

# Creation of UCSB's Interactive and Mobile- Friendly Dining Commons Menu

[appl.housing.ucsb.edu/menu](http://appl.housing.ucsb.edu/menu)

Welcome. If you do a search for “UCSB menu” you should find the subject of this talk. Or go directly there [appl.housing.ucsb.edu/menu](http://appl.housing.ucsb.edu/menu)

Who has a  
personal  
internet-enabled  
mobile device?



Who has an Internet enabled mobile device?

I would bet every UC student has a mobile device and I would also bet it is their primary way they access the Internet. Would you all agree?

I'm going to walk you through how we took menu data locked away inside a vendor application and turned it into an easy to use resource accessible by any device.

I think you could take some of these approaches back to your campus and do the same.



# Gary Scott

Business Systems Developer

Administrative & Residential  
Information Technology (ARIT)

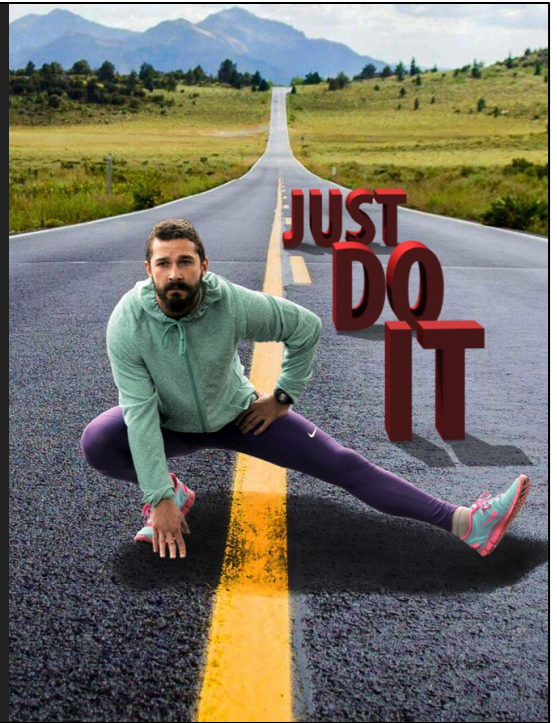
**UCSB**

I'm Gary Scott. How are you today? UCCSC is almost over. Thanks for coming.

I am a Business Systems Developer at UCSB's Administrative and Residential Information Technology department.

# Roadmap

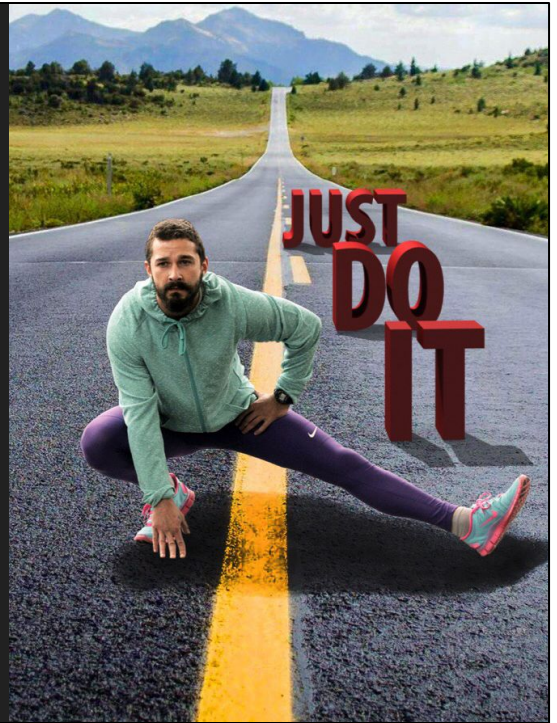
1. The Past
2. Tap into Data
3. Proof of Concept
4. Collaboration
5. Off the Shelf Tools
6. Ship It!
7. The Future



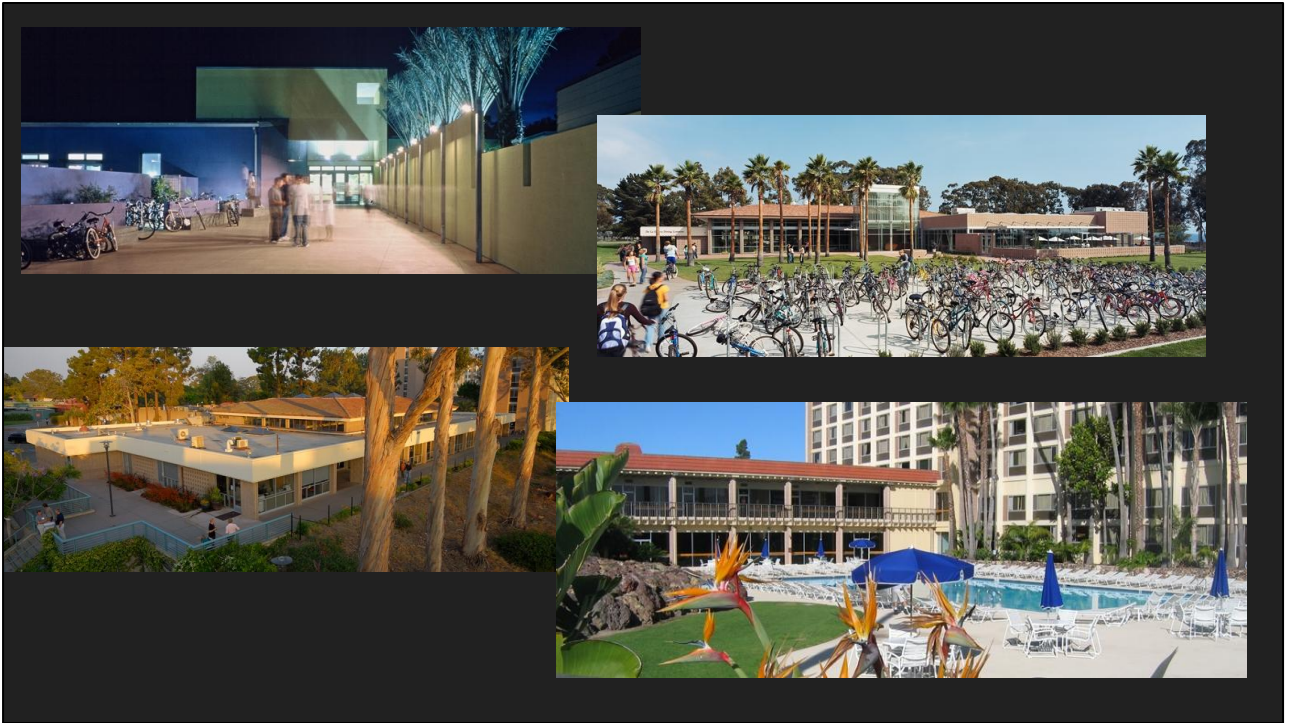
This is the roadmap for my talk today.

# Roadmap

1. The Past (and Present)
2. Tap into Data
3. Proof of Concept
4. Collaboration
5. Off the Shelf Tools
6. Ship It!
7. The Future

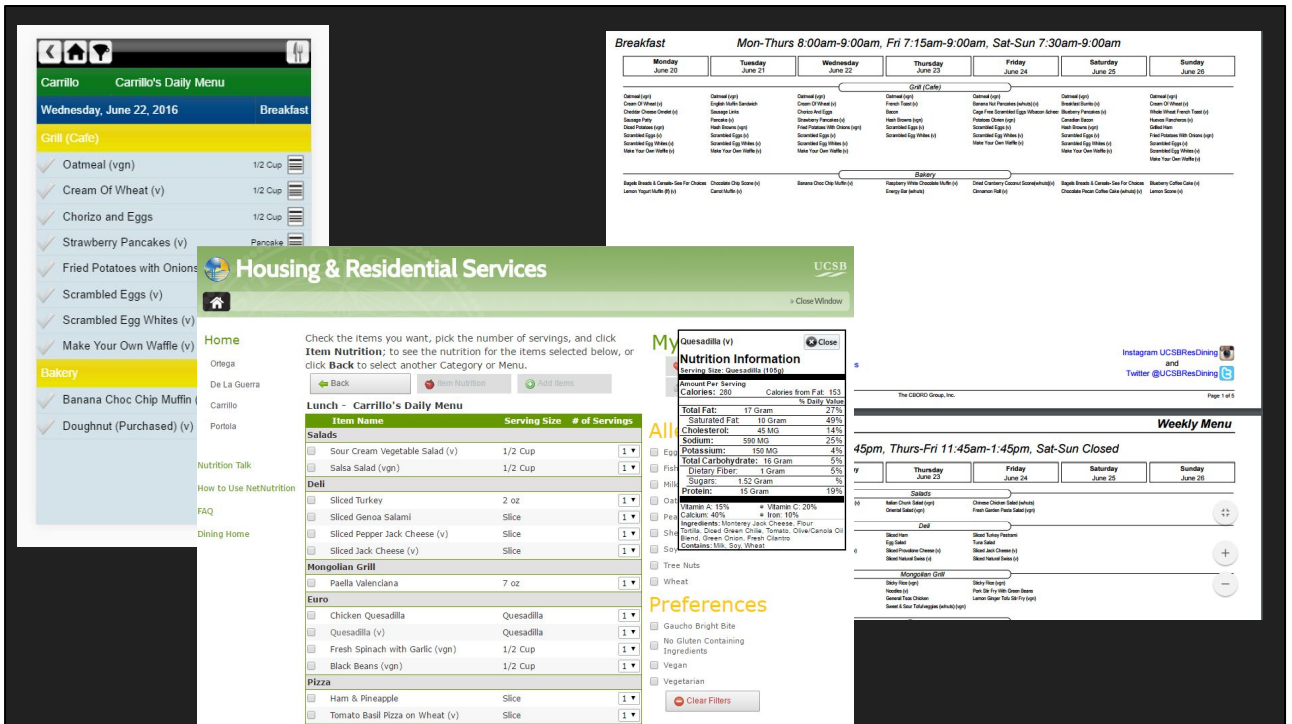


Let's start with the past, and well also the present.



UCSB has four Residential Dining Commons. These are buffet style, all-you-can-eat facilities geared towards students living in University housing. There are also dining options for staff, guests, and students living off-campus.





Residential Dining uses Cbord products to manage menus internally for the Dining Commons.

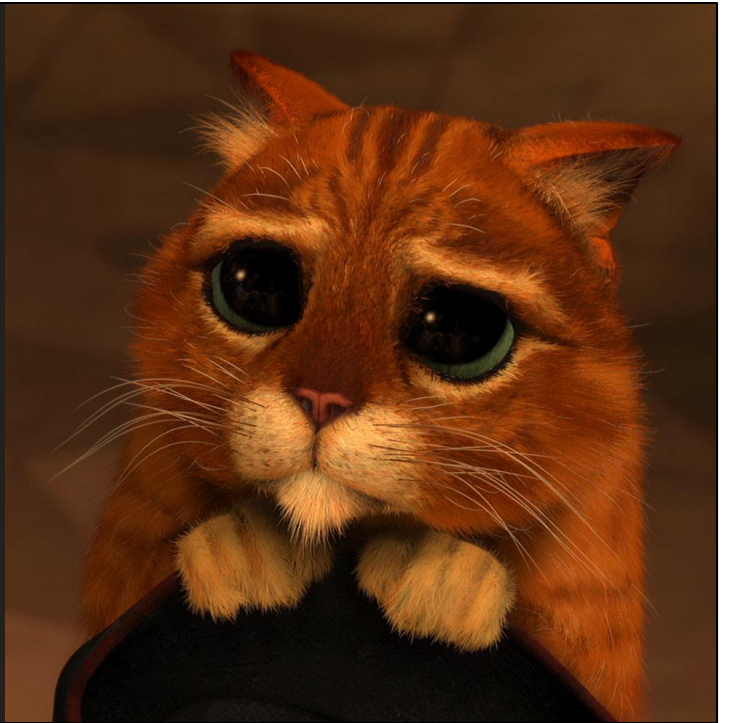
About five years ago we set up NetNutrition which is Cbord's web-app for viewing menu and nutritional information.

There are separate desktop and mobile versions of NetNutrition, but it takes several clicks to see the information and it could use some love from a UX designer.

For 12 years now we have posted PDFs of the menu. These PDFs are manually generated from the Cbord system and posted on the web. They must be regenerated often to incorporate ongoing changes to the menu.

# Students have asked.

Tasty data please!



Over the years we have had several students ask for access to the data so they could create some sort of app to easily display it to everyone.

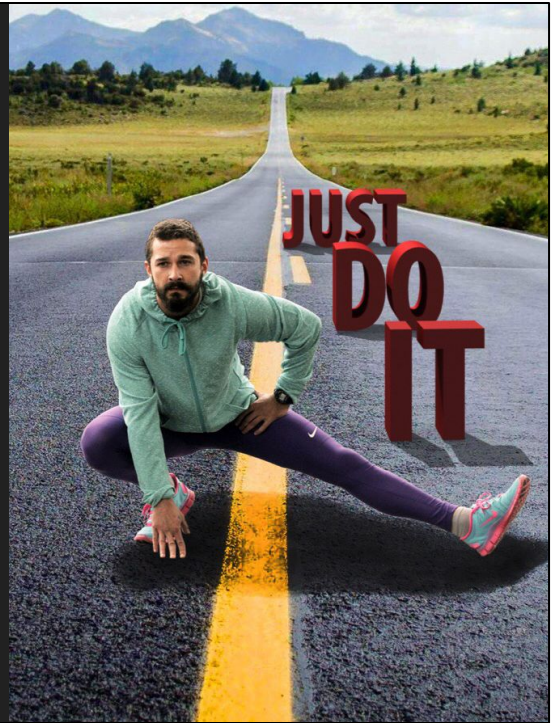
Currently there are a few unsanctioned iOS and Android apps that scrape the data from PDFs.

Take a look at what your campus offers, identify its shortcomings and how it can be improved.



# Roadmap

1. The Past
2. Tap into Data
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Onto the second part of our roadmap.



I want to talk about data.

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The Cbord database is hosted internally by ARIT. It is a complex database as expected for any enterprise solution. In the past we have poked around in there looking for something we could extract. But it would take a long time to reverse engineer and understand its logic and structure.

We asked the vendor for an API into the data and they quoted us an astronomical amount, for a feature they would just resell to others. No way.

```
From: Masha  
To: Gary  
Subject: Try this
```

```
SELECT * FROM  
av_srv_menu_detail
```

One day my manager emails me a SQL statement for the Cbord database.

It points to a Database View I have never seen before.

I quickly run it and my jaw hits the floor.

It contained every piece of information we needed. day, dining common, meal, course and name of the food item.

	A	B	C	D	E	F
1	service_unit	eventdate	meal	course	formal_name	item_intid
2	03 Carrillo Commons (S)	5/18/14 0:00	Dinner	Bakery	Cornbread w/ Honey Butter	3028
3	07 Portola Commons (S)	5/13/14 0:00	Dinner	Specialty Bar	Aged Cheddar Cheese Sauce	2046
4	07 Portola Commons (S)	5/13/14 0:00	Lunch	Sides	Albondigas Soup	11332
5	02 De La Guerra Commons (S)	5/16/14 0:00	Lunch	To Order	Alburro Sauce (v)	9117
6	03 Carrillo Commons (S)	5/12/14 0:00	Bright Meal	Lunch	Alfalfa Sprouts (vgn)	696
7	07 Portola Commons (S)	5/12/14 0:00	Dinner	Specialty Bar	Alfredo Sauce (v)	12438
8	07 Portola Commons (S)	5/18/14 0:00	Dinner	Specialty Bar	All Beef Jumbo Franks	2195
9	01 Ortega Commons (S)	5/16/14 0:00	Dinner	Bakery	Almond Braids (w/nuts) (v)	3015
10	01 Ortega Commons (S)	5/12/14 0:00	Lunch	Grilled Sandwiches to Order	American Cheese (v)	5280
11	01 Ortega Commons (S)	5/13/14 0:00	Lunch	Grilled Sandwiches to Order	American Cheese (v)	5280
12	01 Ortega Commons (S)	5/15/14 0:00	Lunch	Grilled Sandwiches to Order	American Cheese (v)	5280
13	01 Ortega Commons (S)	5/16/14 0:00	Lunch	Grilled Sandwiches to Order	American Cheese (v)	5280
14	01 Ortega Commons (S)	5/14/14 0:00	Lunch	Grilled Sandwiches to Order	American Cheese (v)	5280
15	03 Carrillo Commons (S)	5/15/14 0:00	Dinner	Pasta	Angel Hair Pasta (vgn)	6524
16	01 Ortega Commons (S)	5/16/14 0:00	Lunch	Bakery	Apple Crisp (v)	2513
17	02 De La Guerra Commons (S)	5/13/14 0:00	Lunch	Bakery	Apple Crisp (v)	3405
18	07 Portola Commons (S)	5/13/14 0:00	Lunch	Salads	Apple/Blue Chz/Walnut Salad (w/nuts)(v)	11310
19	07 Portola Commons (S)	5/13/14 0:00	Bright Meal	Lunch	Apple/Blue Chz/Walnut Salad (w/nuts)(v)	11310
20	01 Ortega Commons (S)	5/13/14 0:00	Breakfast	Bakery	Applesauce Coffee Cake (v)	3014
21	03 Carrillo Commons (S)	5/15/14 0:00	Breakfast	Bakery	Applesauce Coffee Cake (v)	4656
22	01 Ortega Commons (S)	5/15/14 0:00	Breakfast	Hot Foods	Arroz Con Leche (v)	3422
23	03 Carrillo Commons (S)	5/14/14 0:00	Breakfast	Grill (Cafe)	Arroz Con Leche (v)	7167
24	03 Carrillo Commons (S)	5/17/14 0:00	Dinner	Pizza	Artichoke Pesto Pizza on Wheat (v)	5990
25	07 Portola Commons (S)	5/14/14 0:00	Lunch	Salads	Asian Chicken and Orzo Salad (w/nuts)	11979
26	01 Ortega Commons (S)	5/15/14 0:00	Lunch	Hot Foods	Asian Influenced Veggie Wrap (vgn)	10248
27	01 Ortega Commons (S)	5/15/14 0:00	Bright Meal	Lunch	Asian Influenced Veggie Wrap (vgn)	10248

The source of the SQL was from an excel report the Residential Dining Nutritionist used to locate allergens.

My manager discovered this and examined the excel data query and found the SQL I showed you before.



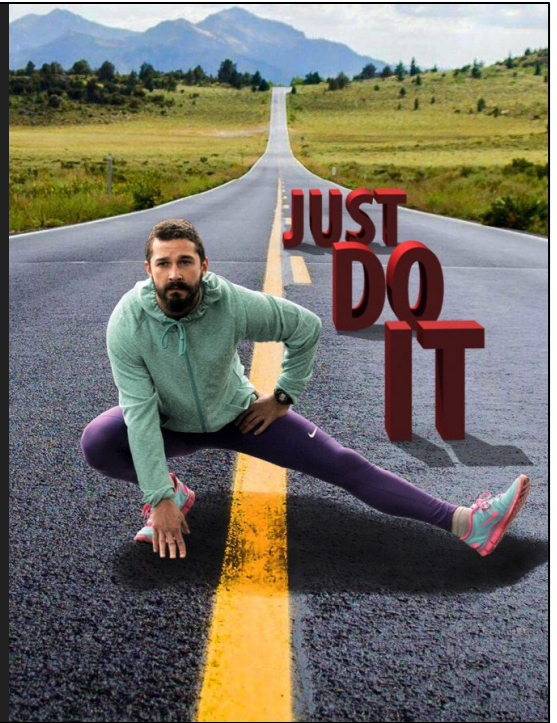
This was huge, this was \*the\* moment. It opened the floodgates. We could work with this. This was awesome.

You can explore the source of your data, find out where you can tap into it.

That is the first big step you would need to be able to do what we did.

# Roadmap

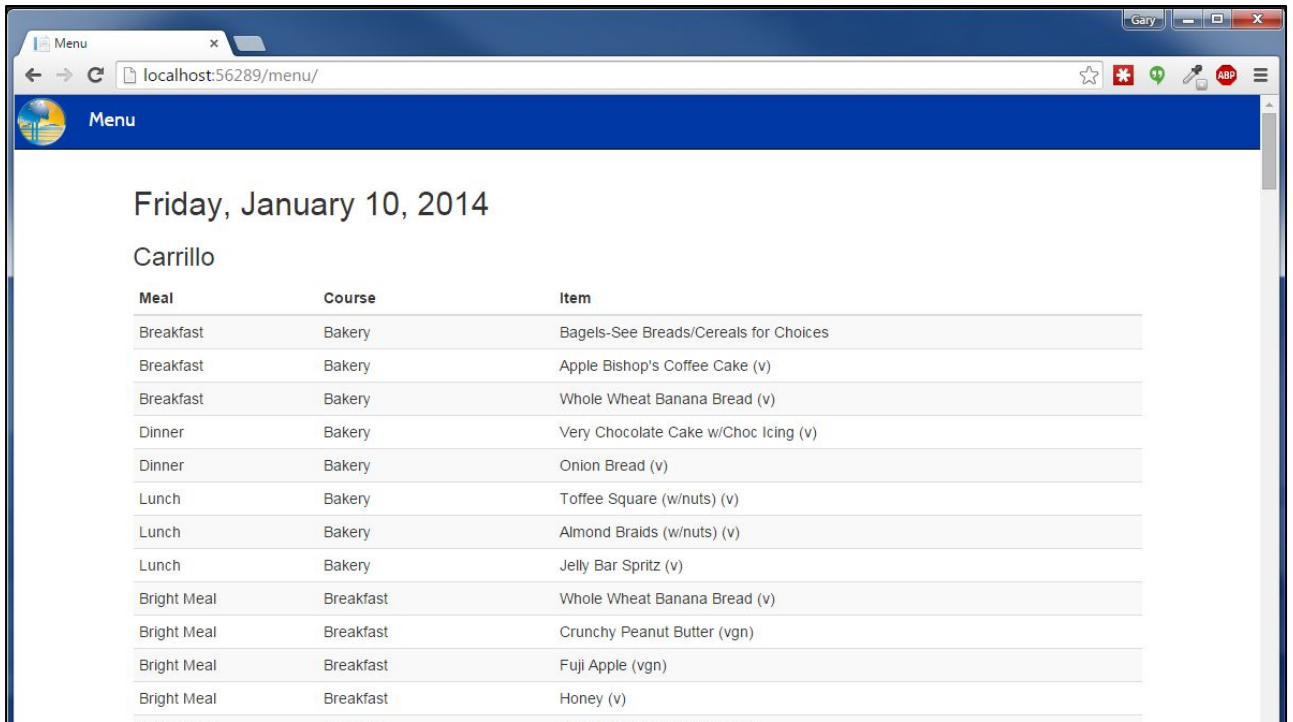
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Onto the Proof of Concept. The land of discovery.

One of the most fun phases, or the most frustrating depending on how it goes.



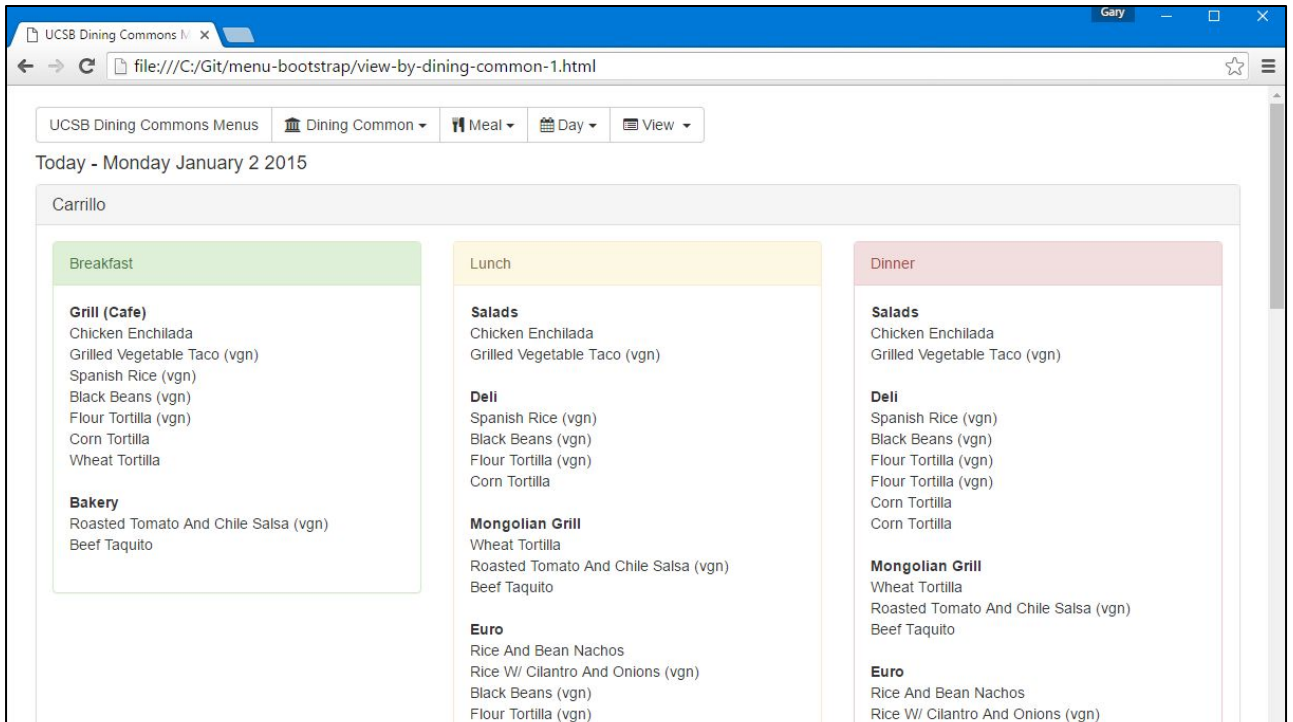


The next step was to get it displayed on a webpage.

That was pretty easy using normal web development tools.

I then started on grouping, taking the tabular rows and columns and nesting them into collections of collections.

Dining Commons contain many meals which contain many courses which contain many food items.



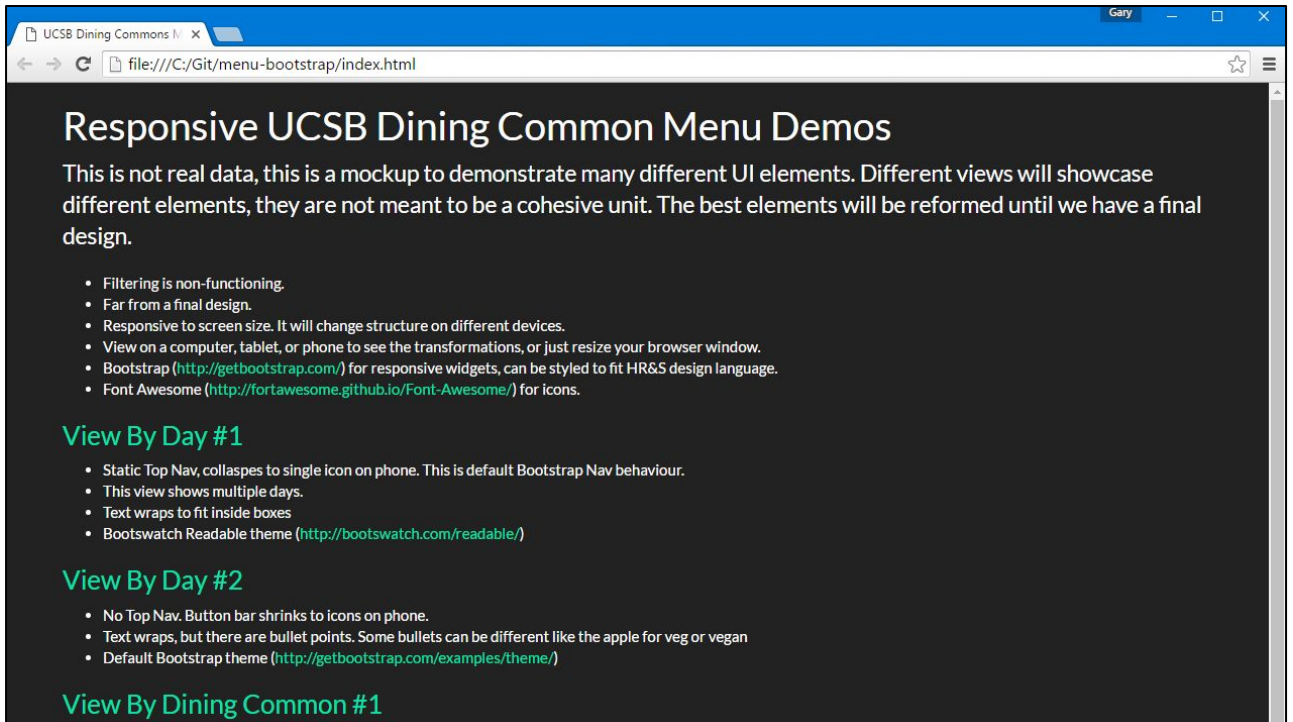
Once I knew I could get the data I shifted focus to the front end user experience.

Since the shape of the data all depended on how we were going to display the information it was important to get that sorted out.

I'll talk about collaboration in a minute.

A goal from the beginning was to make this mobile friendly so a Responsive Web Design was in order.

If you are not familiar with Responsive Design, it is a fairly new paradigm where a web page will morph depending on the width of the viewer's device.



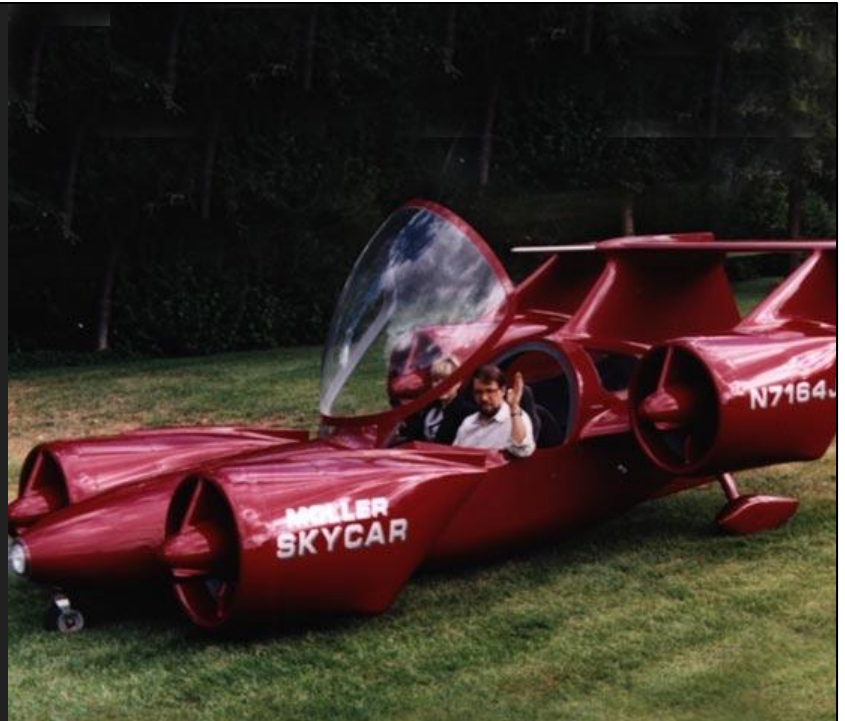
I put together several mockups displaying the menu information in different configurations.

There are lots of ways to accomplish this.. Photoshop is a common method, using some sophisticated mockup tools, or even drawings by hand. But for me coding in HTML was the quickest.

I only used widgets I knew would be easy to create and would be easy to use on a phone or other small devices. This is called "Mobile First".

I showed these designs to a small group to get feedback and worked out exactly who would be involved to bring this to fruition.

# Is it Viable?



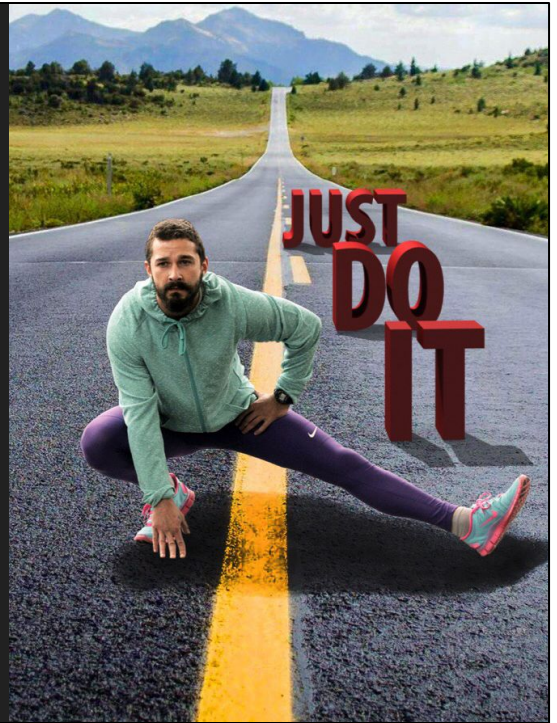
The proof of concept and early mockups are an important step.

You need to find out if it is viable before you spend too much time and energy on your project.

I don't know about you, but I have a hundred things I can work on. I don't want to waste my time on something that will be a dead end.

# Roadmap

1. The Past
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4. **Collaboration**
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Time to work with others, especially the “business” side of the house.



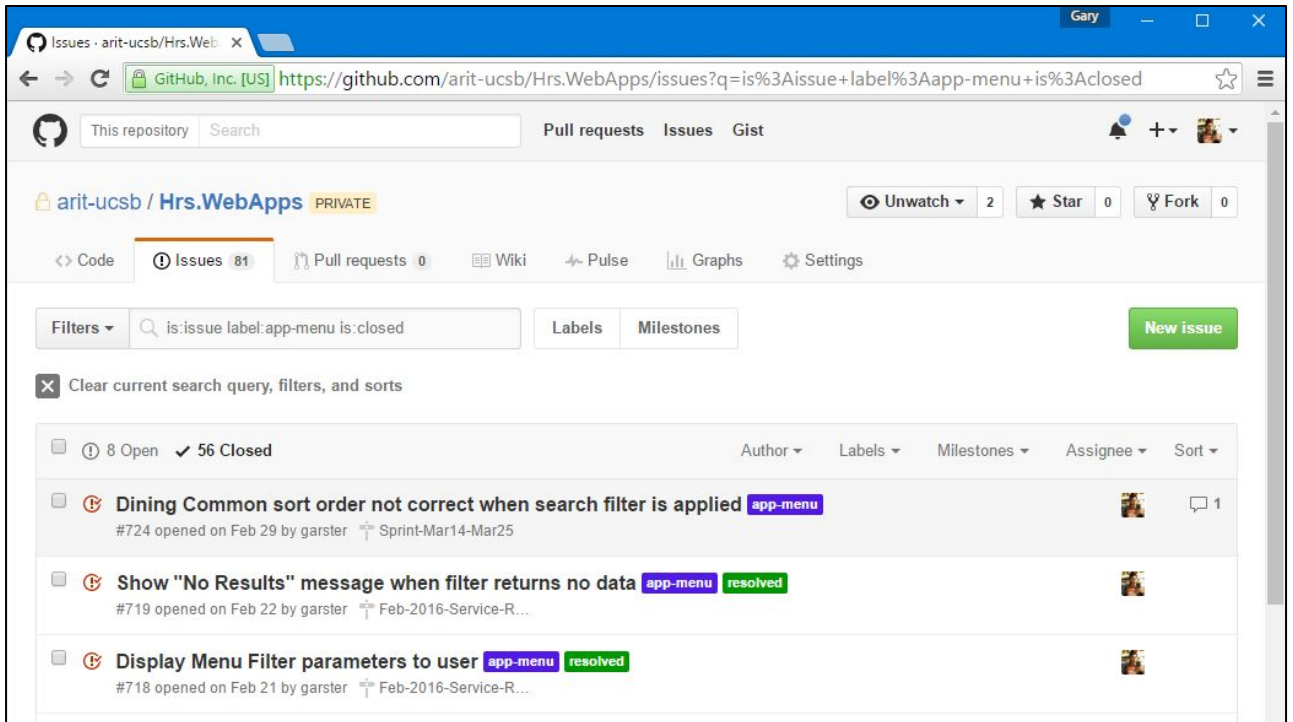
Keep the team small. You've heard the term "designed by committee" right?

Find the few people that need to be involved and work with them closely.

I worked with the Nutritionist, she is the "owner" of the menu data. I also got some input from the Graphic Designer for colors, font choices, etc.

At times the Nutritionist ran designs by the Director of Dining Services.





We use GitHub for source code control and Issue tracking. I had my collaborators open GitHub accounts so they could directly interact with the issue tracker.

We used this as much as possible. Everything was broken down into workable, closable items.

The issue was created and it could be discussed right there. Issues can be bugs or enhancements or even questions. It works best to capture the issue in GitHub or some other tracker, rather than getting lost in an email thread.

We would group these issues into milestones. Complete work on that milestone then review and plan the next milestone.

Doing small, incremental work allow us to try things out and change direction before we were too far deep.

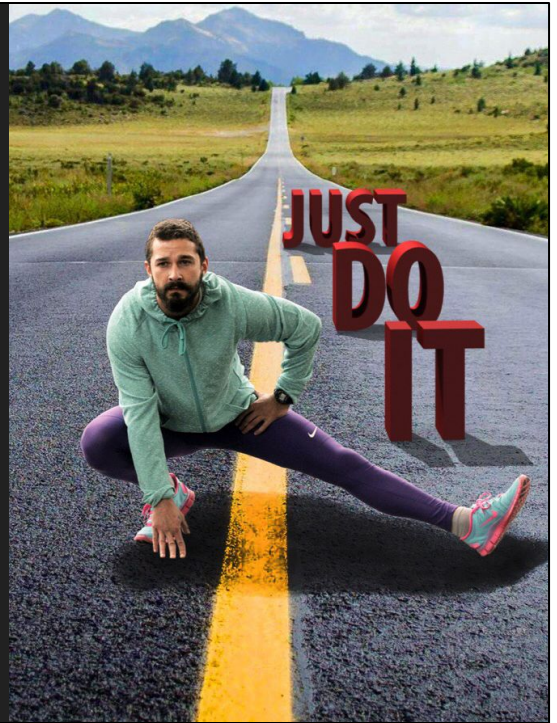
A good idea on the whiteboard may not work out in the real world.



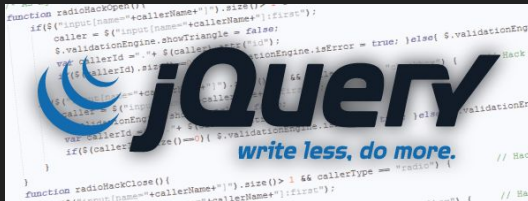
Find your champions, build your relationships, talk often, listen more, and make something great!

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Next up is Tools.



“Stand on the shoulders of giants.” “Don’t reinvent the wheel.” Heard these before?

My job is business applications. I’m not doing research. I’m not designing the next programming language. I’m delivering value to my customers in a timely manner. That is my purpose here.

I am going to use any tool that helps me accomplish that. In the web world that means code frameworks.

We put the menu into an existing site so no need to do all the groundwork of getting that setup.

I used Bootstrap for UI, only some colors and font sizes were changed. Bootstrap gave me all the responsiveness I needed without having to write it myself.

A bonus is frameworks like this are tested in all the different browsers and OSes. Lots of documentation and a large community which means lots of answers and examples on the web.

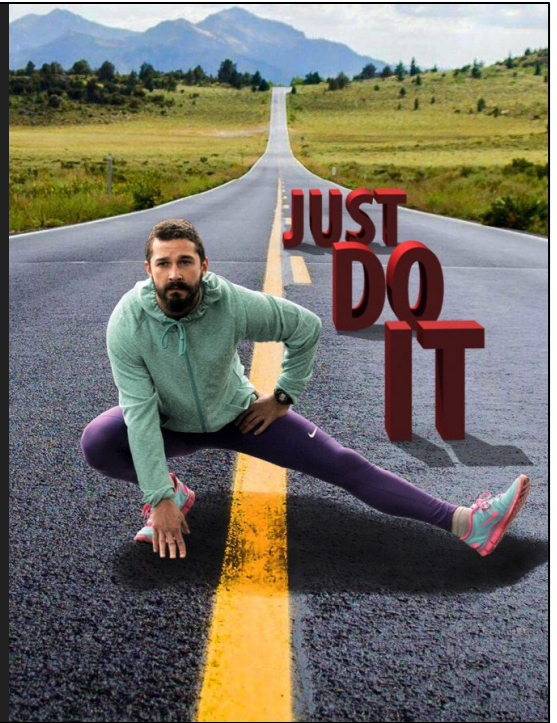
At first I was going to make a RESTful API then have jQuery grab and parse the data but I found that very tricky due to the complex nesting, and I don’t know any good

templating engines to help build the UI.

But did it the old fashioned way and render the UI all on the server. Not the most elegant, but it got the job done.

# Roadmap

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Time to ship it.





KEEP  
CALM  
AND  
SHIP  
IT

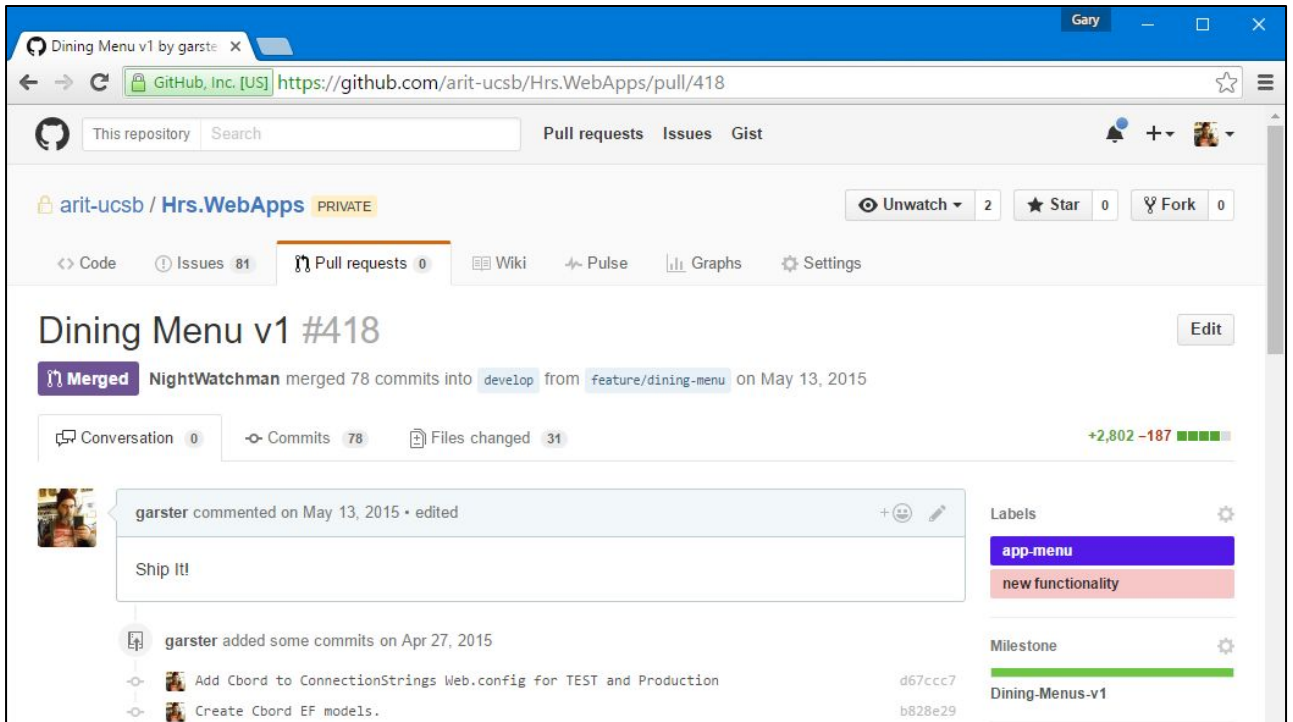
Shoot the engineer  
and ship the product.

You know, sometimes you have to shoot the engineer and ship it.

For something like this, don't overthink it. Anything is better than what we have.



At first we wanted to replace the PDFs but those provided a full week at a glance and that much data would not work so well on a small screen.


We decided to stay with the day at a time view and keep the PDFs for now.







We created a 1.0, deployed it and did a soft launch, telling people by word of mouth. A few days later we linked to it from the website.

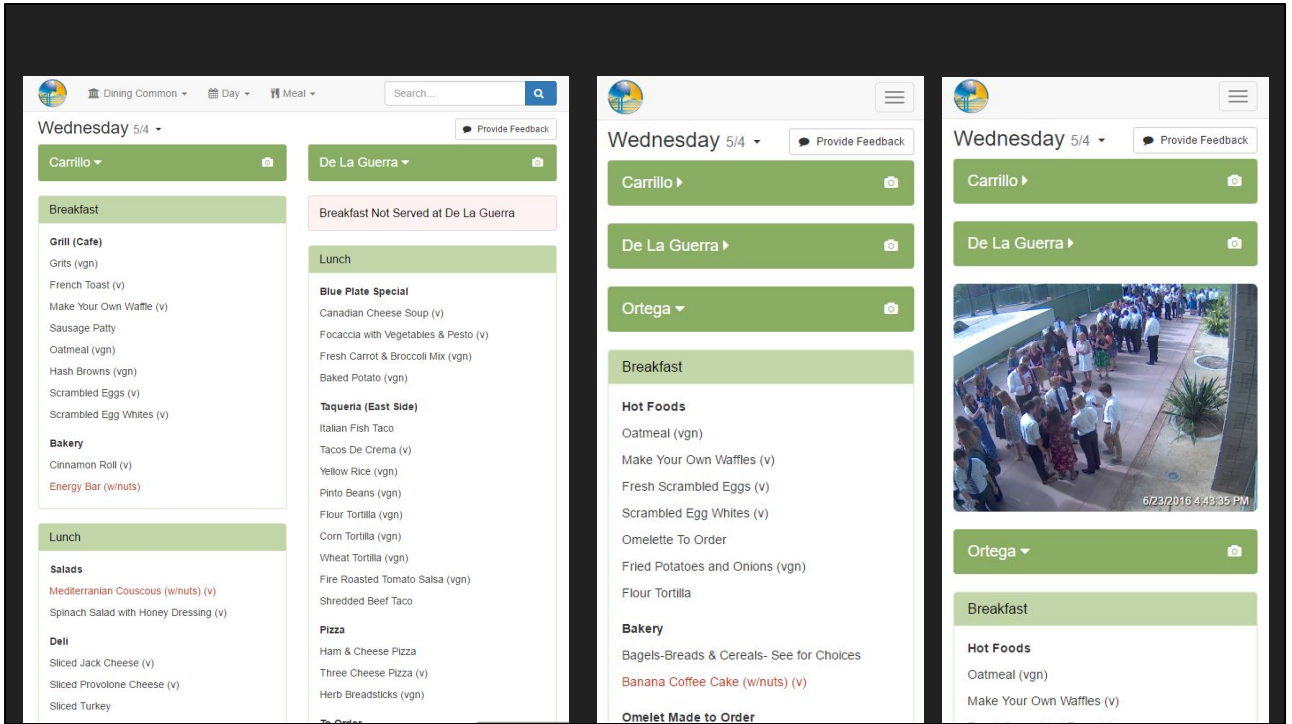
Near the end we were tweaking colors and were getting cold feet. My graphic artist was the voice of reason and told me something along the lines of “don't worry about it, it looks good, it is lightyears ahead of what we have, don't even ask me for more input, just ship it.”


 Dining Common ▾ Day ▾ Meal ▾
 Search... 

**Wednesday 5/4 ▾**
 Provide Feedback

Carrillo ▾ 	De La Guerra ▾ 	Ortega ▾ 	Portola ▾ 
<p><b>Breakfast</b></p> <p><b>Grill (Cafe)</b></p> <ul style="list-style-type: none"> <li>Grits (vgn)</li> <li>French Toast (v)</li> <li>Make Your Own Waffle (v)</li> <li>Sausage Patty</li> <li>Oatmeal (vgn)</li> <li>Hash Browns (vgn)</li> <li>Scrambled Eggs (v)</li> <li>Scrambled Egg Whites (v)</li> </ul> <p><b>Bakery</b></p> <ul style="list-style-type: none"> <li>Cinnamon Roll (v)</li> <li>Energy Bar (w/nuts)</li> </ul> <p><b>Lunch</b></p>	<p style="background-color: #FFCDD2; padding: 5px;">Breakfast Not Served at De La Guerra</p> <p><b>Lunch</b></p> <p><b>Blue Plate Special</b></p> <ul style="list-style-type: none"> <li>Canadian Cheese Soup (v)</li> <li>Focaccia with Vegetables &amp; Pesto (v)</li> <li>Fresh Carrot &amp; Broccoli Mix (vgn)</li> <li>Baked Potato (vgn)</li> </ul> <p><b>Taqueria (East Side)</b></p> <ul style="list-style-type: none"> <li>Italian Fish Taco</li> <li>Tacos De Crema (v)</li> <li>Yellow Rice (vgn)</li> <li>Pinto Beans (vgn)</li> <li>Flour Tortilla (vgn)</li> <li>Corn Tortilla (vgn)</li> </ul>	<p><b>Breakfast</b></p> <p><b>Hot Foods</b></p> <ul style="list-style-type: none"> <li>Oatmeal (vgn)</li> <li>Make Your Own Waffles (v)</li> <li>Fresh Scrambled Eggs (v)</li> <li>Scrambled Egg Whites (v)</li> <li>Omelette To Order</li> <li>Fried Potatoes and Onions (vgn)</li> <li>Flour Tortilla</li> </ul> <p><b>Bakery</b></p> <ul style="list-style-type: none"> <li>Bagels-Breads &amp; Cereals- See for Choices</li> <li>Banana Coffee Cake (w/nuts) (v)</li> </ul> <p><b>Omelet Made to Order</b></p> <ul style="list-style-type: none"> <li>Omelets Made To Order</li> <li>Fresh Cage Free Egg</li> </ul>	<p><b>Breakfast</b></p> <p><b>Salads</b></p> <ul style="list-style-type: none"> <li>Crunchy Fruit Salad (w/nuts) (v)</li> </ul> <p><b>Hot Foods</b></p> <ul style="list-style-type: none"> <li>Oatmeal (vgn)</li> <li>Fresh Scrambled Eggs (v)</li> <li>Sausage Links</li> <li>Buttermilk Pancakes (v)</li> <li>Fried Potatoes and Onions (vgn)</li> </ul> <p><b>Specialty Bar</b></p> <ul style="list-style-type: none"> <li>Scrambled Egg Whites (v)</li> <li>Fried Eggs (v)</li> <li>Eggs Benedict</li> <li>Make Your Own Waffles (v)</li> <li>Blueberry Sauce (v)</li> </ul>

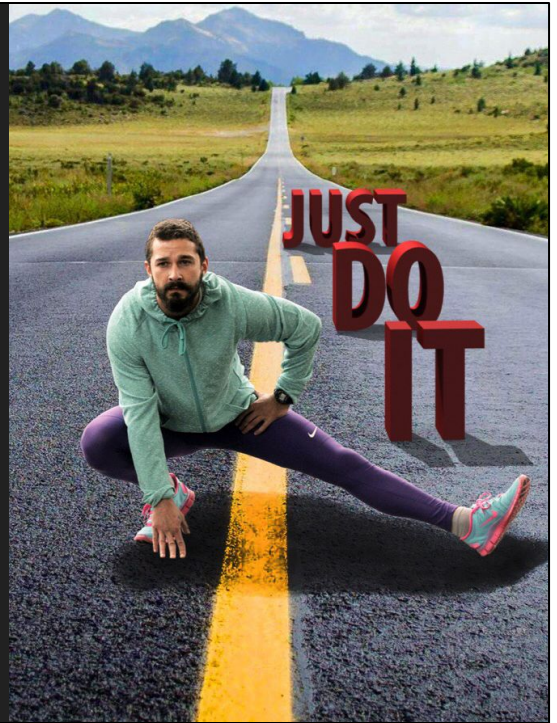
Here is the full desktop view, all four dining commons side by side.



Tablet sized and phone sized views, far right has the dining cam shown.

# Roadmap

1. The Past
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6. Ship It!
7. The Future (and Present)



What does the future hold?



We launched this just over a year ago.

We see about 15,000 to 20,000 page visits per month.





Or backlog is huge.

We have added since first launch was the Dining Commons Hours, a button to show the dining cam, collapsed when you view it on a phone, items with nuts are highlighted red. and a big one was food search which was recommended thru the "provide feedback" button.

In the future I would like to rewrite the core data access to be more flexible.

Make different views like a single week at a single dining common.

Hide meals that have already been served for the day. No need to show breakfast if it is dinner time.

Rest API so the data can be loaded dynamically.

Some sort of method to save a favorite item so you can be alerted when it is served next. The eggs benedict are to die for.

Could use that same "preferences" to show you your preferred dining common, etc. Maybe use location to show the closest one on top?

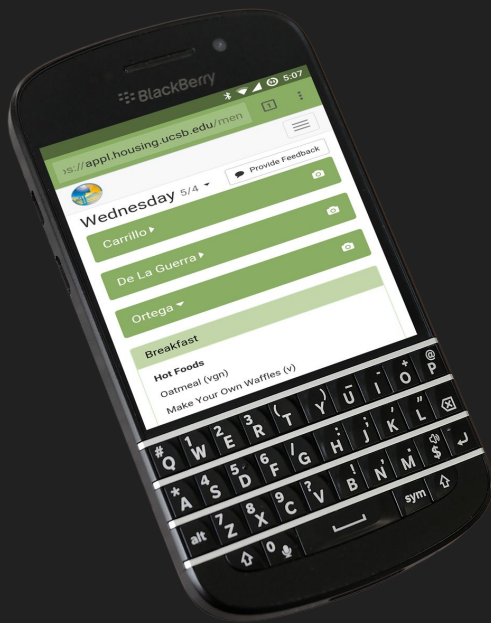
Better sorting and filtering, which is tough to do on a phone.

We would like to get some formal focus groups to give us feedback and help set direction, but we really have only started.

We want to enhance this menu but we need to keep the primary objective in mind. Keep it simple, a glance of the data you want.

If we make it too complicated and hard to use we just rewrite the vendor provided app.

# Conclusion



Using simple tools and a small team we were able to enhance our student's dining experience greatly by making the information they desire in a format that can easily access from anywhere.

I hope you are inspired by my talk and can take some of these approaches back to your campus.



Again I am Gary Scott, thanks for spending the last hour with me, I hope it was worth your time.

Hit me up, I love this stuff, I love to share ideas and learn from others. If you fix up your menu, I want to know.

See ya around.