SW Engineering CSC648/848 Spring 2021

Hermes

Team 03

Milestone 1

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Roberto Herman - Team Lead (email: rhermanvaldivia@mail.sfsu.edu)
Alex Pena - Backend
Amit Joshi - GitHub Master (email: ajoshi2@mail.sfsu.edu)
Angela Avina Garcia - Front End
Jacob Sebastian - Backend Lead (email: jsebastian@mail.sfsu.edu)
Jarvis Yu - Front End Lead

History Table

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1. Executive Summary

As a student, did you ever sit in class trying to listen to what your teacher is trying to say, but can't pay attention to her because you're too distracted by the growls in your stomach? Have you ever forgotten your lunch at home? Did you ever grow tired of the food choices at your campus? With Hermes, those days are over. Hermes is here to provide students and faculty with plenty of food options, right at their fingertips, with fast delivery times, straight to their doorstep! Hungry on a dark, rainy night? No problem! Students can stay in their dorm, order food, and finish their homework while their food arrives. No more long, hasty walks to Stonestown Mall's packed food court. No more being late to class because of the long waiting lines at Cafe Rosso. No more dangerous late night MUNI rides just to get some deliciously warm dumplings.

Online food delivery is a billion-dollar industry and there's no doubt students are already using apps such as Door Dash and Uber Eats to get their food delivered. However, none of the popular food delivery apps cater to the needs of SFSU students and faculty like we do. We are here to make their customer experience as enjoyable and convenient as possible. Our goal is to deliver food to any location you can think of within the campus grounds at lightning fast speeds. Because all deliveries made through our app are delivered to campus, delivery drivers can make less round trips, decreasing delivery times and lowering operation costs for restaurants and drivers. Restaurants go through a straight forward sign up process where they're guided step by step through the registration and menu creation process. There's no better way to gain loyal and regular customers than being the go-to restaurant for the campus. A restaurant owner can obtain immediate exposure to the entire student body and faculty staff, and the drivers are equipped with a built-in campus map so they never get lost. It's as easy as that! Once restaurants are signed up, customers can joyfully browse through any nearby restaurant and place their orders.

Hello there, we are a team of six dedicated computer science students with dreams of making campus life more enjoyable for everyone. We hope to learn as much as we can about e-commerce in general, as well as the ever-growing online food delivery industry.

2. Personae and main Use Cases

Student : Tony - a full time college student	**Use Case:**
Pain points ● Does not drive ● Does not like to walk around at night ● Is always in a rush ● Is on a small budget ● Is worried about covid safety Goals ● Eat healthy ● Succeed in school Skills ● Continuously using the phone ● Quick at adapting to new technologies ● Able to navigate applications and websites	Tony is a hungry student with a craving for pizza. Unfortunately it's dark outside, he doesn't have a car, and he's scared to walk to a restaurant all by himself. Instead, he decides to use our app to get his food delivered straight to his dormitory's well-lit entrance. He goes on our app and browses through all the nearby pizza places, checking out their menu items as well as their price. After deciding on his order, he places it, gets an order confirmation, and now waits for the driver to get and deliver his food. Tony realizes that he is even more happy that he decided to get the food delivered because now he can get back to finishing his homework while he waits! When the delivery driver arrives, he gets a notification that they are waiting at the entrance of the dorm. Tony is happy that he was able to find food at this time of night, and that he didn't have to walk out in the dark, cold, foggy San Francisco streets. 

Delivery Person: Marco - main provider for family looking for flexible hours	**Use case:**
Pain point: ● Not knowing the city (where to deliver) ● Not knowing the campus Skills: ● Driving (license) ● Navigation ● Customer service ● Able to use new technology Goals: ● Earn money ● Get to know the city better ● Learn customer service ● Get food discounts	Marco is a delivery driver for a restaurant that is already registered with our app. After going through the signup process, he is now able to see incoming customer orders to the restaurant. Since the drop off locations are always to the SFSU campus, Marco can take multiple orders with him and deliver them all once he gets to campus instead of having to go back and forth. When the food is prepared, he notifies the customer through the app that the order is on its way. A map will let Marco know the directions to the drop off location, which is always some place around the SFSU campus. He's never been to the SFSU campus so he's also glad that there's a campus map available for reference as the navigation map doesn't show building numbers. When he gets there, he notifies the customer that he has arrived, the customer comes, pays him, and Marco can now deliver more orders until he runs out and has to go back to the restaurant. At the end of the night, he thinks about bringing home some food for his family, and remembers that Hermes gives drivers food discounts, so he orders some food and heads home. 

School Staff: Danielle - is a full time professor	**Use Case:**
Pain point: ● Safety ○ No-contact delivery ● Convenience ○ Time ○ Distance ○ Deliver to classroom (during meetings, etc) ● Budget ○ On a small salary Skills: ● Teaching ● Able to use web applications ● Strong understanding of new technology ● Usually has a computer/ or laptop nearby Goals: ● Help students	Danielle is a full time professor who does not seem to have the time to grab a bite to eat. Danielle has spent the entire morning teaching and helping out her students she forgot to prepare for her staff meeting. She knows that her meeting is at noon and needs to provide lunch for her fellow colleagues. She needs something quick and appetizing to order for herself and colleagues. She goes to our app and searches for restaurants that can deliver to the campus building where the meeting is being held. She selects the restaurant and chooses what she wants to order for her and her colleagues. She is excited to use the app and shows her colleagues how easy it is to use the app. She gets a notification with the order confirmation as well as the information about the delivery driver. When the delivery driver is in the building, she gets a notification, and gets her food. She is strongly worried about covid safety and was content to see that the delivery driver was respecting her safety. With this positive experience she recommends the app to her students and colleagues and decides to use it frequently since she is always in a rush. 

Restaurant Owner: Miguel- brand new to the restaurant industry looking for ways to expand business	**Use Case:**
Pain point: ● Advertising ● Customer service ● Promotions/deals ● Competition ● Online presence ● Efficiency ● Reviews/Ratings ● Delivery service ● Cost effective ● Popularity with students Skills: ● Providing great food ● Quick service ● Not very technologically diverse ● Has a difficult time using new technology ● Knows how to use a website Goals: ● Expand his business and have more clientele ● Top rate and become popular	Miguel is a brand new restaurant owner who is close to the University. He notices that many of the college students are quickly ordering meals. Miguel started to hear the students talk about an app where they can order food and have it delivered to campus. He wants to advertise his restaurant more and make it approachable for the college students. Miguel decides to register his restaurant on the app. He is not very good with using applications, but is in great need to bring more business to his restaurant. He goes to our app and starts to see that multiple small restaurants are being advertised and are providing reasonable prices for their food. Thinking about how popular his restaurant has become within the college students he wants to make sure that it is approachable for them. Without much hesitation Miguel registers to have his restaurant advertised and is guided with the next steps on how to enroll his restaurant, add new menu items, and add his delivery drivers. After he's finished, his driver receives an invitation to register in the app as his boss' driver. After his driver registers and the restaurant and menu get approved by an administrator, he is excited to see he's starting to receive orders and his driver is ready to fulfill those deliveries. 

Admin: Jess- an employee who wants to provide a safe atmosphere for the users and restaurants	**Use Case:**
Pain point: ● Buggy software ● No UI ● Bad customers ● Bad drivers ● Bad restaurants ● Bad reviews Skills: ● Attention to detail ● Integrity and honesty ● Quality ● Has high technological skills ● Very quick learner ● Always has a technological device ● SQL Goals: ● Provide the best service	Jess is an employee who is fascinated with computers and is always on the lookout for new ways to bring a community together. She currently works as the administrator for our application and she is continuously reviewing restaurant applications, menu items, and reviews. She is happy that she gets to work with the MySQL Workbench, as the UI makes it easy to do her job. Jess is the facilitator and likes to keep everyone in check. Jess communicates with the drivers and restaurants reassuring that they provide safe service. Jess' goal is to filter out all profanity and reach out to restaurants and drivers who receive bad reviews. She wants to make sure that all restaurants are safe and inviting to all users, and that they follow our guidelines and community standards. Jess wants to make sure that the app is frequently used and that it becomes popular among the SFSU campus as well as restaurant owners and drivers. 

3. List of main data items and entities--data glossary/description

Main terms

- **Guest**: A user that has not registered
- **User**: Registered drivers, restaurant owners, and SFSU students / faculty
- **Customer**: Faculty and Students who are registered and are ordering food
- **Restaurant**: A business that prepares and serves food and is registered
- **Administrator**: The administrator of the database
- **Driver**: An entity who delivers food from restaurants to campus
- **Order**: An order placed by User
- **Restaurant Owner**: A user that owns a restaurant and registered

Types of Users (In terms of permissions)

- **Guest**
  - Has limited access to the website.
  - Has permission to access as much of the website as possible without having to register (lazy registration).
  - Has permission to sign up as a registered user if a student or faculty.
- **Customer** (student/faculty)
  - Has all the permissions as the guest and more
  - Has permission to buy and place food orders from approved restaurants.
- **Administrator**
  - Has special permission to the database to perform maintenance.
- **Restaurant Owne**r
  - Has permissions to upload more menu items to their online restaurant menu
  - Has permission to remove items from their online restaurant menu.
- **Deliver Driver**
  - Has permission to know what the customer ordered
  - Has permission to know the location of the requested customer order
  - Has permission to view unclaimed delivery orders
  - Has permission to select an unclaimed delivery and deliver it

Data structures

- **User**
  - An object that has information about a person who is currently using the website that has:
    - Account type
    - email
- **Menu**
  - Data structure that holds list of food and drink items a customer can order
- **Food**
  - A food object that contains the following fields:

        - Name
        - Food type
        - Price
        - Size
        - Description
- **Driver**
    - A driver object that contains:
        - Name
        - Distance
        - Order the driver is delivering
- **Restaurant**
    - A restaurant object that contains:
        - Name
        - Location
        - Menu
- **Order**
    - An object that contains details about a specific order such as:
        - Price
        - Customer
        - Time of order
        - Place to deliver

Main Entities

- **Account Section**
    - Guest
        - A person who is using the website but is not registered
        - Unknown to whether they are a student, faculty, driver, or restaurant owner.
    - Account
        - The account entity is in charge of keeping track of the entities that are tied to the user's specific account such as current orders and past purchases.
    - User
        - Any student, Driver faculty, restaurant owner who is registered and is logged into their account
    - Restaurant Owner
        - Special account for restaurant owners
    - Administrator
        - Special account that has access to statistical information about the database to provide maintenance.
- **Restaurant Section**
    - Restaurant
        - The main restaurant entity
        - Hours
        - Location

    - Restaurant Owner
        - The user that is registered and claimed the restaurant
    - Menu
        - List of food and drinks a customer can order
    - Food
        - A food item a customer can order
    - Drink
        - A drink item a customer can order
    - Order
        - Has details about the order such as price, invoice, and what was purchased and when it was purchased
    - Invoice
        - Purchase details of an order

- **Delivery Section**
    - Delivery Driver
        - Has information pertaining to the delivery driver
    - Order
        - Information of the order
    - Location
        - Street
        - Address
        - Zip Code

4. Initial list of functional requirements

1. Restaurant Owner
    a. Restaurant owner shall add / remove menu items.
    b. Restaurant owner shall add / remove their restaurant.
    c. Restaurant owner shall upload restaurant pictures.
    d. Restaurant owner shall upload menu item pictures.
    e. Restaurant owner shall add multiple restaurants.
    f. Restaurant owner shall invite drivers to register.
2. User
    a. User shall register for an account.
    b. User shall login to the website.
    c. User shall update their profile.
3. Customer
    a. Customer shall add / remove products to shopping cart.
    b. Customer shall browse restaurants.
    c. Customer shall set their own location for delivery .
    d. Customer shall cancel order for free within a penalty-free time limit.
4. Application
    a. App shall authenticate user upon login.
    b. App shall validate user's email upon registration.
    c. App shall update the status of orders in real time.
    d. App shall calculate the cart's total in real time.
    e. App shall keep track of order history for users.
    f. App shall give users promotions / deals.
    g. App shall update driver's location for the customer to see.
5. Spotlight
    a. There shall be spotlight on the homepage for the restaurant of the day.
    b. There shall also be spotlight on any deal choices.
6. Driver
    a. Driver shall have a navigation map.
    b. Driver shall have access to a campus map.
    c. Driver shall accept or deny orders.
7. Administrator
    a. Administrator shall add / remove restaurants.
    b. Administrator shall add / remove / change items on the menu.
    c. Administrator shall remove accounts.
    d. Administrator shall suspend accounts.
    e. Administrator shall add / remove / change pictures,logo's banners.

5. List of non-functional requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0. Application delivery shall be from chosen cloud server
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
3. All or selected application functions must render well on mobile devices (specifics to be developed in consultation with users e.g. Petkovic)
4. Ordering and delivery of food shall be allowed only for SFSU students, staff and faculty
5. Data shall be stored in the database on the team's deployment cloud server.
6. No more than 50 concurrent users shall be accessing the application at any time
7. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
8. The language used shall be English (no localization needed)
9. Application shall be very easy to use and intuitive
10. Application should follow established architecture patterns
11. Application code and its repository shall be easy to inspect and maintain
12. Google analytics shall be used
13. No e-mail clients shall be allowed.
14. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
15. Site security: basic best practices shall be applied (as covered in the class) for main data items
16. Application shall be media rich (images, maps etc.). Media formats shall be standard as used in the market today
17. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
18. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Spring 2021 For Demonstration Only at the top of the WWW page. (Important so as to not confuse this with a real application).

6. Competitive analysis

Feature	Grub Hub	Door Dash	Uber Eats	Hermes
Register for an Account	+	+	+	+
Browse restaurants	+	+	+	+
Shopping Cart	+	+	+	+
Location search	+	+	+	+
Recommended Restaurants	+	+	++	+
Able to choose delivery or pickup	+	+	+	+
Schedule	+	+	+	+
Pay online	+	+	+	-
Specific delivery location and time on campus	-	-	-	++
Campus map for drivers	-	-	-	++

Our planned advantages lie in the deliveries to SFSU students and faculty. With online orders, the main location to have food orders delivered will be around the SFSU campus. We have a planned feature where the user can schedule food to be delivered at a specific location at a specific time on campus, allowing the user to pick up their orders when they have free time ie. leaving after class. With the inclusion of basic features of other food delivery apps, SFSU students and faculty have an easier time in having food delivered.

7. High-level system architecture and technologies used

Operating System	Ubuntu Server 20.04 LTS (HVM), SSD Volume Type 64-bit (x86)
Database	MySQL v8.0.23
Web Server	NGINX 1.18.0
Server-Side Language	JavaScript
Web Framework	React, Node (v14.15.5), Express
IDE	Visual Studio Code
Libraries	Bootstrap/React-Bootstrap

8. Team and roles

Alex	Backend
Amit	GitHub Master
Angela	Front End
Jacob	Backend Lead
Jarvis	Front End Lead
Roberto	Team Lead / Document Master

9. Checklist

So far all team members are engaged and attending ZOOM sessions when required.	**OK**
Team found a time slot to meet outside of the class	**OK**
Back end, Front end leads and Github master chosen	**OK**
Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing	**ON TRACK**

Team lead ensured that all team members read the final M1 and agree/understand it before submission.	**OK**
Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)	**OK**