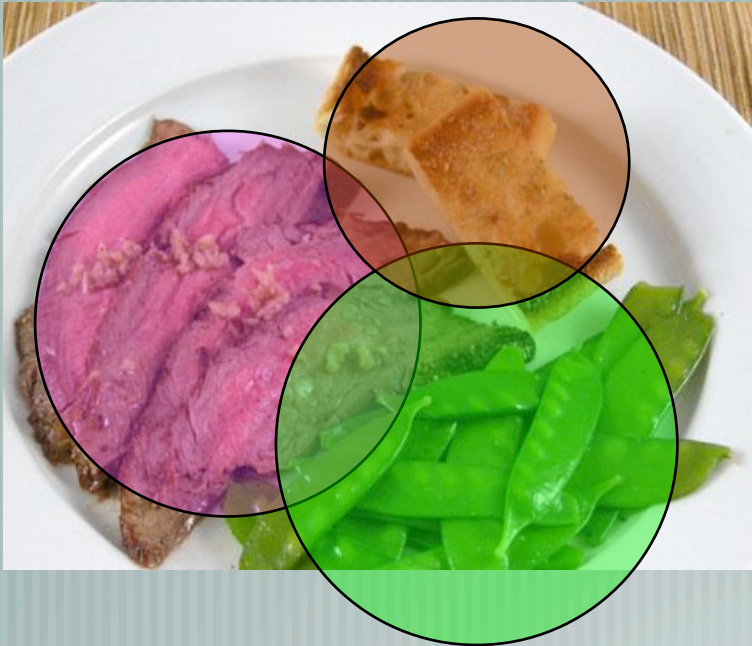
Small

Medium

Large



Categorization



— [User draws circles around foods, based on food groups

— [Area of a circle allows for a rough estimate of quantity

— [Custom categories

Feedback

Weekly review

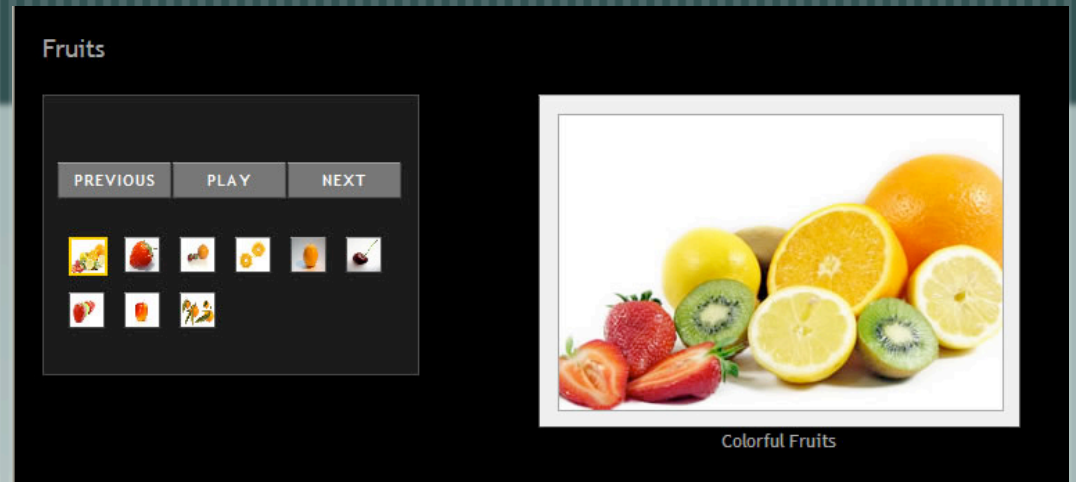
Photo slideshow

Week of meals, in pictures

End of the week quiz: "do you know what you ate?"

Summary of weekly food intake by category

Pictures can also be sent to a researcher



Future Work

Choose application platform

iPhone

Android

Windows Mobile

Programming

Find researcher to implement program

Form of assessment

Choice of categories



Questions?