# Canteen Ordering System for Unilever Project

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Cohort 1

# Catering Industry

## Stakeholders

| ACTOR | What they can do on the software created |
|---|---|
| Employee/Customer | The employee should be able to login into the canteen ordering system, order the food of his choice, see the total cost and be able to submit feedback.<br><br>Detailed Acceptance Criteria<br><br>● The employee should have access to the Canteen ordering system. i.e., Login to the portal/web page.<br>● This canteen ordering system must have up-to-date menu for the day with the list of all the dishes available for that day and the prices.<br>● The lunch order should be placed by the employees latest by 11:00 am<br>● The employees must be able to select the dishes that they prefer (from the preselected menu chosen by the canteen manager and be able to create an order.<br>● Once they make an order, they should not be able to cancel/edit them.<br>● If the customer does not like the food or the delivery system, then they should be able to submit the feedback.<br>● The employee must be enrolled for the salary payment deduction.<br>● The payment must be deducted from the employee salary. |
| Canteen Manager | The canteen manager must be able to view the orders placed by the employees.<br><br>Detailed Acceptance Criteria<br><br>● The canteen manager/order processor should have access to the canteen ordering system i.e., Login to the portal/web page.<br>● They should be able to take inventory of all the dishes ordered by the employees.<br>● The canteen manager should be able to request a delivery to the employee's workstation.<br>● They should have an option to download the order as word/pdf /excel in a format that is understandable easily by the cooks.<br>● The canteen manager must have the administration credentials for the web page.<br>● He/she must be able to create the menu items and fix the cost.<br>● Able to view the orders and have easy filter options based on the menu, cost, quantity etc.<br>● The Manager must also be able to view the feedback form so he can create a strategy accordingly to succeed/improve. |

| | |
|---|---|
| | ● The manager must be able to view the data metrics from the order and keep a check on the food wastage and report it to the management. |
| Delivery Boy | The delivery boy must be able to deliver the lunch to the employee's desk and close the online order once delivered.<br><br>Detailed Acceptance Criteria<br>● The delivery boy should have access to the Canteen ordering system. i.e., Login to the portal/web page.<br>● Should have access to the order list and other important information such as Employee Name, Building Number, Floor Level, Desk Number/Workstation No.<br>● Should be able to confirm the delivery and then close the order. (To avoid wrong delivery) |
| Payroll system | The payroll system shall handle the payroll deduction and calculate the total number of dishes ordered by each employee.<br><br>Detailed Acceptance Criteria<br><br>● All the employees must be enrolled into the salary payment deduction.<br>● Should have access to the Canteen ordering system. i.e., Login to the portal/web page.<br>● Obtain the order information, cost of the menu and the total cost for the employees.<br>● Total cost must be deducted from the payroll.<br>● In case of any issues there should be web page for manual entry and fix |
| Management | The Management should be able to generate the reports. The Reports should be easily viewed, downloaded, and exported to different formats such as word, pdf or excel.<br><br>Detailed Acceptance Criteria<br><br>● Should have access to the Canteen ordering system. i.e., Login to the portal/web page.<br>● Find out the most popular dishes based on the highest menu order.<br>● Total number of employees using the system.<br>● Satisfaction of the employees based on the feedback submitted.<br>● Sales for each day<br>● Total monthly earnings<br>● Order forecasting – which items will be ordered and when they will be done |

## Problem Definition and Solution

- Huge rush in the canteen during lunch hours as each canteen could only seat around 150 employees at a time.
- Since employees prefer to take lunch between 12 noon to 1 pm there was a huge rush in the canteen.
- This led to employees wasting time waiting for tables to be vacant.
- Employees did not get their choice of food since the canteen runs out of items.
- There is a lot of wastage at the canteen as they throw away what is not purchased.

## Advantages and Objectives

Advantages of the Canteen Ordering System:

- Employees will now be able to save close to 45 mins of time. They can now focus on their work and lead to productive deliverables.
- They can now get their choice of food.
- It would improve the quality of work life and productivity.
- The food wastage will be reduced.
- The cost will be reduced.
- The feedback system and report will lead to improved employee working condition.
- A check on the food wastage can de done (to plan for less than 15%)
- Reduction of the canteen operating costs
- Automation in the canteen ordering system will lead to employing lesser manpower at the canteen.

### Objectives:

- Reduce the canteen food wastage by a minimum of 30% within 6 months following the first release. Lower the food wastage from 25% to 15%
- Reduce the canteen operating costs by 15% within 12 months, following the initial release.
- Increase the average effective work time by 30 minutes per employee per day, within 3 months.
- By making the ordering process automated and by delivering the food to the user's station, the canteen will be able to operate with lesser manpower.

## Existing System

- How is the existing system? Does it have any of the mentioned features already?

  An online canteen ordering system is not available. The existing system is identified as unplanned and disorganized system with the following drawbacks.

  - 2 canteens that could seat only 300 employees at a time (1 canteen -150 max)
  - Huge rush in the canteen during lunch hours
  - Employees waste a lot of time waiting for the tables to be vacant.
  - 30-35 mins wasted waiting in the queue.

- 10 mins wasted in the commute back and forth to the canteen.
- Employees do not get their choice of food.
- Canteens waste food by throwing away what is not purchased.

The features that are already mentioned are the availability of 2 canteens that can house 300 ppl max at the same time (1 canteen- 150 ppl max), the sufficient number of staff to prepare the meal for all the employees, the staff (delivery boy) to deliver the food to them, human resource work force to employ the change in the pay roll.

## Proposed System

What is the proposed solution or system? Mention in points how the system itself will be for the user.

- User friendly interface /Ease of use
- Improvement of employee working condition.
- Faster access
- Reports can be downloaded easily.
- Easy choice of menu
- Reduction of cost and manual labour
- Order forecasting

## Scope using *use case diagram* (UML)



Use Case Diagram (UML)
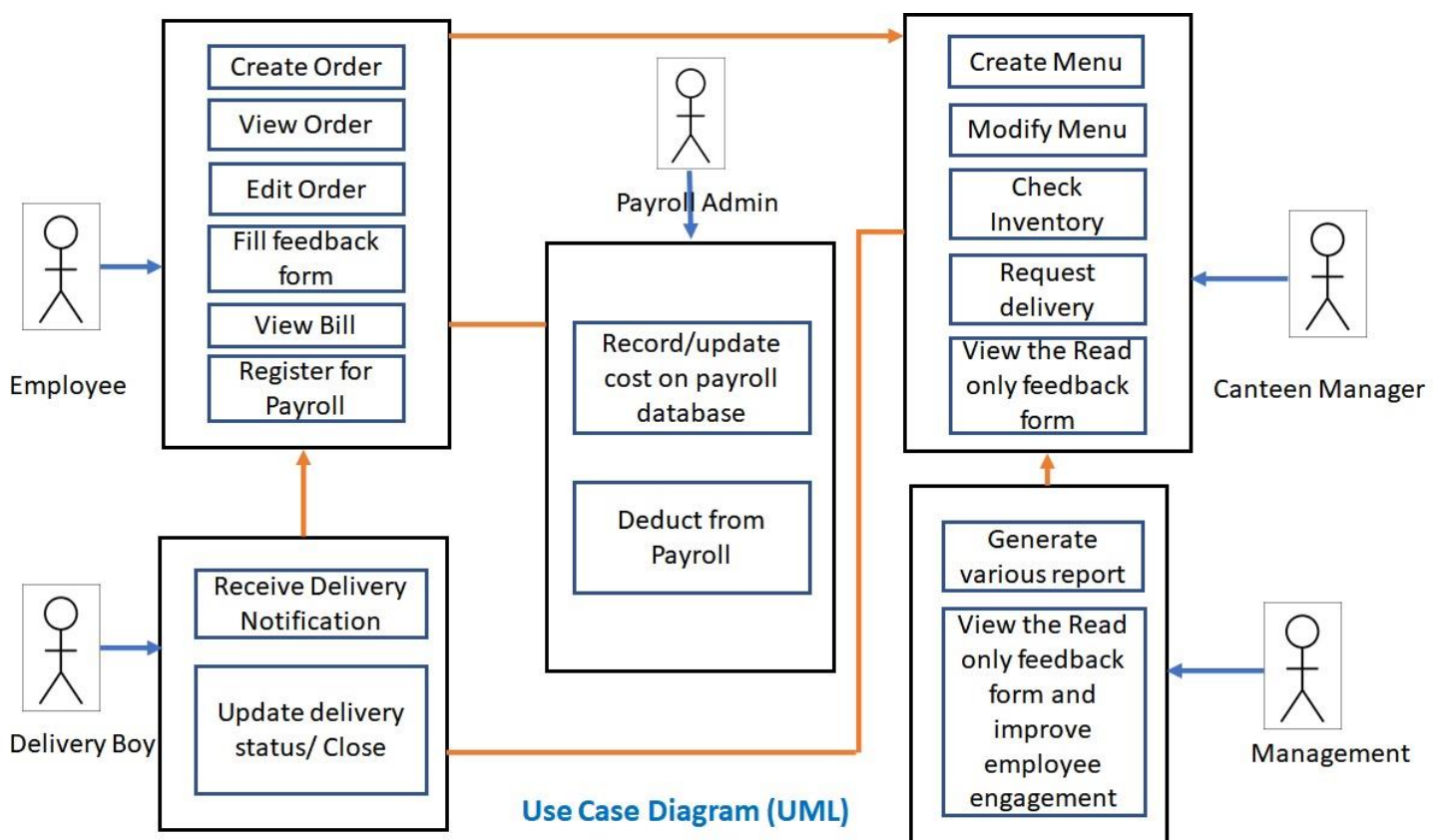
## Scope using *context diagram.*

Depict the scope using Context diagram.

**Scope using Context Diagram**
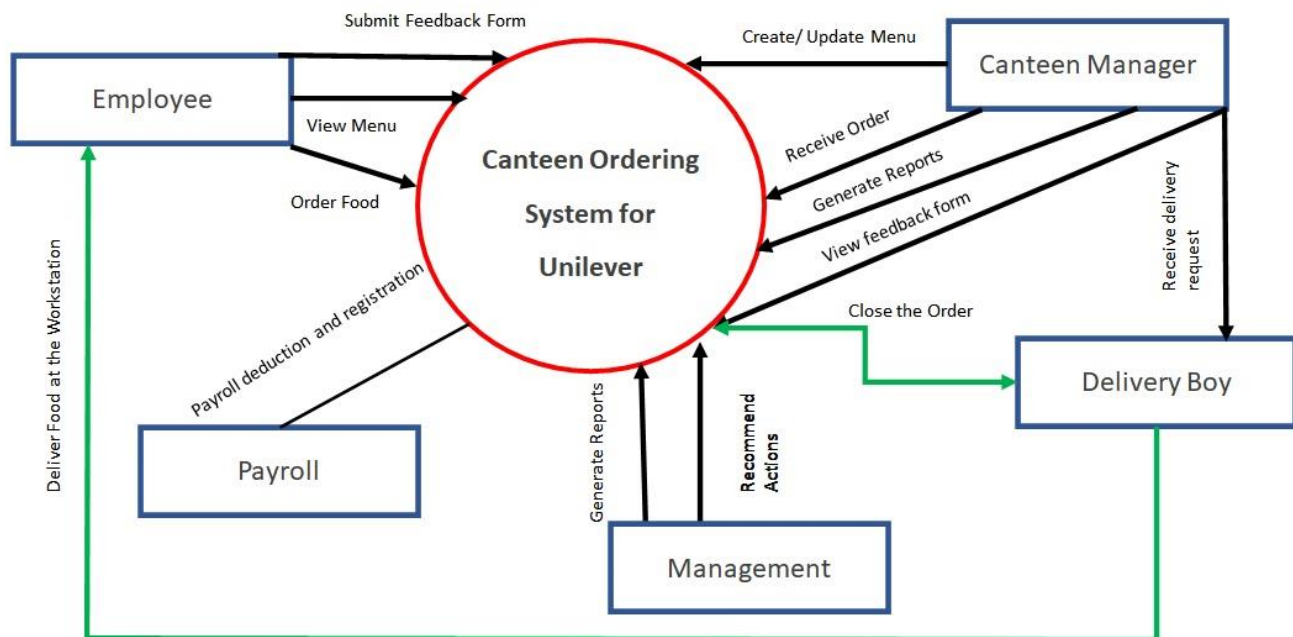


## In Scope

- <u>Employees/Customers (Able to View the Menu, choose, order the food and provide feedback)</u>

  - Login credentials for the canteen ordering system.
  - Employees can see the up-to-date menu for the day with the prices.
  - They can place an order latest by 11.00 am and will not be allowed after.
  - They can select the dishes and create an order.
  - They can edit the items any time before checking out.
  - Once the order is confirmed they cannot cancel or edit the order.
  - If the customer is unhappy with the food or the delivery, then he/she can submit a feedback.
  - The employee must enrol in a salary payment deduction, so the payment for the dishes ordered will be deducted from the employee's salary.

- <u>Canteen Manager (Create, update daily menu as admin)</u>

  - The canteen manager will be able to view the order placed by the employees.
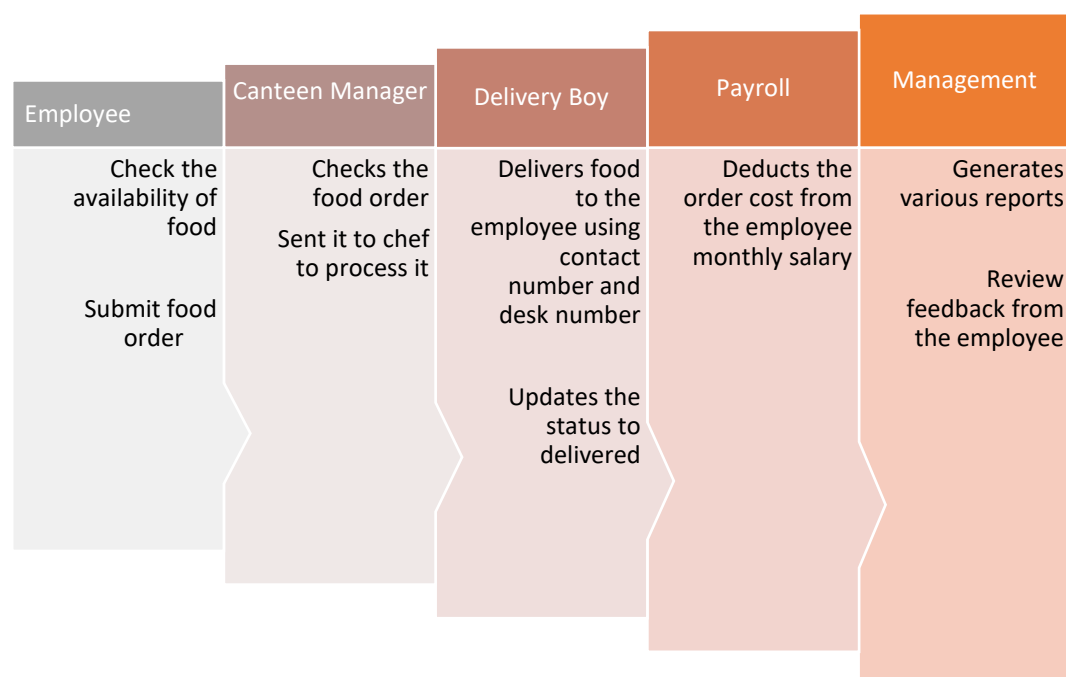
- He can take an inventory of all the dishes ordered by different users and get them cooked by the chef.
- The canteen manager should be able to request a delivery to the employee's workstation.
- They should have an option to download the order as word/pdf /excel in a format that is understandable easily by the cooks.
- The canteen manager must have the administration credentials for the web page.
- He/she must be able to create the menu items and fix the cost. (Create Menu, Modify Menu, Delete Menu, Taking Order, Generating Bills)
- Able to view the orders and have easy filter options based on the menu, cost, quantity etc.
- The Manager must also be able to view the feedback form so he can create a strategy accordingly to succeed/improve.
- The manager must be able to view the data metrics from the order and keep a check on the food wastage and report it to the management.

- Delivery Boy

  - The delivery boy must be able to deliver the lunch to the employee's desk and close the online order once delivered.
  - Should have access to the order list and other important information such as Employee Name, Building Number, Floor Level, Desk Number/Workstation No.
  - Should be able to confirm the delivery and then close the order. (To avoid wrong delivery)

- Payroll (Automated deduction from salary)

  - The payroll system shall handle the payroll deduction and calculate the total number of dishes ordered by each employee.
  - All the employees must be enrolled into the salary payment deduction.
  - Obtain the order information, cost of the menu and the total cost for the employees.
  - Total cost must be deducted from the payroll.

- Management (Report generation)

  - Find out the most popular dishes based on the highest menu order.
  - Total number of employees using the system.
  - Satisfaction of the employees based on the feedback submitted.
  - Sales for each day
  - Total monthly earnings
  - Order forecasting – which items will be ordered and when they will be done.
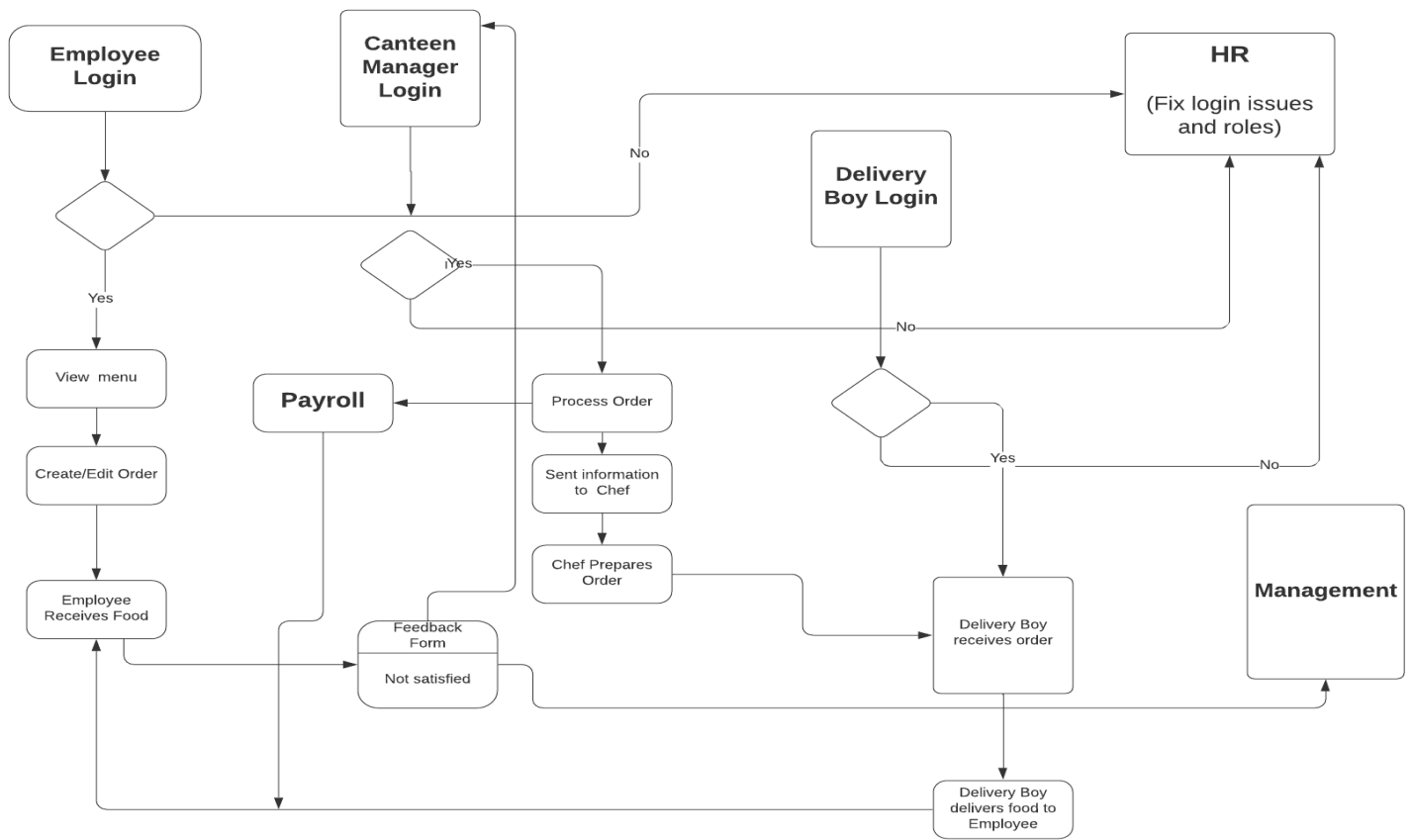  - Fetch various reports.

## Out of Scope

- The payment will be deducted from the salary only. There is no option for payment via Cash, Credit card, Debit card, Mobile Banking, or Internet Banking.
- This system is only available for the 1500 current employees, in case of a guest/visitor/client visit this system will not work.
- The menu items selected by the canteen manager will only be available i.e., they can choose only from the preselected menu.
- Employees cannot order after 11.00 am. Employees should be able to take lunch in their own time/ schedule.
- This system is only available for lunch. Breakfast and dinner menu is unavailable. People who work in the night shift will not be benefited.

## Activity Diagram for the System:

Draw an activity diagram for the system.

| Employee | Canteen Manager | Delivery Boy | Payroll | Management |
|---|---|---|---|---|
| Check the availability of food<br><br>Submit food order | Checks the food order<br><br>Sent it to chef to process it | Delivers food to the employee using contact number and desk number<br><br>Updates the status to delivered | Deducts the order cost from the employee monthly salary | Generates various reports<br><br>Review feedback from the employee |

## Activity Diagram

## ER Diagram for the System:

Draw an ER diagram of the system
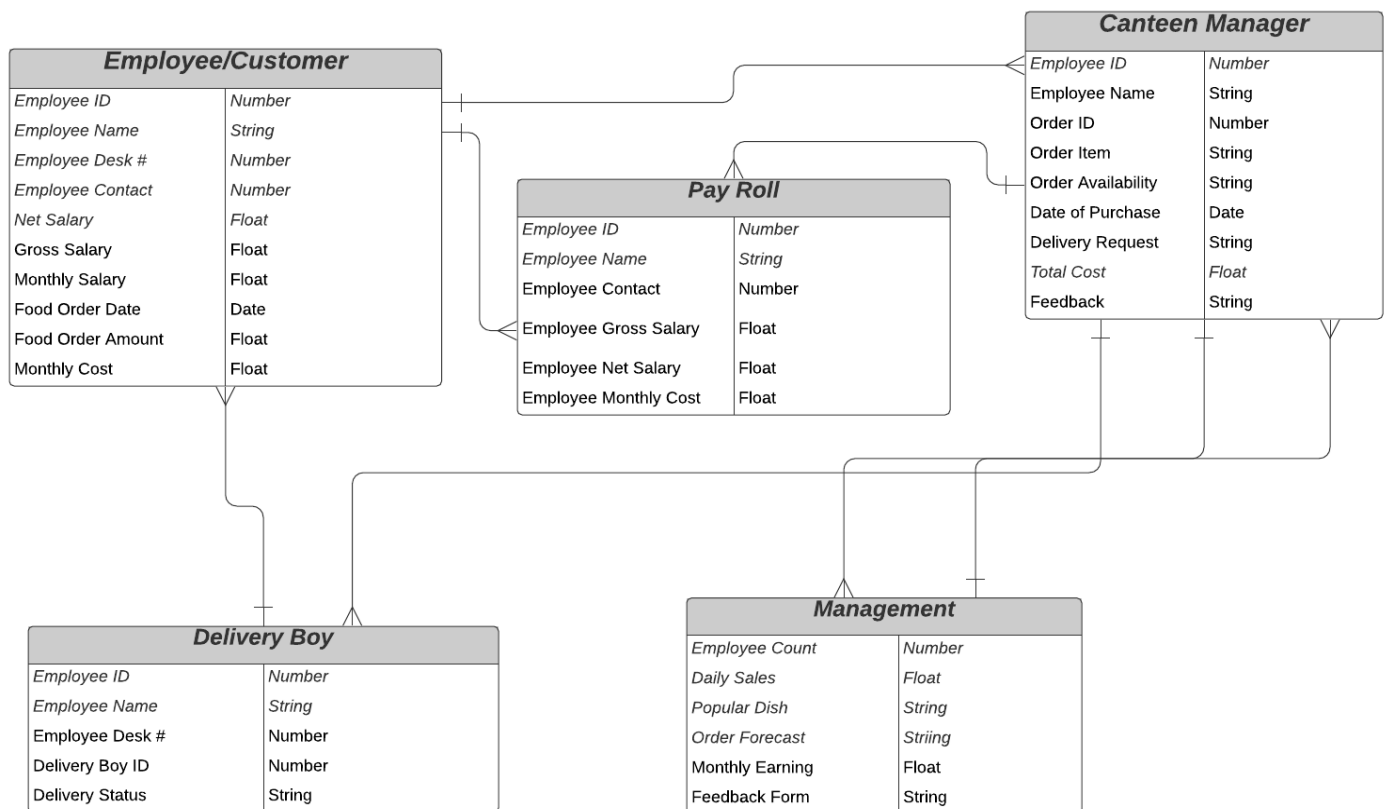
## Preconditions and Triggers: Example

- What user/manager should be able to do in a step?

    - The manager should be the administrator. He must be able to create menu depending on the inventory stock, add or delete the availability of the menu.
    - The employee must be able to view, edit and select the food item and make an order.
    - The employee must be able to edit before making an order. Once the order is made then they should be able to edit.
    - The employee must be able to see the cost of the food,
    - The cost of the food must be deducted from the monthly salary.
    - If in case the employee is not happy with the food or delivery, then must be able to fill up the feedback form.

- What are the triggers?

    - When the employee orders food through the online canteen ordering system, the order must be triggered to the canteen manager and the chef to process the order.
    - Once the chef has completed the food order, the trigger must be sent to the canteen manager and the delivery boy indicating that it is ready to be delivered to the employee.
    - Once the delivery boy delivers the food to the employee then the trigger to complete the food order must be accomplished and the payroll must process the deduction monthly.
    - When the employee is unhappy with the food or delivery then he/she must be able to fill the feedback form. A trigger must be prompted so the canteen manager must be able to see the read only form of the feedback and improve the canteen.

- What is the basic flow?

    - The employee logins in and places the food order via online canteen ordering system.
    - The canteen manager and the chef receive the order and starts working on it.
    - Once the food is prepared, the delivery boy delivers it to the employee's workstation.
    - The delivery boy completes the order, and the payroll must deduct it from the salary.

- What are the data elements?

| Employee | Pay Roll | Canteen Manager | Delivery Boy | Management |
|---|---|---|---|---|
| Employee ID | Employee ID | Employee ID | Employee ID | Employee Count |
| Employee Name | Employee Name | Employee Name | Employee Name | Daily Sales |
| Employee Desk # | Employee Contact | Order ID | Employee Desk # | Popular Dish |

| Employee Contact | Employee Gross Salary | Order Item | Delivery Boy ID | Order Forecasting |
|---|---|---|---|---|
| Net Salary | Employee Net Salary | Order Availability | Delivery Status | Monthly Earning |
| Gross Salary | Employee Monthly Cost | Date of Purchase | | Feedback Form |
| Monthly Salary | | Delivery Request | | |
| Food Order Date | | Total Cost | | |
| Food Order Amount | | Feedback | | |
| Monthly Cost | | Food Completion Time | | |
| Feedback Form | | Food Delivery Time | | |
| | | Order Status | | |

- In case of errors, what happens?

    - When the employee makes an order after 11 am then a message should be delivered stating that the time has elapsed, and that the food order will not be processed.
    - If the chef takes more time to prepare the food, then the notification should be sent to the canteen manager and the employee.
    - If in case the delivery boy delivers the food wrongly then a free meal or coupon or complimentary drink must be given to the employee through the email and the message should be sent to the payroll to prevent deduction from the employee salary.
    - Login issue
    - Not enrolled in the salary deduction program
    - Wrong food item sent to an employee must receive replacement.

## **Business Requirements:**

**Business Objective 1:**

Reduce canteen food wastage by a minimum of 30% within 6 months following first release.

Scale: Value of food thrown away each month by examining the canteen inventory

- Previous - 25% wasted.

- Must plan for: Less than 15%

**Business Objective 2:**

Reduce canteen operating costs by 15% within 12 months, following initial release.

**Business Objective 3:**

Increase average effective work time by 30 minutes per employee per day, within 3 months.

**Business Objective 4:**

By making the ordering process automated and by delivering the food to the user's workstation, the canteen will be able to operate with lesser manpower.

# Functional Requirements

| FR 1 | The users Employees, Canteen Manager, Delivery Boy, Payroll and Management must be able to create account. They need to sign up. Forgot username and Forgot password must also be in the available options. |
|------|---|
| FR 2 | The administrator must be able to assign roles and check the positions of the users. The web page must appear different for the users and the options must also be different. |
| FR 3 | Requirements for the different users<br><br>**Employees**- View the available menu, choose the food item and place order. Must also be able to view the bill and look at the past order. In case of dissatisfaction in the food or the delivery then must be able to fill the feedback form. |
| FR 4 | **Canteen Manager** – Create menu depending on the inventory, edit and amend them as required with their respective cost. Check the order status and view the read only copy of the feedback form. |
| FR 5 | **Delivery Boy** - Receive the order and deliver it to the employee workstation. Update the order status to delivered. |
| FR 6 | **Payroll** – Deduct the employee monthly salary based on the cost of the food item ordered. |
| FR 7 | **Management** – Generate various reports and view the feedback form submitted by the employee and strategies to improve the canteen and increase employee engagement. |

# Non-functional Requirements

| FR 1 | This canteen ordering system is only available for the employees. In case of a guest, visitor or client meet this system would not work. |
|------|---|
| FR 2 | Only lunch menu is available. This does not benefit people working in the night shift or if employees choose to have their lunch later. |

| FR 3 | Employees can only select the food item from the preselected menu chosen by the canteen manager |
|------|--------------------------------------------------------------------------------------------------|
| FR 4 | Employees cannot pay via Credit card, debit card, mobile banking, cash, and internet banking |
| FR 5 | The website must work for all types of browsers and not crash. |

## System Requirement:

- The website must be fast enough and not crash when too many employee's login and make an order at the same time.
- It is required to support a volume of 1500 employees ordering the web pages. It should be light and render fast.

## Usability:

- The website must be convenient with ease of use and user friendly.
- It should pop corresponding messages and notifications depending on the actions selected by the user.
- The employee must be able to view past order and download the bill for reference.
- The canteen manager must be able to download the feedback form.
- Management would not want employees ordering from the system as they cannot understand the screens and data fields on the screen.

## Environments

- The portal will be developed in Java.
- Java does not change much over time and will require very less maintenance on the code level.