Canteen System

Stakeholders

ACTOR	What they can do on the software created
Employee/Customer	• User will have access to open to the app and see all menus along with the available menus in the canteen with a price. • User can select an item and create an order. Users will also have access to edit the order before checkout. • User will be able to order a meal online. For lunch, employees will need to order before 11:00 am. • As a part of billing/payment, users need to enrol for salary payment deduction. • Users will get food delivery at their workstations at a specific time and date. • User should have access to submit the feedback.
Canteen Manager	• Canteen manager will have access to create and update the menu. • Canteen manager should be able to see the order placed by the customer. • Canteen manager should be able to request a delivery to the employee's work location.
Delivery Boy	• The delivery boy will be able to accept and deliver the order to mentioned workplace. • Delivery boy will be able to close the order after delivering the food.
Payroll system	• Payroll system can calculate the whole month's food bill for the employees. • Payroll system should deduct the food payment from the employee's salary.
Management	Management will get the following reports: • Popular dishes • Number of customers using the app. • Employee satisfaction report. • Daily sales report. • Monthly financial report. • Order forecasting.

Problem Definition and Solution

Problem

- Company has 1500 employees in the office and only two canteens are there in the office which has a capacity of 150 people in each canteen.
- Most of the employees go for lunch around 12:00 noon to 01:00 pm. Due to the canteen capacity, it's leading towards a huge rush.
- Employees take around 60 minutes for dinner among the 30-35 minutes they waste in waiting and they only spend 10-15 minutes in having lunch.
- Employee always don't get their choice of food because the canteen runs out of certain items.
- Everyday canteen wastes 30% of food which is not purchased.

Solution

- As a solution we are creating software, using which customers (employees) will be able to order food from their workplace.
- This software will allow employees to pre-order food so they will get the food of their choice.
- By ordering food online employees will save time when they are waiting in waiting in a queue in the canteen.
- Using order forecasting, the canteen manager will design and edit the menu. Because of this, there will be less wastage which will result in high profit.

Advantages and Objectives

Advantages of the Canteen Ordering System:

- Proposed system will save considerable time for the employee which employees who are investing in the current canteen system.
- This system will increase the probability of getting the food of choice by pre-order.
- This will help management to deliver better food service by improving the quality of work and productivity.
- Food wastage will be reduced which will help to reduce the cost and earn more profit.

Objectives:

- Reduce food wastage by at least 30% within the first 6 months of release. Earlier total wastage was 25%, which should be less than 15%.
- Reduce the operating cost of the canteen by 15% within 12 months of release.
- Within three months, increase the work efficiency of the employee by 30 minutes per day.
- Canteen will be operated with less manpower.

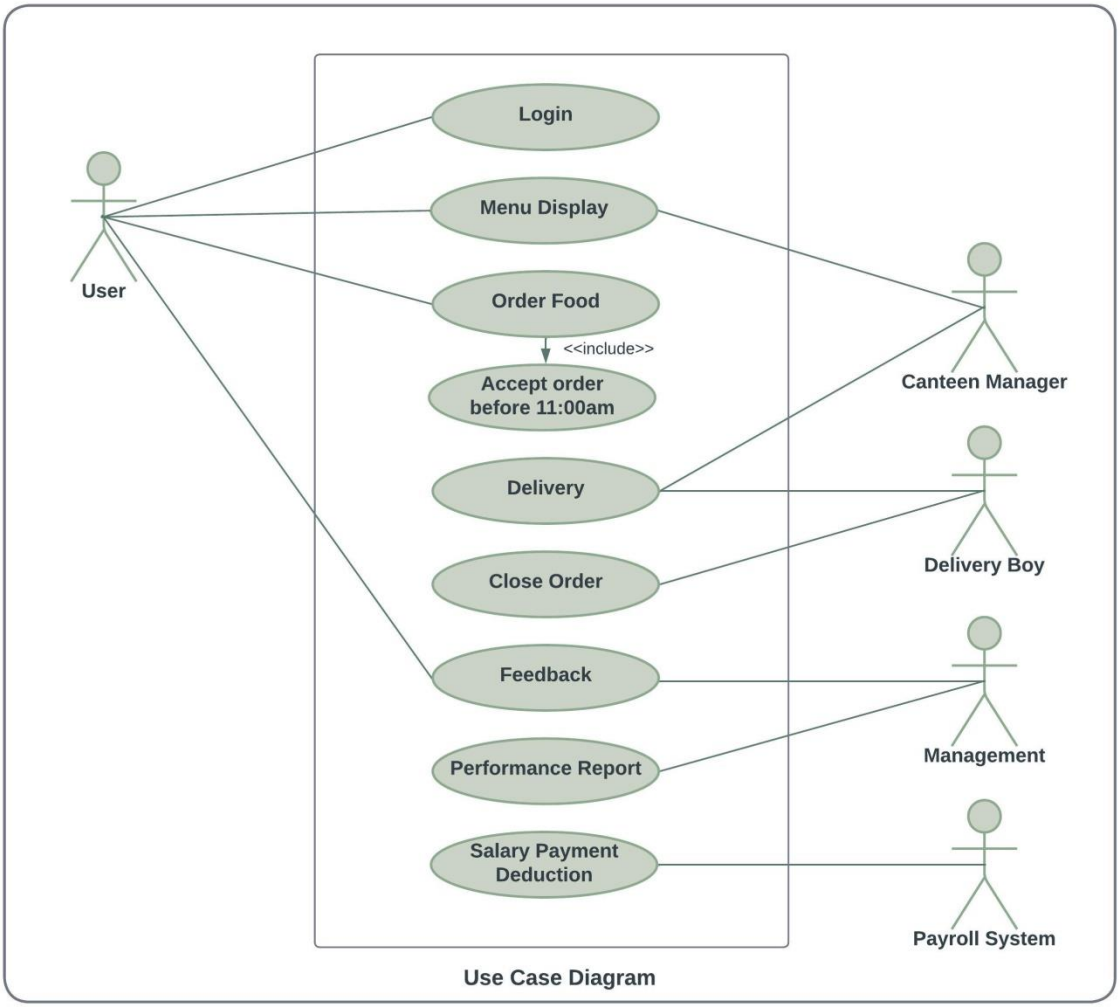
Existing System

- How is the existing system? Does it have any of the mentioned features already?
- The familiar thing about the current system and the proposed system is that there is no payment gateway in the existing proposed system. The payroll system is calculating the bills and the month's end and deducting from the salary.

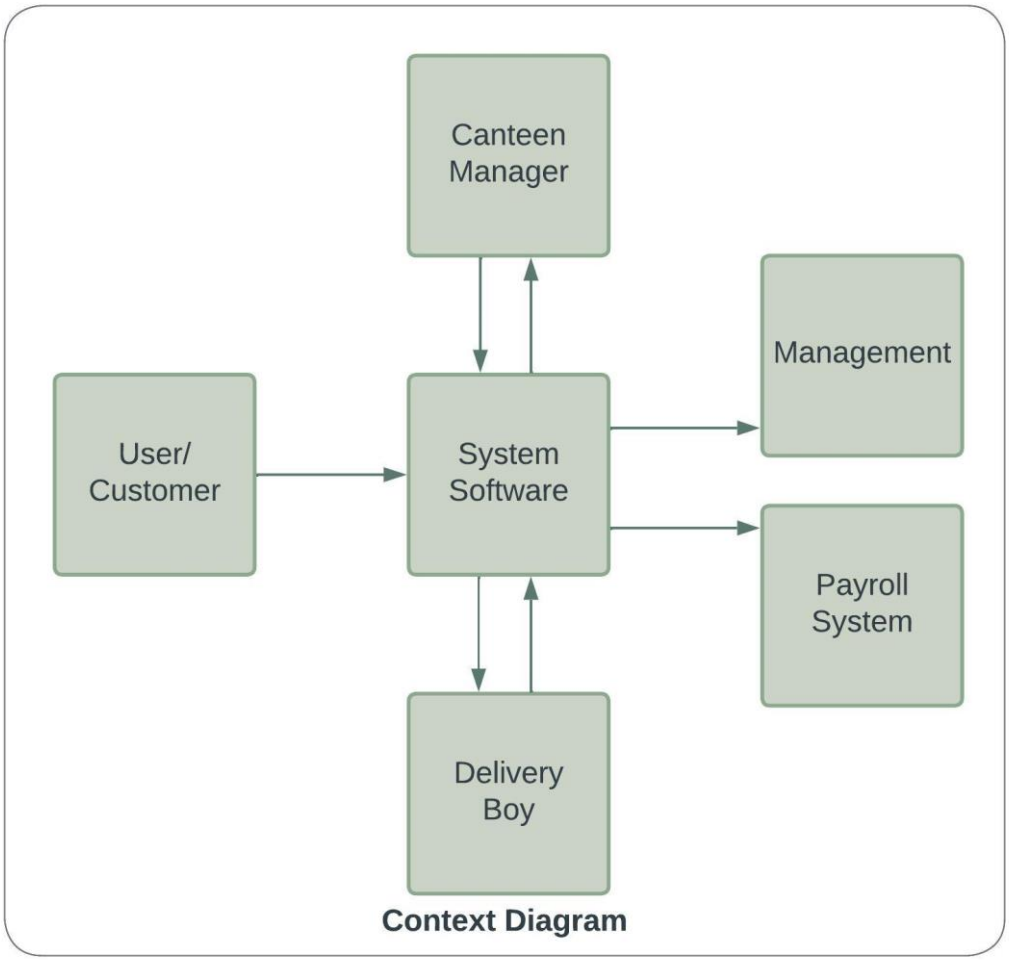
Proposed System

- User-friendly interface
- Self-explanatory
- Support 1500 users
- Easy to understand
- User will be able to order preferred dish.
- System will handle payroll system. Users will not need to pay at the time of checkout.
- Users will get food delivery at their workplace.
- Users will be able to submit the feedback.

Scope using *use case diagram* (UML)



Scope using *context diagram:*



In Scope

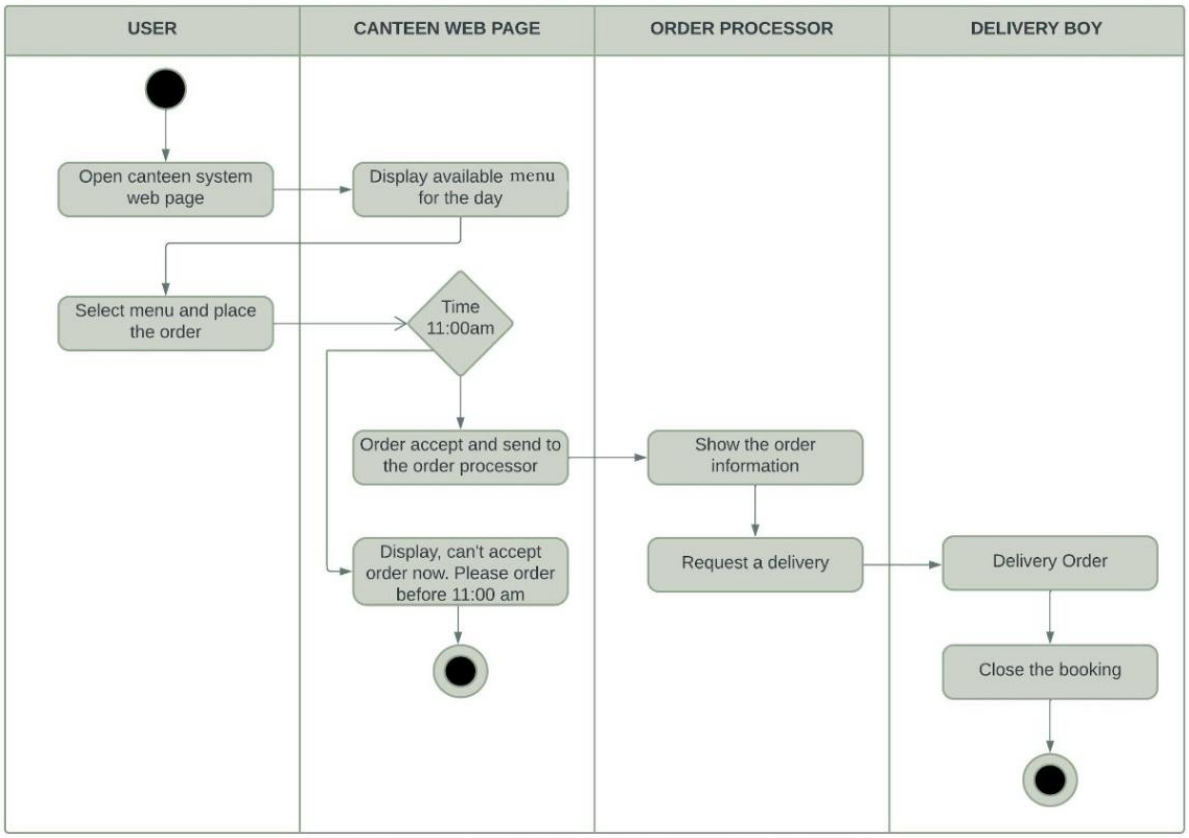
- Mention the name of features and what they are used for.
- Menu Webpage: The user should be able to open the web page and see the up-to-date menu.
- Menu Manager: The canteen manager will be able to change and edit the menu as per the business needs.
- Place Order: Using this feature user will be able to place an order. This feature will also allow users to edit the order before checkout. Order processors will have access to see the order placed by the users.
- Delivery: The order processor will have access to request a delivery. Then the delivery boy can deliver the food at the mentioned place and then he will choose the order.
- Feedback: The user will have the option to submit their feedback. Using this feedback management can trace the performance and scope of improvement in the food and system.

- Salary Payment Deduction: This feature will allow calculating the whole month's bill of the user and then the payroll system will deduct that payment from the user's salary.
- Generating Reports: The system will generate the reports such as popular dishes, number of users, user satisfaction, sales report, profit and loss reports, order forecasting and it will send them to the management. Using this management can trace the performance of the system. These reports will also help management to do improvements in the menu and system to touch the expectations of users.

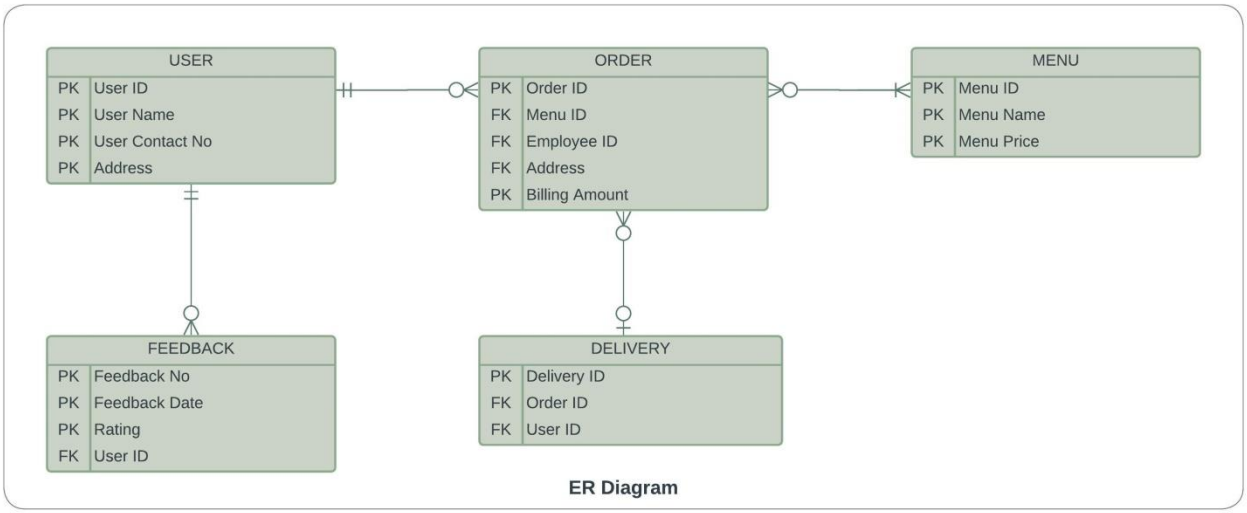
Out of Scope

- In the current system, the user will not allow to place an order after 11:00 am.
- Once the user placed an order, the user doesn't have access the cancel the order.
- Currently, there's no payment gateway feature in the system, so the canteen doesn't have any access to charging users as per the orders.

Activity Diagram for the System:



ER Diagram for the System:



Preconditions and Triggers: Example

Preconditions and Triggers:
1. User opens the web page of the Canteen Ordering System.
2. Menu Manager creates and updates the daily menu.
3. User selects lunch dishes and creates an order.
4. User edits the items in their order before checking out.
5. User confirms the order and proceeds to check out.
6. Order is placed and cannot be cancelled or edited by the user.
7. Canteen Manager (Order Processor) views the orders placed by employees.
8. Canteen Manager requests delivery to the employees' workstations.
9. Meal Deliverer closes the online customer order after delivering the lunch.
10. User submits feedback if dissatisfied with the food or delivery system.
11.User submits feedback if dissatisfied with the food or delivery system.
12 Employees enrol for salary payment deduction to cover the cost of ordered dishes.
13. Payroll system calculates the total number of dishes ordered by each employee.

Basic Flow:
1. User opens the Canteen Ordering System web page.
2. User selects lunch dishes and creates an order.
3. User can edit the order before checking out.
4. User confirms the order and proceeds to check out.
5. Canteen Manager views and processes the orders.
6. Canteen Manager requests delivery to workstations.
7. Meal Deliverer delivers the lunch to the employee's desk.
8. Meal Deliverer closes the online customer order.
9. User can submit feedback if dissatisfied.
10. Payroll system calculates and deducts money for ordered dishes.

Data Elements:
1. Menu: List of dishes available for the day with prices.
2. Order: Selected lunch dishes and associated details.

3. Feedback: Submissions from employees regarding satisfaction.
4. Payroll: Employee salary deductions for ordered dishes.
5. Reports: Popular dishes, system usage, satisfaction, sales, earnings, order forecasting.

Error Handling:
1. If an employee tries to place an order after 11 am, they should be notified that lunch ordering is closed for the day.
2. If a user tries to cancel or edit an order after checking out, they should be notified that changes are not allowed.

Business Requirements:

Business objective – 1:

Reduce wastage of food.
Reduce the value of food thrown away.

Business objective – 2:

Reduce operating costs by 15% within 12 months.

Business objective - 3:

Increase the average work time of employees by 30 minutes per day.

Business objective - 4:

Reduce the manpower.

Functional Requirements

- The employee shall open the web page of the Canteen Ordering System. He/she shall be presented with an up-to-date menu for the day. It will have a list of all the dishes available in the canteen for the day along with their prices.
- A Menu Manager (a canteen employee) should have access to create the menu and update the menu.
- The users can select the lunch dishes they would like to eat and create an order. They should be able to edit the items they want to order at any time before checking out.
- Canteen manager should be able to request a delivery to the employees' workstation.
- After delivering the food delivery boy shall close the online customer order.
- There should be a section where customers can submit their feedback.
- Employees need to enrol for salary payment deduction so the payroll system will handle payroll deductions.

Non-functional Requirements

- Once the order is confirmed and the user has checked out, they should not be able to cancel or edit the order.
- The canteen manager also known as the order processor should be able to view the orders placed by the employees.
- The payroll system shall calculate the total number of dishes ordered by each employee and according to that payroll system shall deduct money from the employee's salary.
- Management should get the following reports:
  Most popular dishes
  Number of users
  Satisfaction of the users
  Daily sales
  Total monthly earnings
  Order forecasting

System Requirement:

- System should support 1500 orders at a time.
- Webpage should be light and vendor faster.

Usability:

- Should be user-friendly UI.
- Should be self-explanatory UI.
- Very simple data field which is easy to understand.

Environments

- We are creating and maintaining the system in Java