Canteen Ordering System For Unilever

CBAP Project 1

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Project Overview and Objectives

Project Overview

Unilever is an English-Dutch multinational FMCG company headquartered in London. Its products are available in 190 countries, making it one of the oldest FMCG companies. A total of 1500 employees worked at Unilever's UK offices spread over 12 floors. There were two canteens serving these 1500 employees and around 150 employees can be accommodated at a time in each canteen. Furthermore, most of the staff members have a preference for having their lunch break between 12 p.m. and 1 p.m. Consequently, the cafeteria experienced a high level of activity during this period, leading to employees spending a considerable amount of time waiting for available tables. According to management's calculations, employees took approximately 60 minutes to leave for lunch and return. Around 30-35 minutes were wasted standing in line to collect their food and find a table. However, the actual time spent eating was only around 10-15 minutes. The remaining 10 minutes were allocated to travelling to and from the cafeteria using the elevators.

Due to limited availability, employees often face the challenge of not being able to get their preferred food choices as the canteen frequently runs out of certain items. Unfortunately, this leads to a significant amount of food being wasted as the unsold items are discarded by the canteen. A considerable number of employees have expressed their desire for a system that would enable them to place meal orders online and have them delivered to their workplace at a designated time and date.

Project Objectives

The project aims to create the following:

- Design and implement an automated lunch ordering application to facilitate employees in ordering their own meals conveniently.
- Optimize processes and measures to enhance productivity, resulting in a reduction of workforce.
- Generate comprehensive reports to improve the management of food inventory.
- Enhance payment processes by implementing cashless transactions and enabling convenient access to employee payroll deductions.

Project Task

Task No.	Project Task
1.	Identifying stakeholders- List of stakeholders
2.	Identifying the problem statement in the system
3.	Identifying objectives of the new canteen ordering system
4.	Create as-is and future process map
5.	Find out the scope of the canteen ordering system
6.	Write down the main feature that need to be developed
7.	Write the in-scope and out-scope items for the software
8.	Draw an activity diagram
9.	Draw an ER diagram of the system
10.	Write out the business requirements, both functional and non-functional requirements
11.	Draw wireframe or mock screen for any two of the features

Business Analysis Core Concept Model (BACCM)

Need	To need is to implementing an online canteen ordering system can effectively minimize food wastage, reduce operational expenses, decrease manpower requirements, and maximize employees' work time.
Change	To change is to transform the existing canteen system into an automated online meal ordering system.
Solution	The solution is create a Java-based online canteen ordering system that enables canteen users to conveniently place meal orders and have them delivered to their workplace.
Context	The context to company's need to accommodate 1500 employees during lunchtime has resulted in a significant rush at the canteen, leading to employees wasting valuable time waiting for available seats.
Value	The value to the new system are: • By saving manpower and employees' time, the changes increase efficiency. • Operating expenses are minimized, and food waste is significantly reduced. • Lunchtime at the canteen is free from any rush or overcrowding.
Stakeholder	External Stakeholders: • Supplier • Project Manager • Implementation SME • Operational time • Testers Internal Stakeholders • Inventory manager • chef • canteen manager • employees • meal deliverer

Requirement Classification Scheme (RCS)

Business requirement: To develop an online food portal for the company to automate the canteen ordering system not only increases efficiency but also saves time and resources.

- Achieve a minimum 30% reduction in canteen food wastage within six months after the initial release.
- Target a 15% reduction in canteen operating costs within a span of 12 months.
- Aim to increase the average effective work time per employee by 30 minutes per day within 3 months time frame.
- Implementing an automated ordering process and delivering food directly to users workstations will enable the canteen to operate with reduced manpower requirements.

Stakeholder requirement: The main stakeholders are employees, canteen manager, meal deliverer and payroll manager.

- Employees: Through the system, users can log in and place their food orders online, which will be subsequently delivered to their workspaces. The cost of the meal will be deducted from their monthly salary.
- Canteen manager: The system allows users to view their orders, enables inventory management of all orders. Additionally, the manager has the capability to request deliveries directly to the employee workstations.
- Meal deliverer: Upon the successful delivery of the meal, the delivery personnel should have the capability to close the online customer order in the system.
- Payroll manager: The team is required to calculate the total number of dishes ordered by each employee and deduct the corresponding amount from their accounts.

Solution requirement:

- Functional: need to develop an online web portal or mobile application to automate the canteen food delivery system. The system will be built and maintained using Java, as it requires minimal code maintenance.
- Non-functional: The canteen ordering system needs to be capable of accommodating a large volume of 1500 employees placing orders. Therefore, it is essential that the web page is lightweight and optimized for fast rendering to ensure smooth user experience.

Transition requirement: Users of the system should receive sufficient training to efficiently utilize it. Additionally, a help desk can be established to assist users in resolving any errors or providing necessary guidance.

Task 1: Identifying Stakeholders – List of stakeholders

RACI matrix is established to determine the duty of each stakeholder, which are explained in the following:

- **Responsible:** The individual responsible for executing the task or carrying out the work.
- **Accountable:** The person who bears ultimate accountability for ensuring the successful completion of the task and acts as the decision maker.
- **Consulted:** The stakeholder who will be solicited for their opinion or information regarding the task.
- **Informed:** A stakeholder who is regularly informed and updated on the progress of the task.

Stakeholder	Responsible	Accountable	Consulted	Informed
Supplier	✔			
Project Manager		✔		
Implementation SME			✔	
Operational IT team			✔	
Testers	✔			
Inventory manager	✔			
Chef	✔			
Canteen manager	✔			
Employees				✔
Meal deliverer	✔			
Payroll team				✔

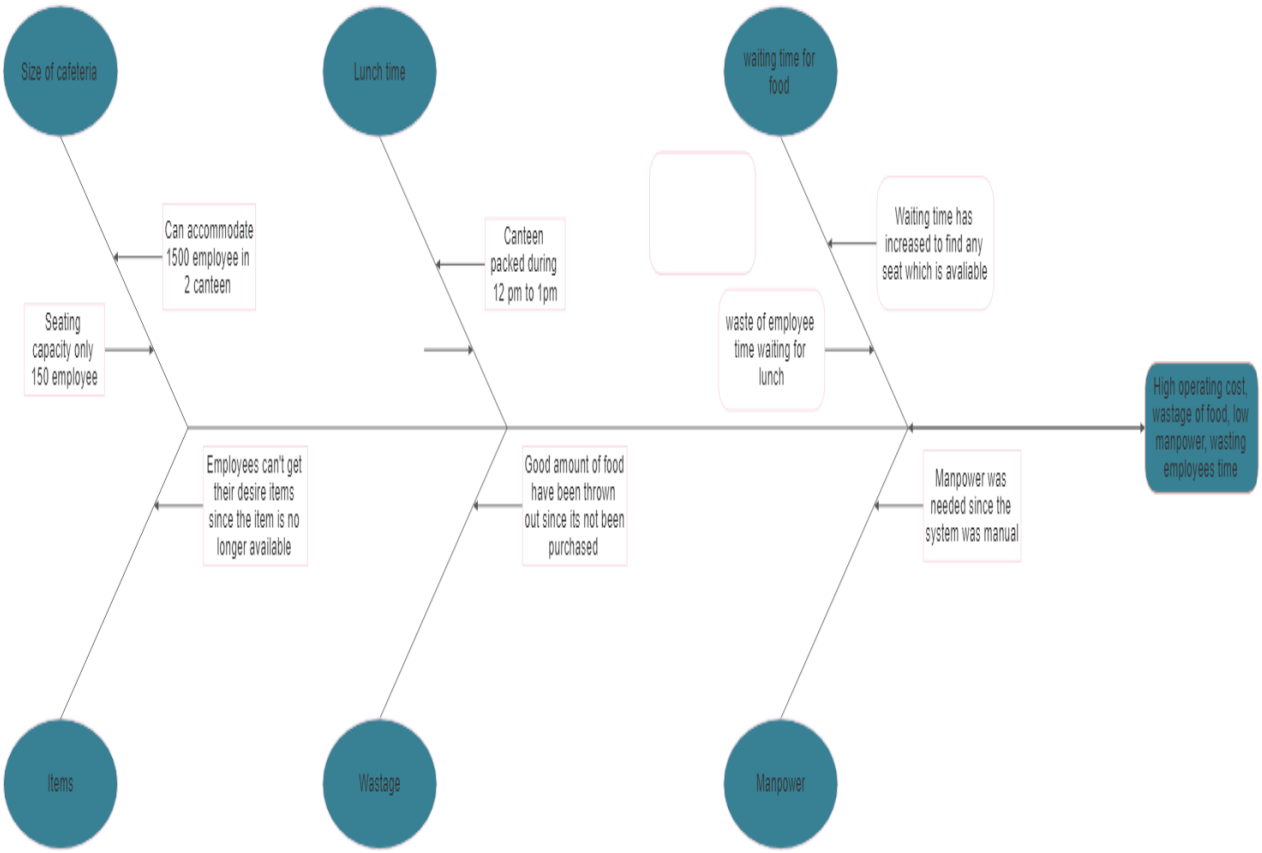
Task 2: Identify the problem statement in this system

A total of 1500 employees worked at Unilever's UK offices spread over 12 floors. There were two canteens serving these 1500 employees and around 150 employees can be accommodated at a time in each canteen. Furthermore, most of the staff members have a preference for having their lunch

break between 12 p.m. and 1 p.m. Consequently, the cafeteria experienced a high level of activity during this period, leading to employees spending a considerable amount of time waiting for available tables.

A considerable number of employees have expressed their desire for a system that would enable them to place meal orders online and have them delivered to their workplace at a designated time and date.

The above problem is shown cased in fish-bone diagram below:

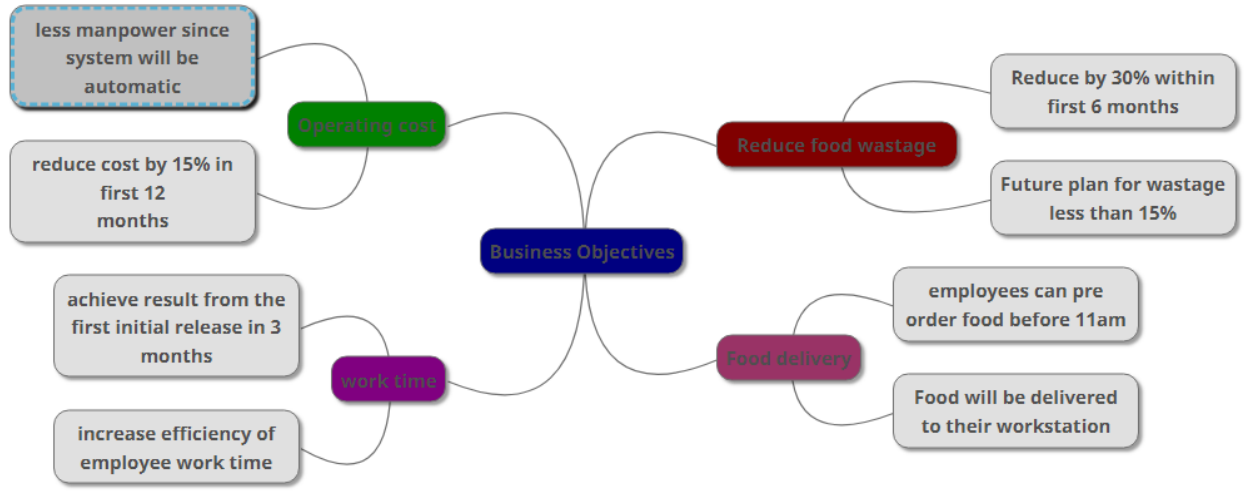


Task 3: Identifying objectives of the new canteen ordering system

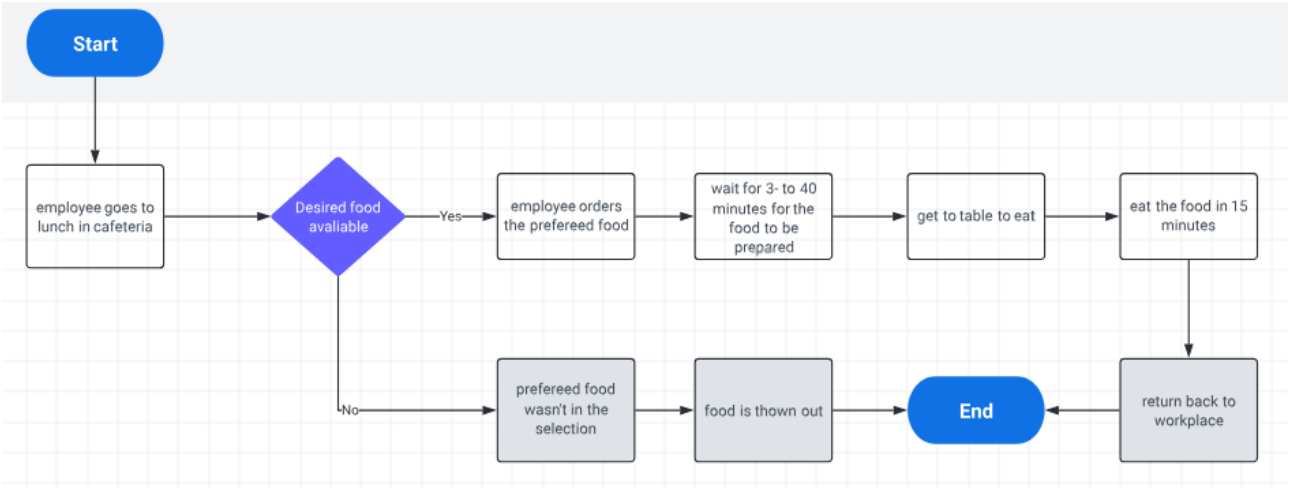
- Achieve a minimum 30% reduction in canteen food wastage within six months after the initial release. The value of the food wasted each month is calculated by assessing the canteen inventory. Previous case – 25% thrown out

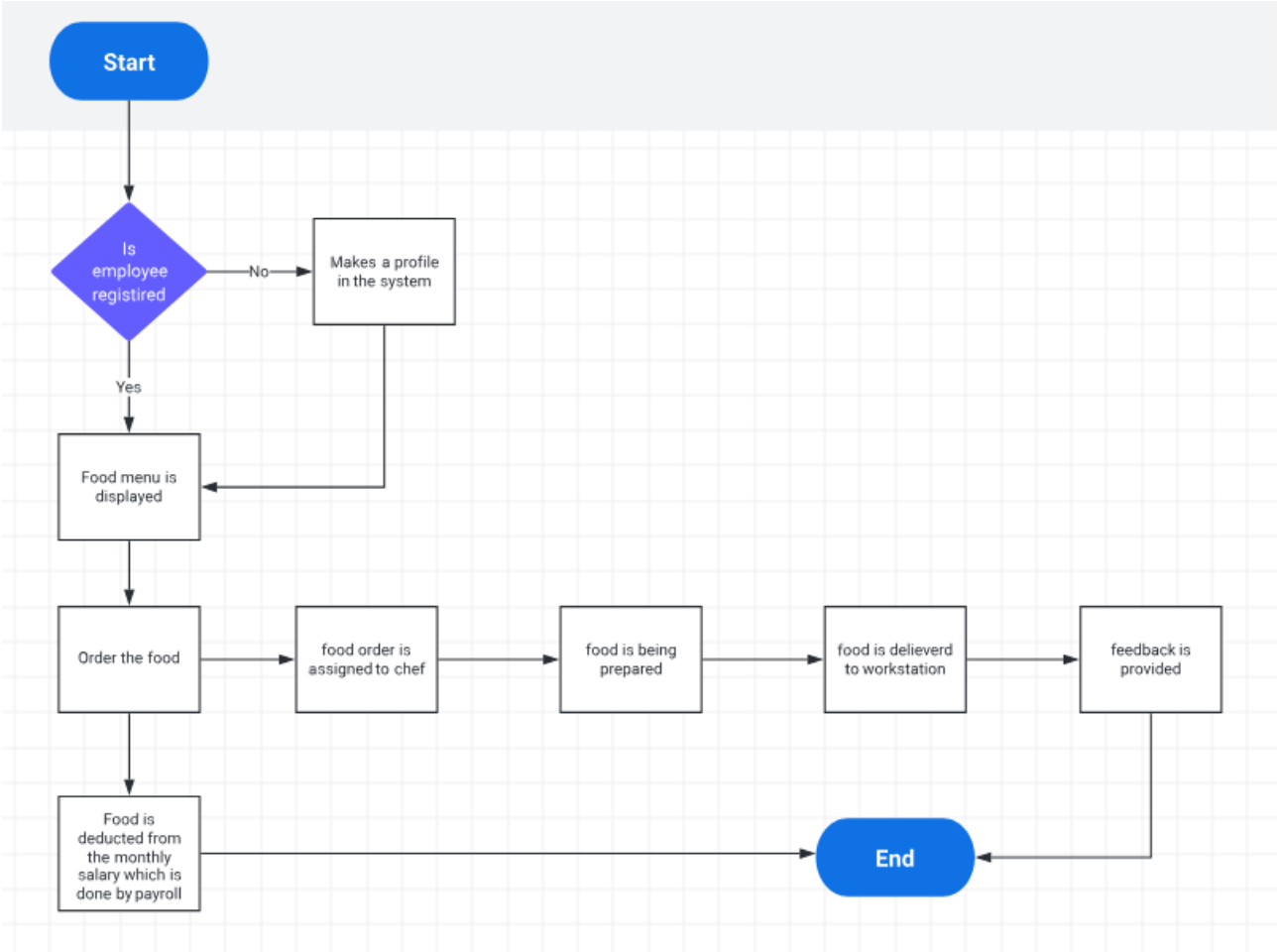
  Plan for future – Less than 15%
- Target a 15% reduction in canteen operating costs within a span of 12 months.
- Aim to increase the average effective work time per employee by 30 minutes per day within 3 months time frame.
- Implementing an automated ordering process and delivering food directly to users workstations will enable the canteen to operate with reduced manpower requirements.

The above requirements is explained further in mind map:



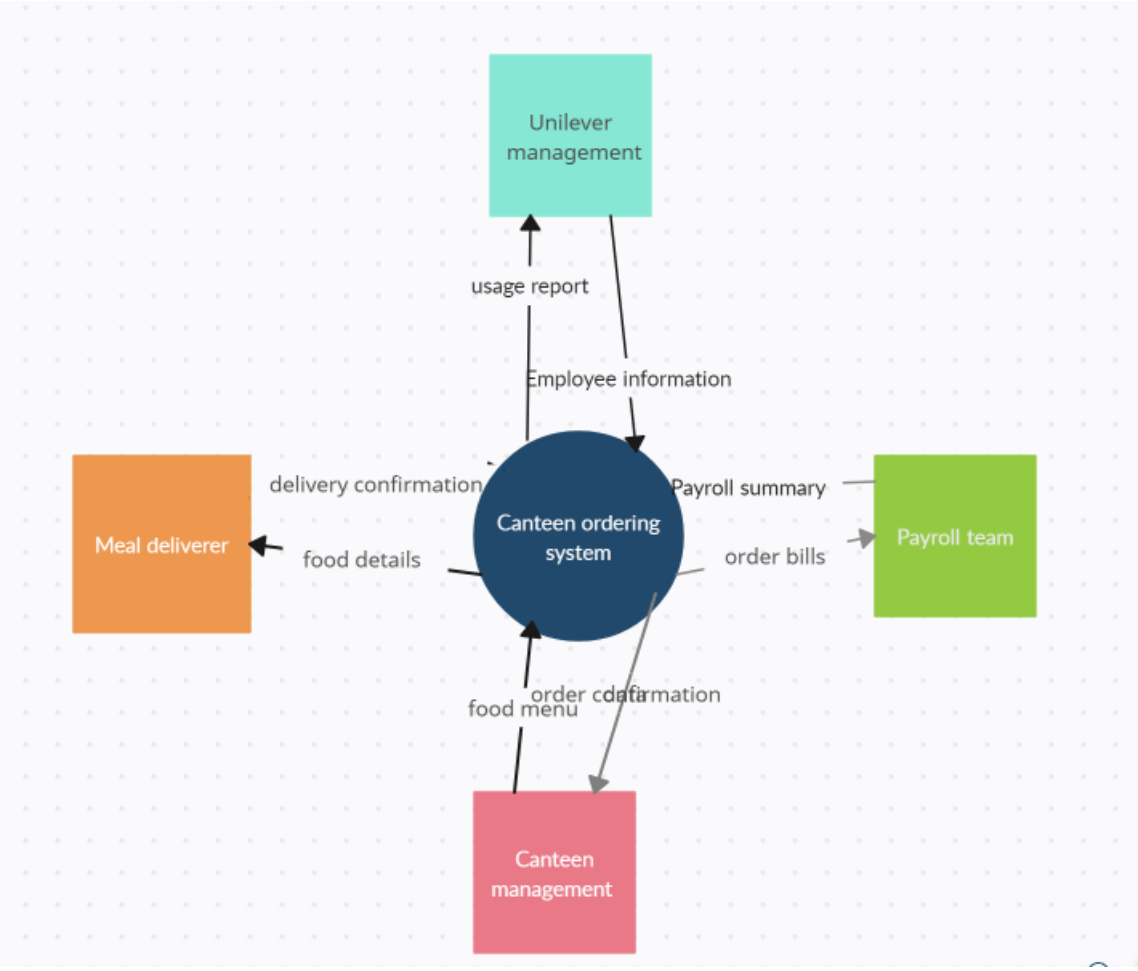
Task 4: Create as-is and future process map





Task 5: Scope of the canteen ordering system

The scope of the system has 4 factor. Unilever management, Meal deliverer, Canteen management and payroll team.



Task 6: Main features that need to be developed

Below are the key features that need to be formulated:

1. Employees will have the ability to register and log into the system, ensuring secure access and personalized user accounts.
2. Once successfully logged in, employees should have the ability to view the updated food menu, which will display the available dishes and their details.
3. To ensure that the chef has ample time to prepare lunch for all employees, it will not be possible to place lunch orders after 11am.
4. Employees can add their desired food items to their cart and confirm the lunch order once they have included all the desired items.
5. Once the order is placed, employees will not be able to modify or cancel the order.
6. The canteen manager has access to view all the orders and is responsible for assigning them to the chef for preparation.
7. Once the order is packed, it will be allotted to the meal deliverer who will be accountable for delivering it to the employee's workplace.
8. After the food is successfully delivered, the meal delivery personnel will mark the order as closed in the system.
9. The payroll team will deduct the bill amount from the employee's monthly salary, eliminating the need for a separate payment gateway.

Task 7: Write the in-scope and out-of-scope items for the software

In-scope requirement
Functional Requirement
Menu selection

1. Worker will be able to admittance the main page of the canteen ordering system.
2. Employees should have the ability to view the day's menu without the requirement of logging in to the system.
3. To place an order, employees will need to log in using their selected ID and password.
4. If an employee has not created a profile, they will be prompted to complete an initial registration process through a dedicated sub-application.
5. The web page will remain active until 11 am, after which a message stating "ordering time expired" will be displayed on the main page.
6. The system will conduct a security check by comparing the entered password against the saved password from the initial registration.
7. In case of a forgotten password, the system will initiate a "reset password" routine to allow users to regain access to their account.
8. Upon reaching the main page, users will be able to select items from the daily menu.

9. The menu will be categorized into sections such as snacks, main dishes, drinks, and desserts for user convenience.
10. The menu will include a photo, description, and price for each item listed, providing users with visual representation, details, and pricing information for each menu item.
11. Next to the price of each item, there will be a like icon that users can interact with to express their liking or preference for a particular menu item.
12. Users can click on the like icon for each selected item, and a message saying "item in tray" will appear to indicate that the item has been added to the order.

Check out

1. The main page will feature a shopping cart icon located in the upper right corner, allowing users to proceed to the check-out process.
2. The shopping cart will display a list of items selected by the user, including the activated like button for each item.
3. Users will have the ability to click on the like icon to deactivate it, thereby removing the item from the tray and deselecting it from the order.
4. When an item is removed from the tray, a message saying "item removed from the tray" will appear to notify the user.
5. Users will have the option to either continue shopping and add more items to their order or proceed to confirm the order.
6. Once the "confirm order" button is clicked, a message will appear notifying the customer that they will not be able to modify or cancel the order.
7. The canteen will calculate and include the relevant sales tax in the total amount payable by the customer. A display window will present the itemized list of ordered items along with the total amount due.

Payment

1. The payment will be promptly requested from the payroll department to settle the amount due.
2. If the payroll department does not have a record of the employee, a message will appear indicating that the employee is not registered in the system.
3. The payment will be transferred to the canteen and deducted from the employee's salary as per the agreed arrangement.

Initial registration

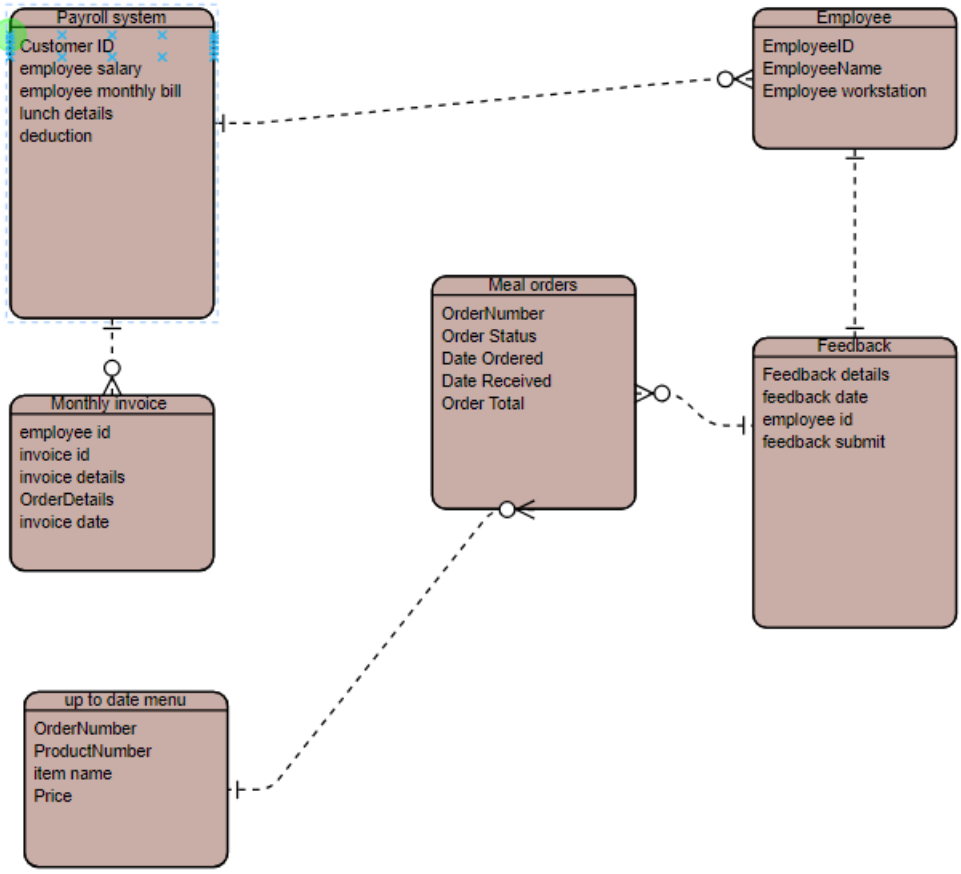
1. First-time customers will be required to create a profile before placing an order.
2. Customers will need to provide their employee ID, first name, last name, phone number, and work email while creating their profile.
3. The system will prompt the customer to input a unique password as a requirement for their profile creation.
4. In case a customer forgets their password, the initial page will provide a "forgot password" link, which, when clicked, will trigger an automated email to assist with password recovery.

Out of scope requirement	
1.	The system does not include breakfast items in its available menu options.
2.	Customers will be eligible for a refund in the event that their order is not received.
3.	An electronic confirmation will be generated upon order placement, recording the exact time of the order for reference.
4.	An automated email will be sent to the user after placing the order to confirm the details of their order.

5.	An automated email will be sent to the customer to confirm the receipt of their order once it has been received by the system.
6.	inviting them to provide feedback on their experience.
7.	The customer's profile will provide real-time notifications regarding the status of their order, keeping them updated on its progress.
8.	Delivery can be made to locations other than the workplace based on the customer's preference and provided delivery address.
9.	To enhance daily operations, the canteen manager should have the capability to update the menu for the entire week, ensuring a streamlined workflow.
10.	As an additional feature, customers can opt to receive a mobile text message notification when their order is received, providing them with real-time updates on the status of their order.
11.	The web page should be designed to be accessible and user-friendly on mobile devices and tablets, ensuring a seamless browsing experience for users on various devices.

Task 8: Draw an activity diagram for the system

Task 9: Draw an ER diagram



Task 10: Write the business, Functional and non-functional requirements

Functional requirements:

- Online web
- Login screen to confirm the user profile
- Menu of the food choice
- Food ordering not permitted after 11 am
- Order and cost summary
- Order tracking features
- Payroll management system
- Meal delivery details
- Feedback

Non-Functional requirements:

- Serviceability: user friendly system
- Scalability: Able to serve 1500 users
- Performance: System should be light and render

Task 11: Wireframes for canteen Management System