Appetize
CPSC 547

Information Visualization
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Appetize web app

Appetize digitizes the whole experience for us when we want to dine in.

Appetize web app

Appetize is for digitizing dining experience.

The app will let customers to:

- Look at the virtual menu
- Order
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The web app will let restaurant owners to:

- Define their food items and menus
- Use the analytics part

Design Goals

- To give insightful information to restaurant owners to:
    - Better manage their restaurant.
    - Have a better relationship with their customers
    - Compare their restaurants with similar restaurants
    - Design a better menu

Task abstraction

- When to buy ingredients? What to buy?
- Who to send promotions to?
- Identify anomalies in their sales.
- Compare their restaurant to "similar" restaurants.
- Track the popularity of their restaurant among different groups of users.
- Have a better menu.

Data abstraction

- Orders
    - Location
    - Food items
    - Date and time
    - User
    - Percentage of tip
- Food item
- Ingredients.
    - Quantities of ingredients.
    - Capacity

- User:
    - Age
    - Gender
- Derived data:
    - Loyalty measure.

Algorithms

- Defining user loyalty to each restaurant:
    - Number of visits + dates of visits.
    - More weight on recent visits while considering users' long-term bond to the restaurant as well.
    - Output: a number between 0 and 1
- Finding similar restaurants to one specific restaurant:
    - Neighbourhood
    - Average of items' price
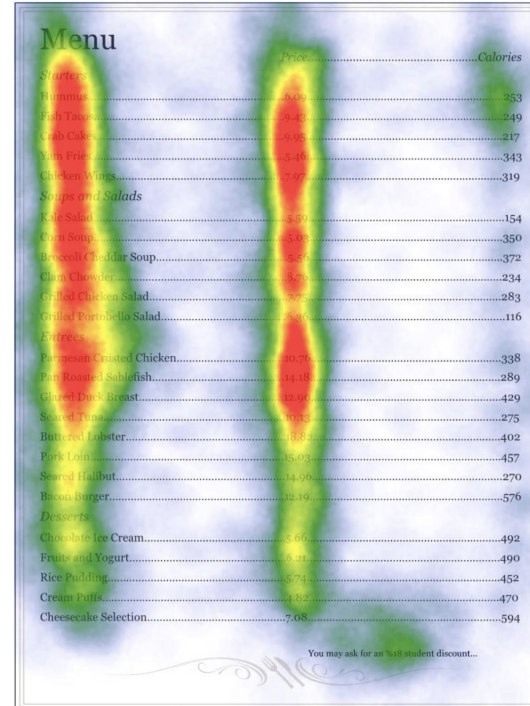   - Average of time spent by customers

How did we build it?

- Database manipulation
- Data synthesis
- Mock-up
- Focus group
- Implementation
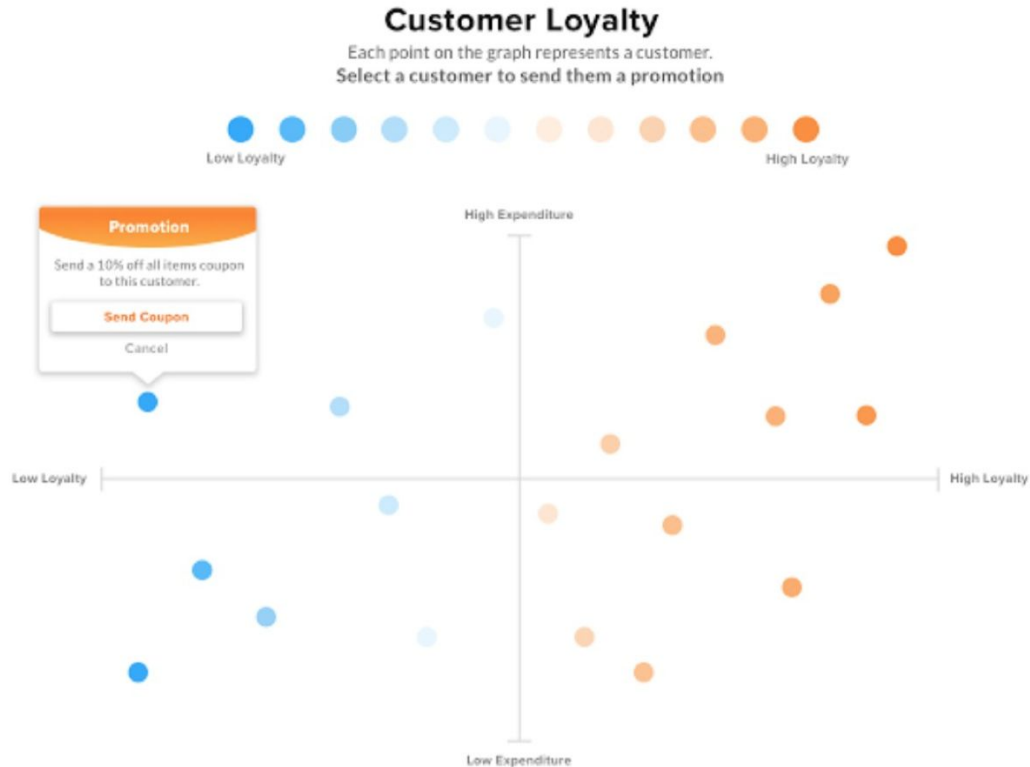 - Web based
  - Tools: High chart, Google charts

View #0

- Heatmap to show which parts of the menu has been clicked more
- In the focus group, we realized restaurant owners did not find this super useful.
- They already knew people tend to choose items which are positioned in the beginning of a menu.

View #1 - Mock-up

Customer Loyalty
Each point on the graph represents a customer.
Select a customer to send them a promotion

Low Loyalty | High Loyalty

Promotion
Send a 10% off all items coupon to this customer.

Send Coupon
Cancel

High Expenditure

Low Loyalty | High Loyalty

Low Expenditure

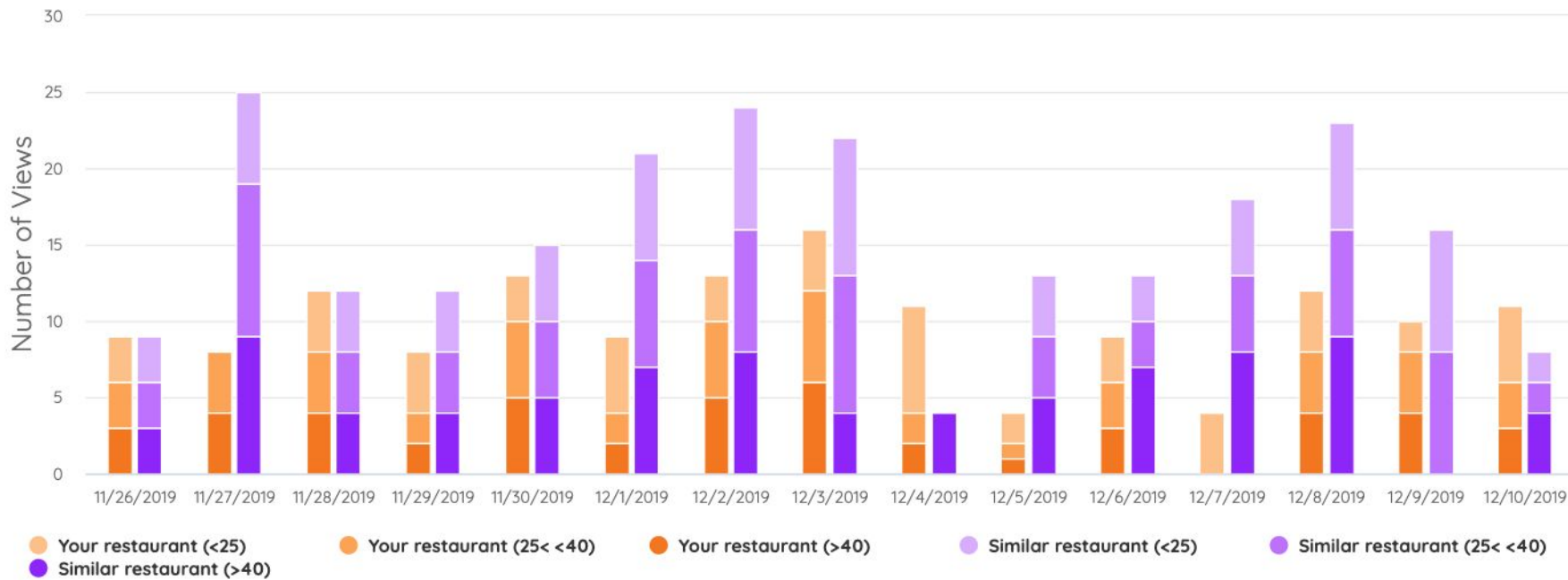# Views #1 - Implemented
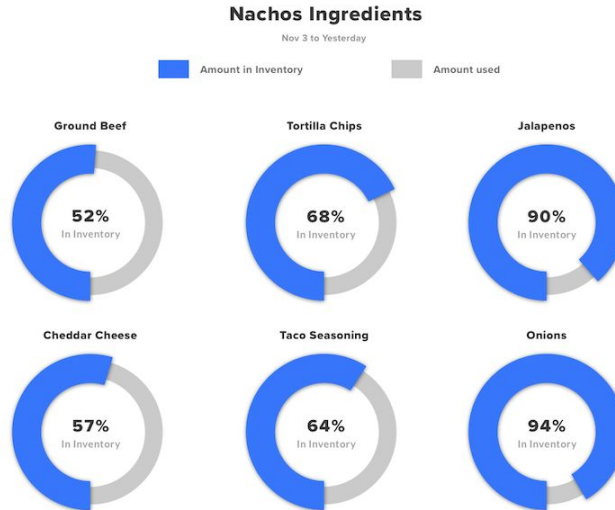

Loyalty Chart

View #2 - Mock-up

View #2 - Implemented

Number of views through Appetize in the past two weeks

View #3

Mock-up

Inventory

Select an item to gain insight on analytics for that item.

Select or Search for an Item

Nachos

Number of Nachos Sold

Nov 3 to Yesterday

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
20	31	22	38	45	23	35

Nachos Ingredients

Nov 3 to Yesterday

Amount in Inventory   Amount used

Ground Beef
52%
In Inventory

Tortilla Chips
68%
In Inventory

Jalapenos
90%
In Inventory

Cheddar Cheese
57%
In Inventory

Taco Seasoning
64%
In Inventory

Onions
94%
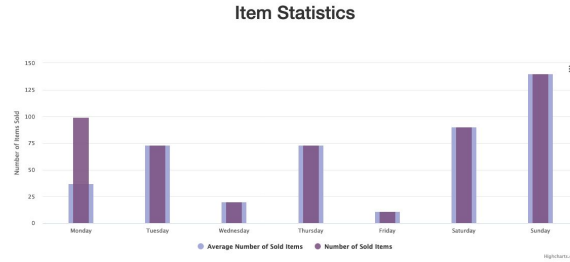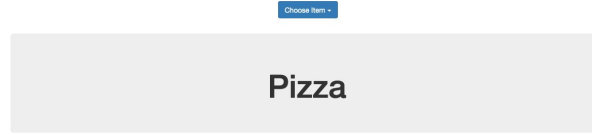In Inventory

Our views - 3

Implemented

Challenge for ingredients:

- There are lots of ingredients.
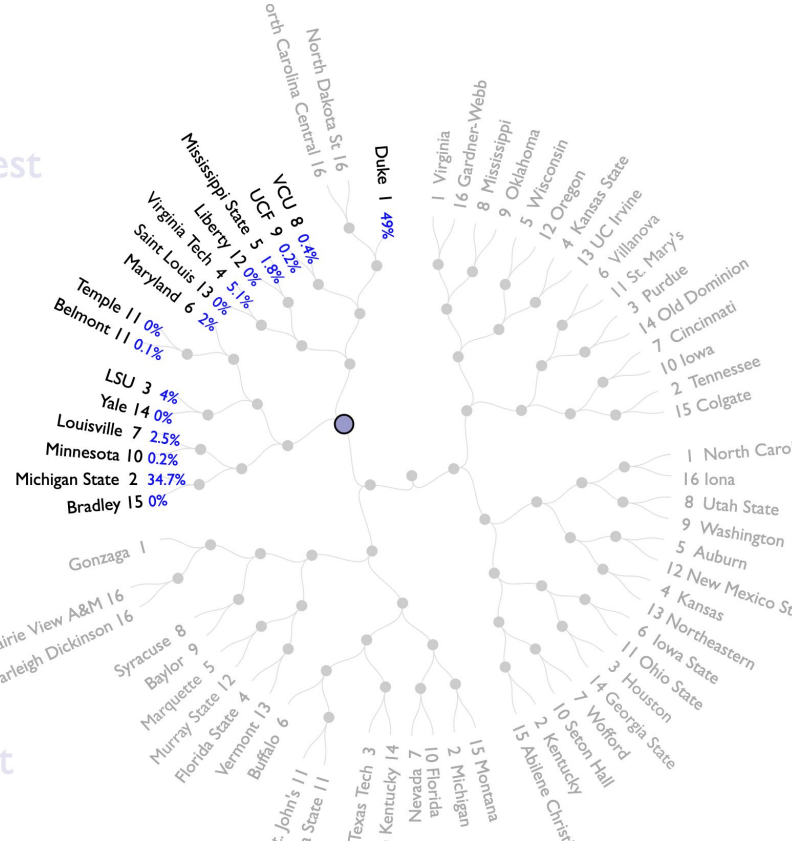- Different items have different ingredients.

Alternative Designs

- Ingredients on leaf.
- Items on parent leafs.
- Preserving the hierarchical architecture of foods (Food Onthology)
- We can understand how much we lack ingredients for categories of items(like all kinds of burgers.
- Problem: Lots of ingredients are common among different items(like bread or oil)

Demo

Design choices

- What:
    - Categorical and numerical data from foods and users' dining experience.
- Why:
    - Help restaurant owners manage their business.
- How:
    - Using channels of hue, luminance, spatial position
    - Juxtaposition of views, Superimposing.
    - Interactions like brushing.

Limitations/critiques

1. All the visualizations are based on dummy data.
2. Constraint on the time interval that we compare a restaurant with similar restaurants (two weeks).
3. Consuming a lot of space for showing ingredients.
4. Lack of showing an overview of all food items and related ingredients.

Thanks!

Alternative Designs(2D matrix heatmap)

- Items on y-axis and ingredients on x-axis.
- Problematic: each item just have a subset of ingredients.
- So a lot of the space in this 2D matrix will be unused.