Team 2 Product Backlog

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1. Problem Statement

Busy college students don't have a convenient and centralized place to view how busy a dining court or retail restaurant is at certain hours during the day to help determine where to eat (along with knowing what food items are provided at dining courts at that time). Furthermore, students currently do not have the ability to rate food items they consume from dining courts (and retail restaurants), and receive recommendations on where they can find the food that they enjoy (or similar food). Our software will address these needs by aggregating relevant information so that it is publicly available, giving students the ability to rate their menu items, and creating a recommendation system to help students find dining establishments favorable to their specific dietary needs and preferences.

2. Background Information

2.1 Domain & Targeted Users

College students are in a rush and need to know where they could get their next quick bite of food that they enjoy so they can move on with their day. They should also have the opportunity to rate the food they eat so that they can receive recommendations on where they can find the food they enjoy. Students should also be able to view how busy dining courts are at all hours during the day, and be able to easily filter dining courts and their menu options by their dietary preferences/restrictions. Students across all universities could find out all of the information needed through one platform.

2.2 Existing Software

There exist software that implement parts of the intended capabilities of Füdstops, but there are none that combine all of these functionalities into one application. Google Maps allows students to view the business hours and current busyness of dining establishments, but not their day-to-day menu. The Purdue Dining mobile application allows users to view the menus for each dining court, each food item's nutrition facts, and the dietary categories it falls into, however there is no capability to be able to perform any filtering or receive any recommendations.

2.3 Limitations

The limitations of these applications is that they all work as their own separate service and not together. Busy students should not have to use multiple services in order to figure out where they

should eat. The Purdue dining menu website should be more intuitive to use and allow the students to more easily find the food items they enjoy (and that follow their dietary restrictions/preferences). The existing Purdue menu software also doesn't have any rating or recommendation system for personalized food location proposals. Our goal is to create a centralized application that provides busy students the best and easiest experience possible in finding food options that fit them.

3. Functional Requirements

3.1 Login, User Profile, General

1. As a user, I would like to log in using my Purdue SSO login, email, or phone number
2. As a user, I would like to be able to reset my password associated with my account if I registered using email or phone number and forgot my password.
3. As a user, I would like to be able to create a username associated with my account
4. As a user, I would like to be able to create a profile picture
5. As a user, I would like to be able to edit my personal information
6. As a user, I would like to be able to access Füdstops on both mobile and desktop devices.
7. As a user, I would like there to be a help feature in order to report a problem.
8. As a user, I would like all my data associated with the app to be stored in my account that I login with

3.2 Viewing Active Hours of Dining Courts

9. As a user, I would like to be able to view how busy a dining court is at all hours during the day.

3.3 Viewing Menu Items

10. As a user, I would like to be able to view what menu items are available at each dining court on a specific day during breakfast, lunch, and dinner hours.
11. As a user, I would like to have access to the nutrition facts for each food item on the menu.
12. As a user, I would like to be able to view popular menu items at each dining court (algorithm to calculate this TBD).
13. As a user, I would like to see whether a food item will be served on future dates.

3.4 Filtering Food Spots

14. As a user, I would like to be able to filter food spots by only those that align with my dietary preferences/restrictions (e.g. vegetarian, soy-free, gluten-free, etc).
15. As a user, I would like to be able to filter dining courts by those that align with dietary preferences/restrictions that I select in a filter menu.
16. As a user, I would like to be able to order dining courts by their busyness at the current hour.

17. As a user, I would like to be able to order dining courts by their name in alphabetical order.

3.5 Filtering Menu Items

18. As a user, I would like to be able to filter menu items by only those that align with my dietary preferences/restrictions (e.g. vegetarian, soy-free, gluten-free, etc).
19. As a user, I would like to be able to filter menu items by those that align with particular dietary preferences/restrictions that I select in a filter menu.
20. As a user, I would like to be able to order menu items by their name in alphabetical order.
21. As a user, I would like to be able to filter menu items by relevant aggregation categories (e.g. low-calorie, low-fat, dessert, etc).
22. As a user, I would like to be able to filter menu items by their cuisine.

3.6 Rating Menu Items

23. As a user, I would like to be able to rate food items I have consumed.
24. As a user, I would like to vote for commonly clicked on items in the menu so that they appear in dining courts.

3.7 Saving Menu Items

25. As a user, I would like to be able to save menu items I enjoyed.
26. As a user, I would like to be able to find recommendations for food similar to menu items I saved.

3.8 Dietary Preferences/Restrictions

27. As a user, I would like to be able to select my dietary preferences.
28. As a user, I would like to be able to select my dietary restrictions.

3.9 Receiving Recommendations

29. As a user, I would like to receive recommendations for dining courts based on my food preferences/restrictions.
30. As a user, I would like to receive recommendations for dining courts based off of my distance for each dining court.
31. As a user, I would like to have a tab I can click on to generate recommendations on where I should eat for my next meal and the item(s) I should eat from that spot (breakfast, dinner, lunch)
32. As a user, I would like to have a tab I can click on to generate recommendations on where I should eat for my next meal (breakfast, dinner, lunch)
33. As a user, I would like to be able to sort my recommendations by rating, relevance, and distance.

3.10 Viewing Food Spot Information

34. As a user, I would like to be able to view the opening and closing hours of a dining court

35. As a user, I would like to be able to view the contact info of a dining court
36. As a user, I would like to be able to get the directions/address to a dining court
37. As a user, I would like to view when breakfast, lunch, and dinner hours are at each dining court

3.11 Searching for menu items and food spots

38. As a user, I would like to be able to search for a term, and have all food items matching that term be displayed, as well as the dining court its being served in, the time of day, and on which day

3.12 Notifications

39. As a user, I would like to receive text messages (if I opt in) when menu items I enjoyed are offered soon in a dining court
40. As a user, I would like to receive text messages (if I opt in) of recommendations of menu items that I may enjoy based on what I like and my dietary preferences/restrictions.

3.12 Retail (if time allows)

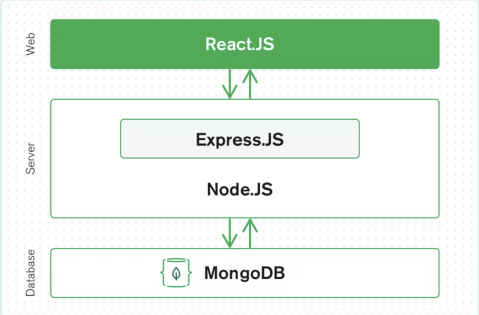
41. As a user, I would like to be able to have a separate tab for retail restaurants
42. As a user, I would like to be able to order retail restaurants by their distances from me
43. As a user, I would like to be able to filter retail restaurants by their busyness at the current hour
44. As a user, I would like to be able to view how busy a retail restaurant is at all hours during the day.
45. As a user, I would like to be able to filter retail restaurants by whether they contain foods following my dietary preferences/restrictions
46. As a user, I would like to see an about section for each retail restaurant
47. As a user, I would like to get directions or the address to the restaurant
48. As a user, I would like to see the hours of the restaurant
49. As a user, I would like to be able to view the menu of the retail restaurant
50. As a user, I would like to have access to the nutrition facts for each food item on the menu.
51. As a user, I would like to be able to see when meal swipes are accepted at the retail restaurant during which hours on which days
52. As a user, I would like to be able to view popular menu items at each retail restaurant (algorithm to calculate this TBD).
53. As a user, I would like to be able to filter retail restaurants by only those that align with my dietary preferences/restrictions (e.g. vegetarian, soy-free, gluten-free, etc).
54. As a user, I would like to be able to retail restaurants by those that align with dietary preferences/restrictions that I select in a filter menu.
55. As a user, I would like to be able to order retail restaurants by their name in alphabetical order.

56. As a user, I would like to be able to filter retail restaurants menu items by only those that align with my dietary preferences/restrictions (e.g. vegetarian, soy-free, gluten-free, etc).
57. As a user, I would like to be able to filter retail restaurants menu items by those that align with dietary preferences/restrictions that I select in a filter menu.
58. As a user, I would like to be able to order retail restaurants menu items by their name in alphabetical order.
59. As a user, I would like to be able to filter retail restaurants menu items by relevant aggregation categories (e.g. low-calorie, low-fat, dessert, etc).
60. As a user, I would like to be able to rate retail restaurants food items I have consumed.
61. As a user, I would like to be able to save retail restaurants menu items I enjoyed.
62. As a user, I would like to be able to find recommendations for food similar to retail restaurants menu items I saved.
63. As a user, I would like to receive recommendations for retail restaurants based on my food preferences/restrictions.
64. As a user, I would like to receive recommendations for retail restaurants based off of my distance for each establishment.
65. As a user, I would like to be able to view the contact info of a retail restaurants
66. As a user, I would like to be able to search for a term, and have all food items matching that term be displayed, as well as the retail restaurant which is serving that item, and its hours on the current day
67. As a user, I would like to be able to filter retail restaurants by their cuisine.

4. Non-Functional Requirements

4.1 Architecture

We plan on completely separating the frontend and backend of our application. This is in the interest of intersystem independence as well as for the ease of developing the software.
We will be using the MERN stack (MongoDB, Express, React, Node.JS) to create our web application, mainly with JavaScript and JSON. The frontend will be made using React, and will receive dining data from the backend with API calls. Also, we will use ChakraUI for access to components to make a clean and well-designed web-app.



Frontend - React & ChakraUI , Web Server - Express & Node, Database - MongoDB

1. As a user, I expect to use a web app where my login information/preferences are saved (database).
2. As a user, I expect the website to be straightforward to use and clean to view (React framework + Chakra UI components).

4.2 Performance

A key component of this application is that it should be usable on-the-go so that users may quickly receive information or recommendations for dining establishments. As such, it is imperative that the application be as responsive as possible. The application should be able to handle many different requests at once in order to handle spikes in usage during peak dining times.

1. As a user, I expect a response time within 400 milliseconds during idle dining periods.
2. As a user, I expect the web app to have a response time within 600 milliseconds during peak dining periods (12pm - 1pm, 6pm - 7pm).
3. As a user, I expect the web app to be accessible 24/7, with a max down time of 3d 15h 39m 29s (99% SLA).

4.3 Security

Security is essential in the development of our software because we will be handling potentially confidential/sensitive user information. This includes, but is not limited to, their authentication information and location. Our software will also be utilizing databases for the storage of multiple types of data. So, preventative measures must be taken to prevent any such exploits, which include maintaining a keen awareness of the security of our app when developing, hiding the visibility of database errors on our product, and sanitizing all user input, including login forms, by removing any potentially malicious code elements such as single quotes.

4.4 Usability

Because this application is intended for general use by the Purdue student body, it is necessary that it be as accessible for people of varying technical familiarity and computer literacy. The interface must be intuitive and easy to navigate, with important information such as the most convenient or highest-recommended location being easy to spot.

4.6 Scalability

Our software will be extendable to different types of food service locations, not just Purdue University Dining Courts but to other universities if they allow the app to be used for and access their residential dining court information and menus. The software will also be applicable to retail locations, made possible by Google's Place API (tentative).

4.5 Hosting & Deployment

For demonstration purposes we intend to run a local server. MongoDB Atlas will allow us to host MongoDB for our application. The React frontend will be hosted using Netlify and the Node backend will be hosted using Heroku, based on the following reference material: https://niruhan.medium.com/deploying-mern-fullstack-application-on-the-web-for-free-with-netlify-and-heroku-87d888012635. If we deploy the application, we will look into using AWS Web Servers for hosting the webapp for public use.