Streamline Dining

https://github.com/karneetarora/SE-Group-4

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Individual Contributions Breakdown

Topic	Harman	Eugene	Max	Joel	Justice	Karneet	Pablo	Srinu	Talya
Individual Contributions	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%
Summary of Changes	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%
Customer Problem Statement	30%	-	10%	10%	10%	10%	10%	10%	10%
Glossary of Terms	16%	-	20%	-	16%	16%	16%	16%	-
Functional Requirements	30%	-	10%	-	10%	10%	20%	10%	10%
Nonfunctional Requirements	10%	-	-	-	-	30%	30%	-	30%
User Interface Requirements	-	-	10%	10%	-	20%	20%	-	20%
Effort Estimation	10%	-	-	-	-	30%	30%	-	30%
System Sequence Diagrams	50%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
Use Case Diagrams	8.75%	8.75%	8.75%	30%	8.75%	8.75%	8.75%	8.75%	8.75%
Fully Dressed Description	-	-	-	-	-	40%	-	30%	30%
Traceability Matrix	6.25%	6.25%	6.25%	50%	6.25%	6.25%	6.25%	6.25%	6.25%
Domain Analysis	-	-	-	-	-	-	50%	30%	20%
System Operation Contracts	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	25%	25%
Project size Estimation	6.25%	6.25%	6.25%	6.25%	50%	6.25%	6.25%	6.25%	6.25%
Plan of work	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	50%	6.25%
References	10%	10%	10%	10%	10%	10%	20%	10%	10%

Summary of Changes

- Created new format for proposal
- Completed system requirements
- Merged both parts, added pagination, organized content, expanded individual contributions, made a table of contents, corrected system sequence designs - Harman

I. Customer Statement of Requirements

1. Problem Statement

A restaurant is a complex business that has many different aspects that have to all work in conjunction for operation. Restaurant owners must ensure that each of these aspects and roles are able to work together efficiently and communication of information is vital. Currently many restaurants are still operating in an environment that is not too different that it was pre-digital age, coordinating by word of mouth or paper; this can often lead to communication errors amongst the staff members, which can be pinpointed to improper hearing or messy writing.

Beyond coordination issues, one can observe similar inefficiencies in the payment process which often results in customers unnecessarily waiting additional time just for their server to process their transaction. This allotted time could reduce the waiting time for another potential customer to be seated and served.

Our project aims to fix these problems as well as ones that are faced in more nuanced situations such as when there is interaction between different roles and actors in a restaurant environment.

a.) Managers

The manager has the most responsibilities in a restaurant and must be up to date information about all operations.

Employee Management

- There are many different employees that work under a manager, so management must be able to keep track of employee schedules, supervise payroll, log hours worked by employees, log their attendance, and their performance. In the event someone is unable to make their shift, a manager should be able to view all the schedules of the employees, so they may able to find a replacement. In addition, a manager should be able to add new employees into the system which can require a lot of documenting and paperwork. The manager should be able to see which employee is working on which order and which servers are attending to which table.

Inventory Management

- Keeping track of items can be a cumbersome task, especially if everything is not already itemized and accounted for. There are so many different units that are needed in a restaurant that it is very easy to lose track of inventory as well as which items need to be replenished. Therefore, managers should have access to real time inventory levels as well as an interactive list of which items need to be ordered.

Order Management

- Oftentimes if a customer has an issue with their order, they ask for the manager. So, a manager must have access to all orders, completed orders and those being processed, so they can seamlessly address any issues or complaints a customer may have. The manager also needs an easy way to track which employees are tied to which order/table. Being able to track sales, feedback, and item popularity would also help managers decide which items to keep or change on the menu.

b.) Chefs

Chefs play the most vital role, as they are responsible for producing good quality products and need the expertise to add or remove ingredients depending on the customers' needs. It is crucial for the chef to be aware of any allergies or omissions a certain table may have, so they can accommodate it while prepping the meal. They must also accommodate for certain requests, I.e. when a customer orders a steak, they may specify how well done they want the meat. If a server's handwriting is messy or they didn't hear the customer correctly, it could cause potentially fatal issues with the customer. The chef should be able to see the customer's order online to minimize mistakes. When an order is ready to be taken to the host for takeout or to the customer table, the chef should be able to communicate the order status to the server. When the chef is working on an order, there needs to be a way to update the inventory accordingly in order to keep account of items in stock.

c.) Servers

Servers are responsible for more than one table at a time, so they need to be quick in order to be able to tend to guests. Every server should have access to the menu and should be able to select the items to place the order directly. A server should have real time information about the tables they are serving, the orders that were placed, and the progress of the orders to ensure efficiency. To expediate the transaction process, servers should be able to take payment on the go. For takeout orders, they should be able to pull up a specific order, check the status of the order, and complete it.

Servers should have access to the employee portal.

d.) Customers

A customer desires to enter a restaurant, be seated, have their order taken, receive their food, and pay for their meal as quickly and seamlessly as possible. Not all customers are dine-in orders, so they should be able to order takeout or delivery without having to call. There are many times when staff is occupied with a busy day and phone calls require long waiting times and lead to poor a poor customer experience. An application can help to mend some of these issues.

Sometimes a customer is forced to wait for a long time before being given a table. There should be a way for customers to check their device to see if the store has any open seating available as well as a reservation system. They should be able to get estimated wait times in case there is a queue for tables. A customer should also be able to order items as soon as they sit down

rather than waiting for a server to come by and take down the desired items. There should also be a way of viewing and editing menu items since some customers are allergic to certain ingredients.

After customers are done with their meal, they are forced to stay seated until the server brings the check, and the payment is processed. This excessive time can be saved if customers were able to pay by themselves virtually. After checking out, customers who paid virtually should be prompted to submit feedback about their experience (such as food quality, customer service etc.). For their time and effort, customers should be rewarded with points or vouchers for their next visit.

e.) Hosts

The hosts should be able to track the occupancy status of all the tables. They are the first point of contact for the customers, so the host must decide where to seat customers whether they have made previous reservations or not. They need to be informed of the estimated wait times and have to be the point of contact for takeout/delivery orders since they are the closest to the entrance. Hosts should also encourage customers to sign up for the restaurant's application for a more seamless experience and rewards points. The host should update the order interface accordingly if a customer has the application or not. Customers with the application should be able to check-in with the host at the entrance.

Host should have access to the employee portal

f.) Delivery Drivers

The delivery drivers should be able to see the orders and the addresses they need to deliver to. They should be able to deliver the orders in a timely manner so the customers can get their food hot and if a customer requests a specific time block, the drivers should know how far away the delivery is and what time they need to pick up the order and go to make the delivery in the time block. There should also be grouping of orders based on location and requested delivery time so the driver can deliver the food in the most efficient fashion.

g.) Bartenders

The Bartenders should know that all customers which are sitting at the bar section are of age, after a customer orders drinks, the bartender should know how many drinks such customer has order, and if it's above a certain drinks limit, they can refuse to serve the customer, keep a tab for the customer, and they should also be able to place orders and have them be brought to the costumers by a food runner.

II. Glossary of Terms

Actors – Humna beings that interact with our system.

Bartender – A role in the system. Person in charge of making alcoholic drinks, taking orders for cocktails to either people at the bar or to seated customers as well. Also keeps track of tabs and ID's for age verification. Bartender must be efficient and educated to know what a fake ID looks like.

Customers – A type of user role in the system.

Customer Portal – This is a log in page that will be used by customers to log into their specific configuration of our application.

Delivery Drivers – A role in the system. Collects and transports goods to destination, In a timely matter.

Drinks limit – limit amount of alcohol consumption, depending on state limit may vary.

Employee – A type of user role in the system.

Employee Portal – This is a log in page that will be used by Employees to log into their specific configuration of our application.

Employee Management – A database of active and discharged employees and all the accompanying properties.

Inventory Management – A live database of thew companies' inventory. This concept also contains automation that will intelligently order new supplies when the current supply level is below a certain threshold.

Employee - A user in the system.

Order – An item containing information about food that is to be prepared to a customer.

Order Management- A database of live and completed orders that is visible to waiters and managers.

Chefs – A user role in the system.

Host – is a person who greets and organizes customers, and assigns tables based on the restaurants policy.

Schedule – A chart of containing information regarding which employees are working on what days.

Servers – A user role in the system. Takes orders and deliver food to customers.

An order– An item containing information regarding table number, contents of the order, the creator of the order, and special notes such as customizations and allergens.

Inventory - Will have a running record of raw ingredients as well as keep track of utensils and other resources. Also, notifies manager and supplier when resources are running low.

Floor Map – A list of tables, capacity, and availability.

Profile – A status that a user has that will tell the system what information to give said user access to.

Payment – record of a financial transaction.

Wage – The hourly pay of each employee

III. System Requirements

Priority 5 highest priority

Priority 1 lowest priority

1. Enumerated Functional Requirements

Identifier	Priority	Requirement
REQ-1	5	The application will allow employees to log in to their own portal.
REQ-2	3	The application will allow employees to check their schedule, wage, and other logistical information.
REQ-3	5	The application will allow employees to look at ongoing order information.
REQ-4	4	The application will allow managers to add new employees.
REQ-5	4	The application will allow managers to add new menu items.
REQ-6	5	The application will allow managers to access inventory information and make orders.
REQ-7	4	The application will allow chefs to see order information.
REQ-8	5	The application will allow customers to log in to their own portal.
REQ-9	4	The application will allow customers to reserve a table when available.
REQ-10	2	The application will allow customers to receive rewards points through orders and feedback.
REQ-11	5	The application will allow customers to decide between takeout, dine-in, and delivery along with setting a time for takeout and delivery.
REQ-12	3	The application will let waiters know if customers need assistance.
REQ-13	3	The application will let waiters place orders and write any additional comments.
REQ-14	3	The application will let waiters know to check on costumers periodically.
REQ-15	5	Employees should be able to process transactions via application.
REQ-16	5	The application will allow the customer to order food through the application for either take-out or dine in
REQ-17	4	Application will forward a copy of the receipt to email address provided
REQ-18	2	Application will auto logout users out after 30 minutes of inactivity
REQ-19	3	Manager should be able to survey when employees are available

2. Enumerated Nonfunctional Requirements

Identifier	Priority	Requirement
NREQ-1	5	Customers are not able to update the menu
NREQ-2	5	Employees are not able to alter salaries
NREQ-3	2	The website should be able to handle 200 users at once
NREQ-4	3	Application must run IOS and Android
NREQ-5	4	Application must have a backup in case of failure.
NREQ-6	2	Application should have security in place to protect customer's data
NREQ-7	5	Employees are not able to change the schedule
NREQ -8	5	Employees are not able to update the menu
NREQ -9	4	Employees are not able to place orders for inventory

3. User Interface Requirements

Identifier	Priority	Requirement
IREQ-1	5	Must be easy to navigate through app
IREQ-2	5	Should be easy to backtrack to home page
IREQ-3	3	Display ingredients
IREQ-4	5	Display total with option to add tip
IREQ-5	3	Have menu visible with tabs above to jump to other categories
IREQ-6	2	Customers have option to search menu for specific item/ingredient
IERQ-7	2	Should display an average time of food preparation.
IREQ-8	4	Display different payment methods
IREQ-9	2	Allow menu sorting for customer preferences

IV. Functional Requirements Specifications

1. Stakeholders:

a. Restaurant Owners:

- Will help optimize their business's traffic and efficiency of employees

b. Restaurant Managers:

- Will be easier to manage the employees and other information required to manage a restaurant

c. Wholesale Restaurant Suppliers:

- Streamline the process of selling their products; more likely to have restaurants keep ordering from them if there is minimal effort to place the orders

d. Restaurant Customers

- Dining experience will be more efficient with less snags; simplified service means talking to less middlemen and getting the experience they desire

2. Actors and Goals:

Actor	Role	Goal
Manager	An employee that is responsible for daily restaurant management operations. This includes talking to customers to deal with complaints, checking worker's schedules to make sure there are enough employees and no over booking, and to deal with suppliers.	Log into the system Log out of the system Schedule employees. Access employee clock in Access employee clock out Access to stock level Approve stock orders Order maintenance works. Pay employees Pay suppliers
Chefs	An employee that reads the orders from the servers and creates the dishes ordered, including all of the omissions/allergies.	Log into the system Log out of the system Clock in for shift. Clock out of shift. See what menu item was ordered. Notify server when food is ready. Order stock. Notify manager about needed maintenance
Servers	An employee that provides direct customer service to the customers. This includes taking orders, answering question about the menu and taking payments from customers.	Log into the system. Log out of the system. Clock in for shift. Clock out of shift. Input orders from customers. Know when an order is ready. Accept payment from customers
Customers	Patrons of the restaurant.	Log into the system. Log out of the system. Make reservations. Access menu items. Put in an order. Process payment through system. Know when a delivery driver arrives.
Hosts	An employee that is responsible for seating incoming customers to a table based on	Log into the system. Log out of the system.

	availability. When online reservations are made, the host is responsible for ensuring that the table is available for the reserved time.	Clock in for shift. Clock out of shift. Access to online reservations. See which tables are empty. Assign customers to empty tables. Notify servers about customers arrival. Notify Busboy when customers are done.
Delivery Drivers	An employee that picks up food from the restaurant and delivers it to the customer in a timely fashion manner.	Log into the system Log out of the system. Clock in for shift. Clock out of shift. Access to customer details including name, address and contact. Get notification when food is ready for delivery.
Bartenders	An employee that prepares and pours drinks for customers. Once the drinks are prepared, the bartender marks it ready for service, so the server can give it to the customer.	Log into the system. Log out of the system. Clock in for shift. Clock out of shift. Access inventory of drinks. Notify manager for restocking.
Busboy	An employee who clears the table when customers are done and gets the table ready for the next customer.	Log into system. Log out of system. Clock in for shift. Clock out of shift. Know when a customer is done. Update of available table

3. Use Cases:

a. Casual Description:

UC – 1: Ordering: Allows an employee or a customer to place an order.

Derived From: REQ#5. REQ#13, REQ#16

UC – 2: Reservations: Allows a customer to reserve a table ahead of time for a certain time frame using the application for their party.

Derived From: REQ# 9

UC – 3: Payment: Allows the customer to pay through the application or though their server.

Derived From: REQ#15

UC – 4: Take-out: The customer can use the application to place an order for take-out for a scheduled time or for as soon as possible.

Derived From: REQ# 11

UC – 5: Food omissions: Allows customers to modify recipes based on their dietary preference or restrictions.

Derived From: IREQ# 6, IREQ#9

UC – 6: Food filtering: Allows customers to sort the menu based on ingredients/type of food they are looking for

Derived From: REQ#, IREQ# 3, IREQ#6

UC – 7: Clocking in/out: Allows employees to punch in and punch out of their shift using the application on the premises.

Derived From: REQ# 1

UC – 8: Login: Allow all users to log in from the standard portal

Derived From: REQ# 5, REQ# 8

UC – 9: Schedule Employees: Allows the manager to schedule employees through the app and helps minimize over and under scheduling

Derived From: REQ# 2

UC – 10: Inventory Management: Allows the manager or supplier to add items into inventory such as ingredients, restaurant ware, etc.

Derived From: REQ# 6, NREQ# 9

UC – 11: Payroll: Allow the manager to manage payrolls for employees.

Derived From: REQ# 1, REQ# 19

UC – 12: Menu modification: Allow managers and chiefs to modify the menu based on what ingredients are available.

Derived From: REQ# 13,

UC – 13: Ordering ingredients: Allow the chef to put in an order for more ingredients

Derived From: REQ# 6, REQ# 7,

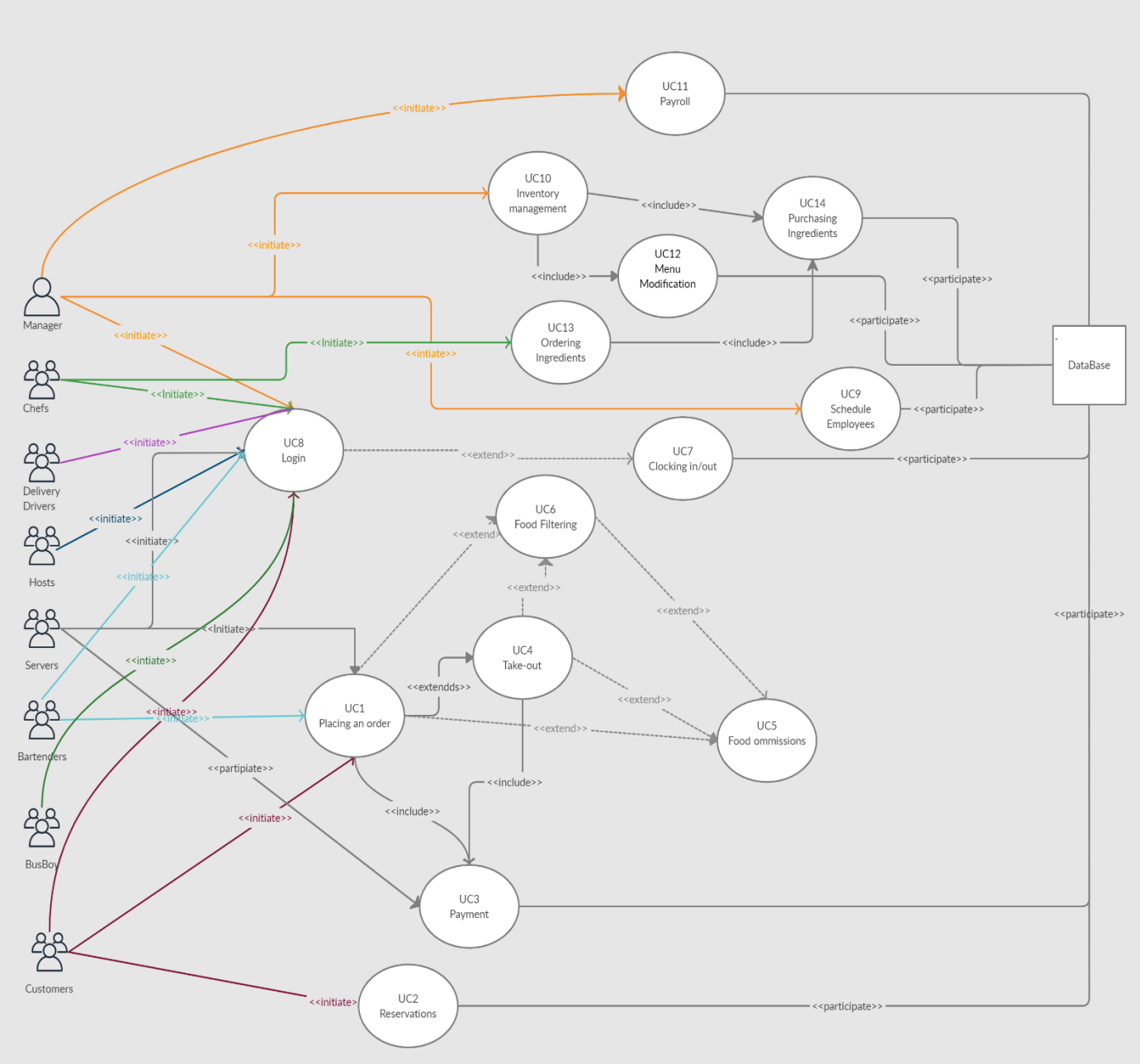
UC – 14: Purchasing ingredients: Allow the manager to approve the order created in UC 12.

Derived From: REQ# 6, NREQ# 9

UC – 15: Shipping ingredients: Allow supplier to view ingredient orders and provide and invoice.

Derived From: REQ# 6

b. Use Case Diagram



c. Traceability Matrix

Identifiers	P	UC-1	UC-2	UC-3	UC-4	UC-5	UC-6	UC-7	UC-8	UC-9	UC-10	UC-11	UC-12	UC-13	UC-14	UC-15
REQ-1	5							X				X				
REQ -2	3									X						
REQ -3	5															
REQ-4	4															
REQ-5	4	X							X							
REQ-6	5										X			X	X	X
REQ-7	4													X		
REQ-8	5								X							
REQ-9	4		X								X				X	
REQ-10	2															
REQ-11	5				X											
REQ-12	3															
REQ-13	3	X		X									X			
REQ-14	3															
REQ-15	5															
REQ-16	5	X														
REQ-17	4															
REQ-18	2															
REQ-19	3											X				
NREQ-1	5															
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NREQ-4	3															
NREQ-5	4															
NREQ-6	2															
NREQ-7	5															
NREQ-8	5															
NREQ-9	4															
IREQ-1	5															
IREQ-2	5															
IREQ-3	3						X									
IREQ-4	5															
IREQ-5	3															
IREQ-6	2					X	X									
IREQ-7	2															
IREQ-8	4															
IREQ-9	2					X										

4. Fully Dressed Description:

FDD: Ordering Dine-In

Related Requirements: REQ#5, REQ#8 REQ#13, REQ#16

Actor:

- Customer

Participating Actor:

- Server
- Database

Preconditions:

- The application is loaded and ready to be used

Postconditions:

Flow of Events for Main Success Scenario:

1. → Customer will open the application
2. ← Application prompts the customer to select “Login” or “Guest”
3. → They will specify if dine-in or take-out and if dine-in, they will specify their table number
4. ← System will display menu.
5. → Customer will select the food for their party including any omissions
6. → They will detail any serious allergies that their party may have
7. ← They will submit their order and it will go to the kitchen

OR

1. The server will complete these steps for the customer when they get to their table

FDD: Reservations

Related Requirements: REQ#1, REQ#8, REQ# 9

Actor:

- Customer
- Host

Participating Actor:

- Server
- Database

Preconditions:

- A customer is logged in

Postconditions:

- A reservation is created

Flow of Events for Main Success Scenario:

1. → Customer will login to portal.
2. → Customer will select reservation option.
3. ← System will display available reservation times.
4. → Customer will select time and party size for reservation.
5. ← Customer will be asked to submit any additional information.
6. → Customer will submit any additional information.
7. ← Customer will be asked to confirm reservation.

8. → Customer will be asked to confirm reservation.
9. ← Reservation will be created with the given information and stored in the database.
10. ← Available reservation times will be updated.

OR

1. Customer will call the location and the host will do the following steps.

FDD: Payment

Related Requirements: REQ#1, REQ#8, REQ# 15

Actor:

- Customer
- Waiter

Participating Actor:

- Server
- Database

Preconditions:

- A user is logged in.
- The order and respective bill are displayed.
- The user will input payment details.

Postconditions:

- Payment is confirmed.
- A receipt is provided.

Flow of Events:

1. → User will login to the portal.
2. → User will select the “Check/pay” option.
3. → User will insert credit card information.
4. ← User will receive receipt.
5. ← Order and payment details are archived.

OR

1. Waiter will do this for the user.

FDD: Clocking in/out

Related Requirements: REQ#1, REQ#2

Actor:

- Employees

Participating Actor:

- Database

Preconditions:

- Employee is logged in

Postconditions:

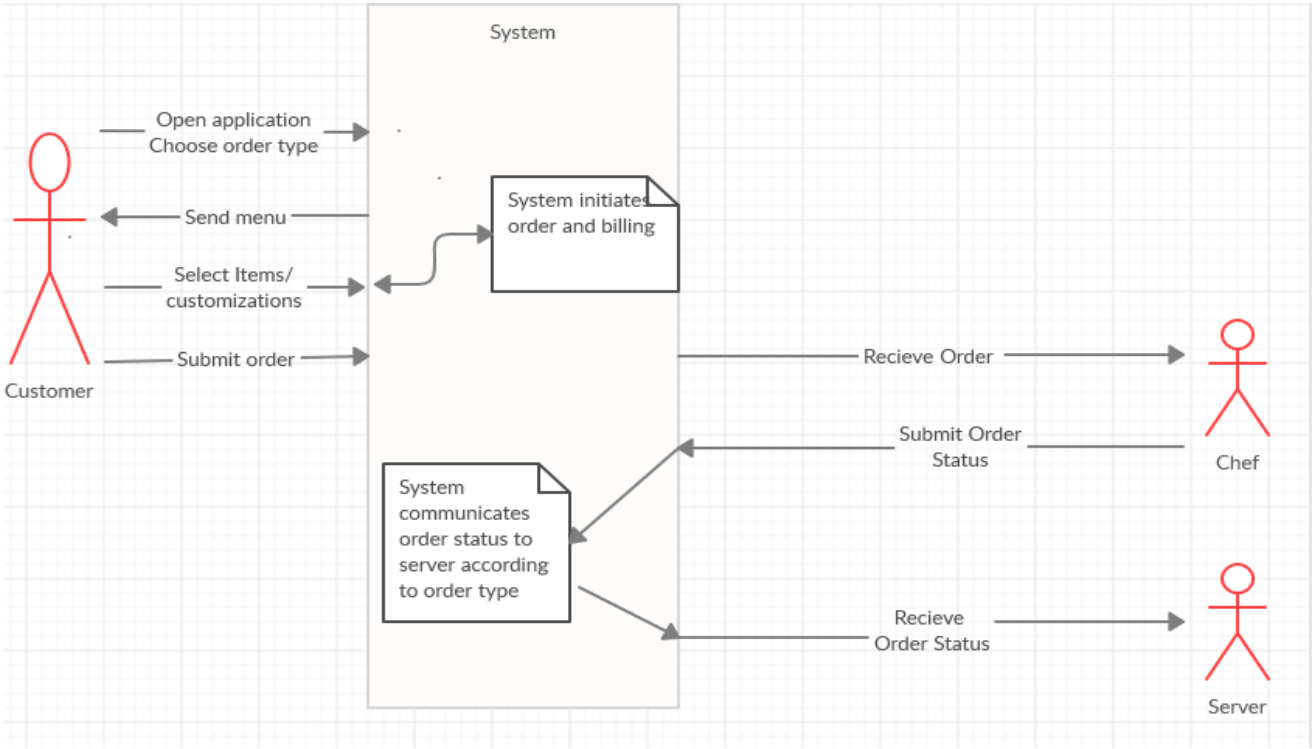
- User is clocked in/out of their shift
- Database logs information for Manager

Flow of Events:

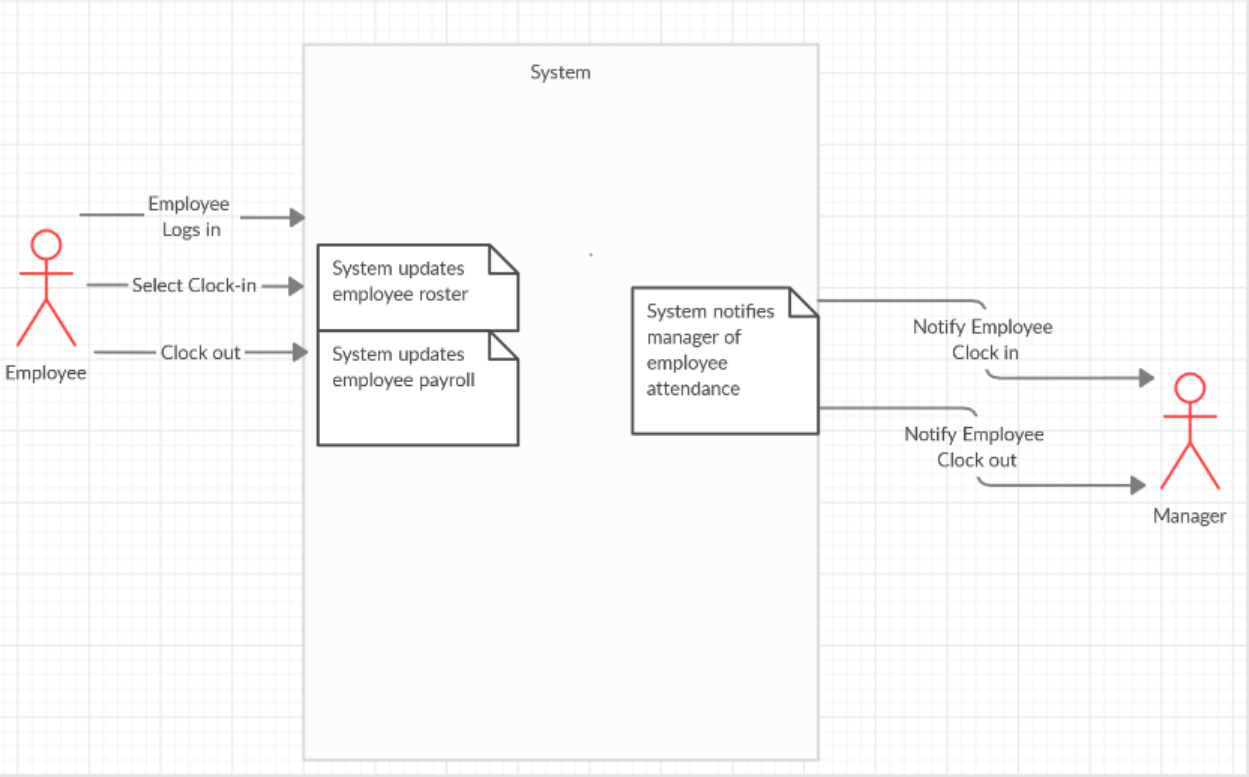
1. → Employee opens up application

2. ← The system prompts employee to select their role and log in
3. → Employee logs in to application
4. ← System displays employee page to employee
5. → Employee selects “Clock-in” option
6. ← System tracks time of clock in
7. ← System checks employee’s location to ensure that employee is at restaurant
8. → When the employee is done working, employee will select “Clock-out” option
9. ← System tracks time of clock out
10. ← System checks employee’s location to ensure that employee is at restaurant

d. System Sequence Design



Placing an Order: From Customer to Server



Employee Clock In

V. User Interface Specification

1. Preliminary Design

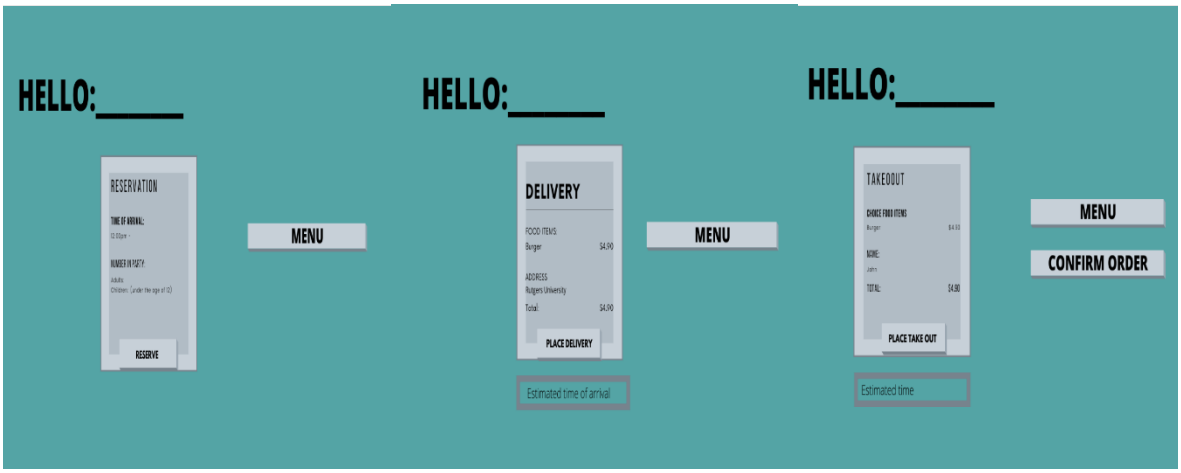
A). Home Screen:

This screen will have the option to log in as a customer or as an Employee of the restaurant.

B). Customer Interface:

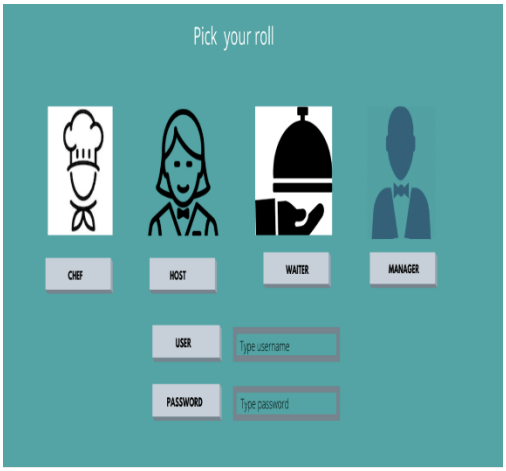
The first screen asks the customer for their credentials such as username and password, after the customer has enter their credentials the next screen will display which show the different options that the customer can chose from:

Making Reservation Making Delivery Take-out



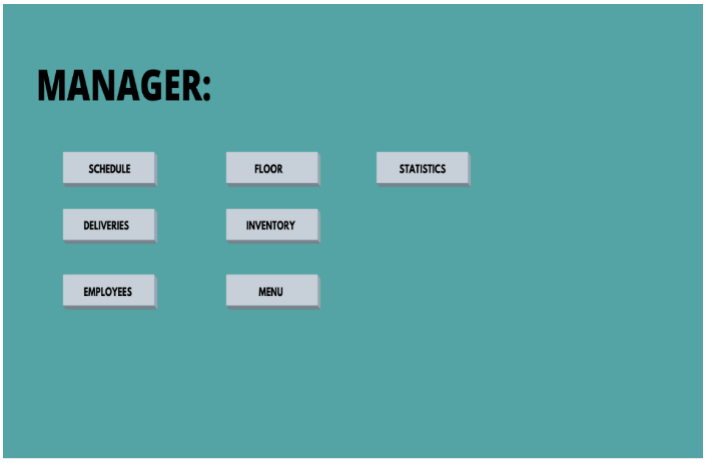
Each option will show the user a menu option their order, in the case of Reservation user will be able to add amount of people in their party and the time they booked their reservation.

C). Employee Interface



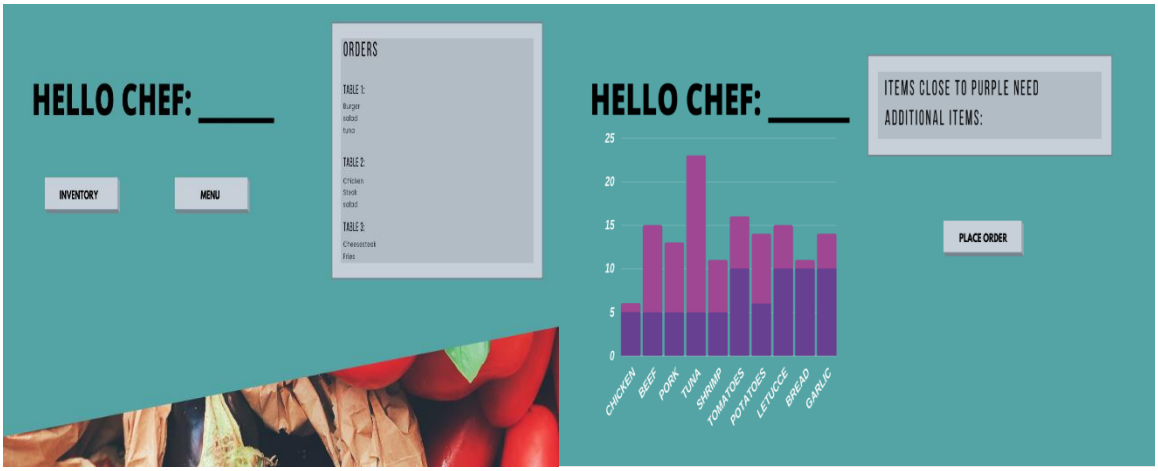
This will be the interface of Employee of a restaurant, user will have to choose from the options of different rolls, and their credentials to log in.

D). Manager:



The manager will have different options, they will be able to make a weekly schedule for their employees, will also be able to add more employees if require. Will be able to check inventory and check what is status on food orders to increment inventory.

E). Chef Interface:

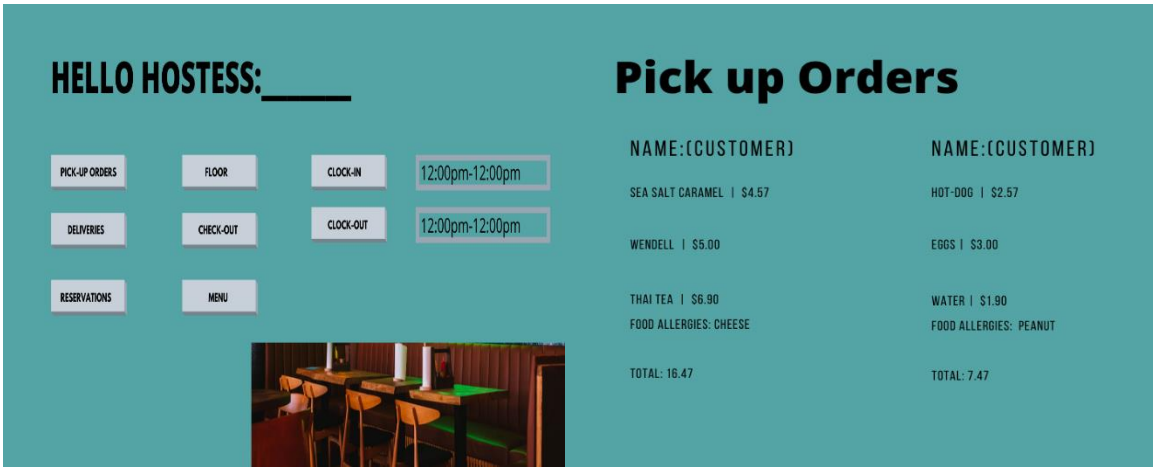


Chef Food orders will be display in the order that they came in. The second figure will show Manager and Chef how their inventory is looking at the moment what is best form them to stock up on.

E). Chef and Manager share options

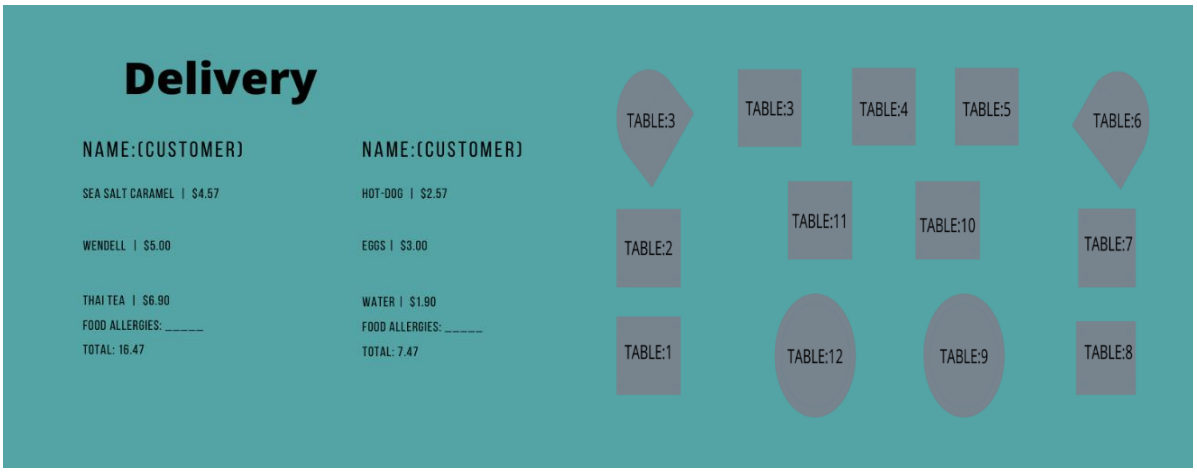
Chef/Managers Order placement will show the item and amount that they are ordering. They will also have the option to check the menu, Manager and Chefs will have permission to add or remove any item from menu.

F). Hostess Interface:



Hostess will have the progress of pick-up, deliveries, and reservation that they can look at. They will also have a menu option where they can describe what items are there to the customer. They will also have

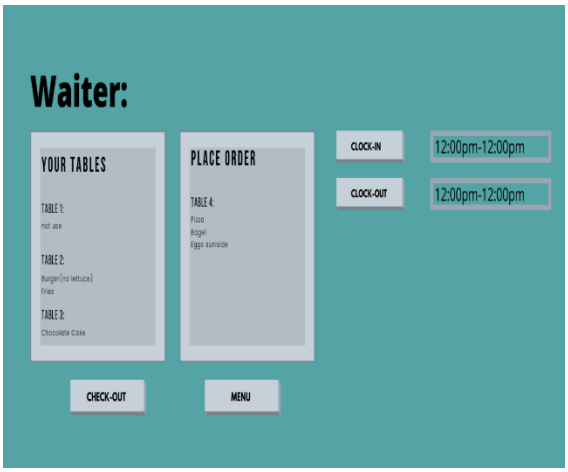
the option to see the tables in the restaurant and what is the status of all tables. They will also be able to clock in and clock out the hours that they work.



Delivery Orders

Floor layout

G). Waiter:



Waiter will be able to see what table they are assign to; they will also be able to place an order for each table that they work on. the option menu will be available to help customers pick their food or describe what ingredients are in the plate the customers picks. They will also be able to clock in and clock out the hours that they work.

UI Narrative:

Many restaurant websites have confusing links and unattractive designs on their home pages. With Streamline dining, the user is presented with a simple screen with labeled links. The initial login page prompts the user to either login or create an account and once logged in, they have their role-specific page. We opted for a simple design with only the information needed being displayed. For example, once a manager logs in, they are asked what action they would like to do and are only shown the actions that apply to them. When they click the button for the desired action, they will be brought to a page to help them fulfill their goal.

2. User Effort Estimation

Customer Takeout

Navigation: Total 3 mouse clicks.

- Click “Customer Login”.
- Enter Login Credentials. (Data Entry)
- Click “Login”.
- Click “Takeout”.
- Will be prompted with a menu and will add desired items to a cart. (Data Entry)
- Click "Place takeout”.
- Select a time for pickup and enter payment method. (Data Entry)
- Click “Confirm Order”.

Data Entry: Varying amount of mouse clicks and keystrokes depending on many factors such as Login credentials length, Order length, and Payment information length. Approximately 20 inputs for Customer Login, 5 – 30 inputs for Order information, and 50 inputs for payment method if no previous payment information is saved.

- Customer Login - Enter Username and Password.
- Add to cart – Will click on and choose items from the menu and select any specifications.
- Payment and Pick Up time – Need to enter Payment information and Pick up time.

Customer Delivery

Navigation: Total 3 mouse clicks.

- Click “Customer Login”.
- Enter Login Credentials. (Data Entry)
- Click “Login”.
- Click “Delivery”.
- Will be prompted with a menu and will add desired items to a cart. (Data Entry)
- Click "Place Delivery”.
- Enter payment method. (Data Entry)

Data Entry: Varying amount of mouse clicks and keystrokes depending on many factors such as Login credentials length, Order length, and Payment information length. Approximately 20 inputs for Customer Login, 5 – 30 inputs for Order information, and 50 inputs for payment method if no previous payment information is saved.

- Customer Login - Enter Username and Password.
- Add to cart – Will click on and choose items from the menu and select any specifications.
- Payment and Pick Up time – Need to enter Payment information and Pick up time.

Customer Reservation

Navigation: Total 3 mouse clicks.

- Click “Customer Login”
- Enter login credentials. (Data Entry)
- Click “Login”
- Select time and party size for reservation as well as any special requests. (Data Entry)
- Click “Confirm Reservation”

Data Entry: Varying amount of mouse clicks and keystrokes depending on login credentials length. Approximately 20 inputs for Customer Login and about 4 inputs for reservation information if no special requests.

- Customer Login - Enter Username and Password
- Reservation Information – Click on a date and choose from one of the available times. Input reservation size and any special requests.

Employees Clocking in/out

Navigation: Total 3 mouse clicks.

- Employee will select “Login”
- Enter Login Credentials (Data Entry)
- Click “Login”
- Click “clock-in” or “clock-out”

Data Entry: Varying amount of mouse clicks and keystrokes depending on login credentials length. Approximately 20 inputs for Employee Login.

- Employee Login - Enter Username and Password

Hostess

Navigation: Total 3 mouse clicks.

- Employee will select “Login”
- Enter Login Credentials (Data Entry)
- Click “Login”
- Will have access to take-out, deliveries and reservations orders. Floor tables, check-out, Menu

Data Entry: Varying amount of mouse clicks and keystrokes depending on login credentials length. Approximately 20 inputs for Employee Login.

Waiter

Navigation: Total 3 mouse clicks.

- Employee will select “Login”
- Enter Login Credentials (Data Entry)
- Click “Login”
- Will have access to tables that are assign to employee, Menu, check-out, and place customers' order

Data Entry: Varying amount of mouse clicks and keystrokes depending on login credentials length. Approximately 20 inputs for Employee Login.

Fulfilling an order (Chef)

Navigation: Total 2 mouse clicks.

- Will already be on the orders screen which will display any pending orders.
- When order is completed, select appropriate order.
- Click “Order Ready”

Data Entry: None

Manager

Navigation: Total 3 mouse clicks.

- Will be on Manager screen which will display options such as schedule, employees, inventory, deliveries.
- Click “schedule” will display which employees are work and future dates
- Click “deliveries” will display upcoming deliveries
- Click “floor” will display the floor plan of all table at restaurant
- Click “menu” will display a menu where items can be added or remove
- Click “inventory” will display the logs for current inventory amounts

Data Entry: Varying amount of mouse clicks and keystrokes depending on login credentials length. Approximately 20 inputs for Employee Login.

VI. Domain Analysis

1. Domain Model

a. Concept Definitions

Responsibility	Type	Concept
R1: Verify username and password match	K	User Check
R2: Permission based data base accesses	K	DB Access
R3: Updates employees schedule, hours	D	Manager Profile
R4: Store customers information	D	Customer Profile
R5: Store customer rewards	D	Customer Profile
R6: Display order queue	D	Order Status
R7: Display take-out and delivery queue	D	Order Status
R8: Display available tables	D	Table Status
R9: Display status of tables	D	Table Status
R10: Display order to be serve	D OR K	Order Status
R11: Payment Process	D	Payment System
R12: Manage interaction with menu for Chef and Manager	K	Menu Alteration
R13: Display status of deliveries	K	Order Status
R14: Display status of take-outs	K	Order Status
R15: Tracks table's bill and other expenses	K	Payment System
R16: Tracks amount of ingredients	K	Statistics

b. Association Definitions

Concept Pair	Association Description	Association Name
User Check ↔ DB Connection	Checks for correct information to match that specific customers	Verify User
Customer Profile ↔ DB Connection	Obtains customer information	Get User Data
DB Connection ↔ Manager Profile	Allows manager to modify employee schedules, wages, adding employees.	Manager Actions
Payment System ↔ Order Status	Total will be charge base on the food order place and a calculate tip will also be available.	Get Bill
Statistics ↔ Order Status	A tracking system will be keep depending on the amount of food sold.	Food Data
Menu Alteration ↔ Manager Profile	Allows manager to add or remove items on menu.	Manager Actions
Statistics ↔ DB Connection	Inventory will be kept in the database	Inventory Data
Chef ↔ Server	Chef will be able to notify server of Order Status	Order Update
Manager ↔ Server	Manager will be able to assign tables to server	Manager Actions

c. Attribute Definitions

Concept	Attribute	Description
User Check	ProfileC	Will check that the username and password match
DB Connection	StoreData	Stores information
Manager Profile	EmployeeSchedule	Display which days an employee will work
	EmployeeHours	Display which hours an employee will work
	EmployeeWages	Display and edit wages
	AddEmployee	Create new Employee Profile
Customer Profile	AcccountUsername	Identifies username with customers' email
	AcccountPassword	Identifies password with customers username
	RewardPoints	Quantity of rewards on account
Order Status	DeliveryStatus	Shows user estimated time till delivery
	TakeOutStatus	Shows user estimated time for takeout order

	OrderStatus	Shows user estimated time till order is ready
Table Status	viewFloor	Display floor plan of restaurant with availability of tables
	viewTable	Displays table status of (in service, or open)
Payment System	TotalOrder	Calculates total amount due for a specific table
	PercentTip	Calculates 10%,15% and 20% of the total for tip.
Menu Alteration	AddItem	Increment of menu item
	DeleteItem	Remove of menu item
Statistics	UseItems	Keeps a total of the Food ingredients used
	NeedItems	Display ingredient that need to be order

d. Traceability matrix

	Domain Concepts								
Use Cases	User Check	DB Access	Manager Profile	Table Status	Payment System	Menu Alteration	Statistics	Order Status	Customer Profile
UC-1								X	
UC-2				X					
UC-3					X				
UC-4								X	
UC-5								X	
UC-6								X	
UC-7	X	X							
UC-8	X	X	X						X
UC-9		X	X						
UC-10		X					X		
UC-11		X	X						
UC-12						X			
UC-13							X		
UC-14			X						
UC-15		X							

2. System Operation Contracts

Operation	Ordering: Allows an employee or a customer to place an order.

Use Case	UC – 1
Preconditions	• The user is logged into their account or is logged in as a guest. • The user will fill in order details such as items, dine in or takeout, etc.
Postconditions	• The user will be taken to the receipt. • The user will be taken to the payment service. • Once order confirmed, order will be sent to the kitchen.

Operation	Reservations
Use Case	UC – 2
Preconditions	• The user is logged into their account. • Will display available reservation times. • The user will fill in reservation details such as time, party size, etc. • User will confirm reservation.
Postconditions	• The reservation will be scheduled. • The user will have a reservation receipt. • Will update the reservation time availabilities.

Operation	Payment
Use Case	UC – 3
Preconditions	• The user is logged into their account • The user has placed and completed their order
Postconditions	• The user filled in their payment details • Once payment is accepted, the order will be archived • Receipt will be provided

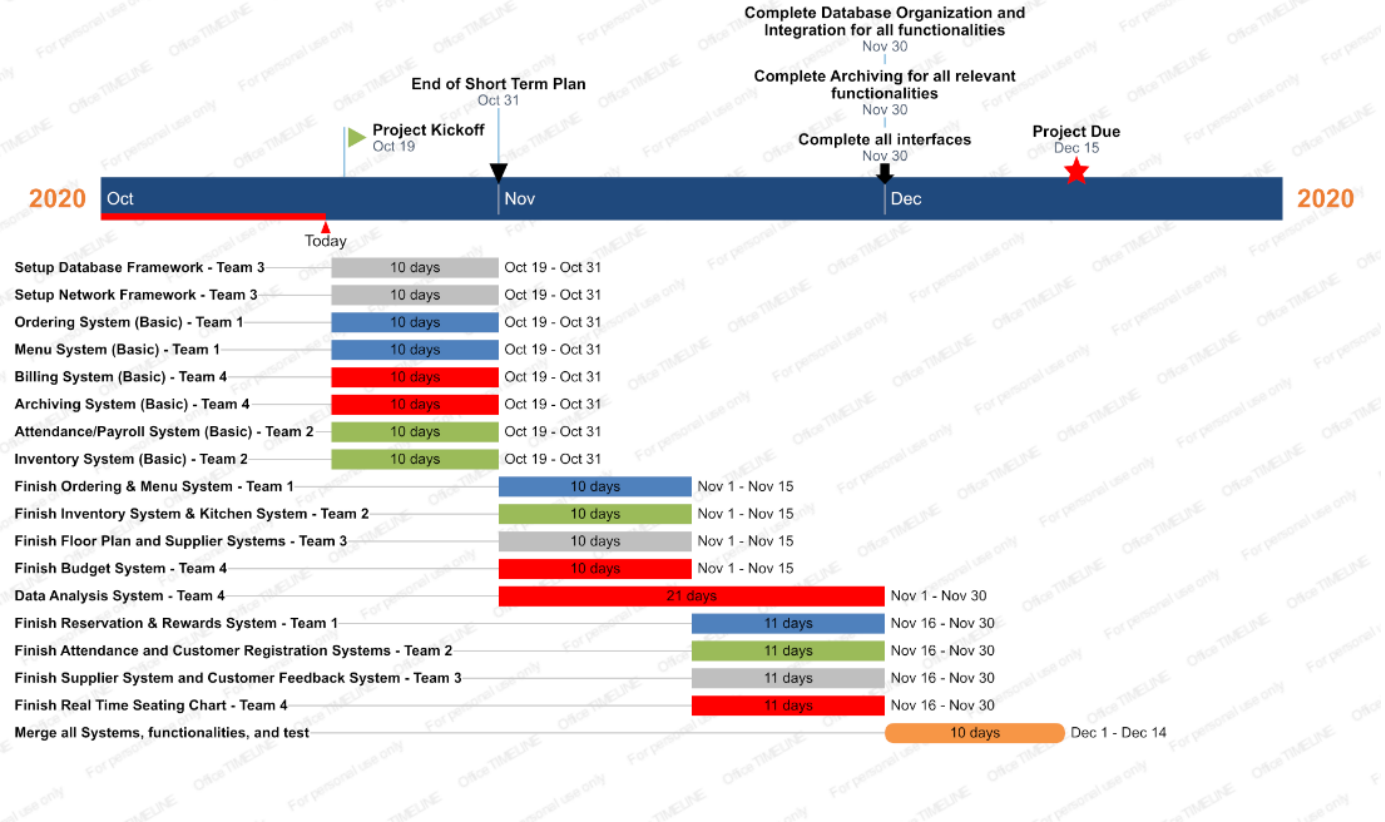
Operation	Clocking in/out
Use Case	UC – 7
Preconditions	• Employee is logged in • Employee will choose either to clock in or clock out.
Postconditions	• User is clocked in/out of their shift • Database logs information for Manager

Project Size Estimation

Use Case Points:

- Employee Portal
    - Employee clock-in and clock-out functionality
    - Employee can view schedule visibility and salary logistics
    - View incoming current order information
    - External transaction processing
    - Waiters can place orders with option to add additional comments
- Manager Portal
    - Accessibility to add new employers to the system.
    - Accessibility to add new menus to the system
    - Accessibility to view inventory data
    - View employee availability
- Customer Portal
    - Customer can view and reserve open tables
    - Customers have option to pick between take-out, dine-in or delivery
    - Customer can receive and view reward points earned
    - Can alert employees when they need assistance

Plan of Work



Short Term Plan: (10/19/2020 - 10/31/2020)

- Set up database and network framework **Team 3**
- Build fundamental operational features such as:
    - Ordering - Basic interface that puts in order requests. **Team 1**
    - Menu System - Allows customers/waiters to choose food to order. **Team 1**
    - Billing – Basic interface that approves orders and provides a bill. **Team 4**
    - Archiving – Collects and organizes different types of data. **Team 4**
    - Attendance/Payroll - Provides a punch in system for staff. **Team 2**
    - Inventory – Keeps track of inventory. **Team 2**

Long Term Plan / Product Ownership: (11/01/2020 - 12/05/2020)

Every team will be responsible for collecting, organizing, and processing data for their functionalities as well as developing basic user interfaces. In addition to these tasks, each team will be responsible for managing and supervising global tasks.

Team 1: Harman, Max

- **Functionality**
    - Virtual Ordering
    - Menu system
    - Reservation system

    - Customer Reward System
- **Qualitative property**
    - User Interfaces/Graphic Design

Team 2: Talya, Eugene

- **Functionality**
    - Inventory Tracker
    - Attendance System
    - Kitchen system
    - Customer Registration System
- **Qualitative property**
    - Merging systems and functionalities

Team 3: Joel, Pablo

- **Functionality**
    - Feedback System
    - Floor Plan
    - Schedule
    - Supplier System
- **Qualitative property**
    - Performance and unit testing

Team 4: Srinu, Karneet, Justice

- **Functionality**
    - Budget System
    - Real Time Seating Chart
    - Data Analysis System
- **Qualitative property**
    - Database interactions

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