Canteen Ordering System for Unilever Simplilearn Project for CBAP

Project Submission

by: Onyinye Oji

On July 17 2022

Table of Contents

Introduction

Unilever is a British-Dutch Multinational Company (MNC) Fast Moving Consumer Goods (FMCG) company, headquartered in London, England. Unilever is one of the oldest FMCG companies, and its products are available in around 190 countries. In its UK offices, Unilever had around 1500 employees which were spread across 12 floors. They had 2 canteens to cater to these 1500 employees. Each canteen could seat around 150 employees at a time.

Business Objective

Most employees prefer to take their lunch between 12 noon to 1 pm. This led to a huge rush in the canteen during lunch hours resulting in employees wasting a lot of time waiting for tables to be vacant. Management calculated that it took around 60 minutes for employees to go and come back from lunch. Almost 30-35 minutes were wasted waiting in a queue to collect their food and get a table to sit and eat. However, the time spent eating was barely 10-15 minutes. The remaining 10 minutes were spent reaching and coming back from the canteen using the elevators.

Stakeholders

ACTOR	What they can do with the software created
Employee/Customer	● The employees have requested a system that would permit a canteen user to order meals online, ● Employees would like to get the choice of food they want, and they should be able to edit the items they want to order any time before checking out. ● The employees should be able to get the meals delivered to their workstation at a specified time and date,
Canteen Manager	● The canteen manager should be able to view all orders placed by the employees. ● He should be able to take an inventory of all the dishes ordered by the different users and get them cooked by the chef. ● The Canteen Manager should be able to make a delivery request of each employee that placed an order for the meal to be delivered at their workstation.

Delivery Boy	● The delivery boy shall deliver the ordered lunch to each employee's desk. ● After each delivery, the delivery boy should be able to close the online customer order.
Payroll system	● The payroll system at the end of the month should be able to calculate the total number of dishes ordered by each employee. ● The payroll system shall deduct the total amount of food ordered from the employee's salary.
Management	Management would like the following reports: ● The most popular dishes ordered? ● The number of employees using the system? ● Satisfaction of the employees using the system. This should be tracked based on feedback submitted by the employees. ● Sales for each day. ● Total monthly earnings. ● Order forecasting i.e., a prediction of which items will be ordered and when they will be ordered.

Problem Definition and Solution

Canteen

- Huge rush in the canteen during lunch hours.
- The canteen runs out of certain choice food.
- Wastage of a significant quantity of food that is not purchased by throwing them away

Customer

- During Lunch time, there is a rush in the Canteen for vacant tables.
- Time wasted waiting in a queue to collect their food
- Choice of food is limited because the canteen runs out of certain items.

Solution: An automated ordering system that would allow employees to order meals online and get them delivered to their work location at a specified time and date.

Advantages of Canteen Ordering System

For the canteen, the advantages are as follows:

- A rush or a queue at lunchtime will be reduced.
- The food wastage will be reduced.
- This will reduce the cost.

For the employees, the advantages are as follows:

- Employees that use the services would save time.
- Removes the stress of long queues waiting to be served.
- The employee is presented with a variety of lunch dishes.
- Provides an option to eat at the workstation or canteen.
- Easy payment option as payment will be deducted from salary every month.
- Improve quality work-life and productivity.

Objectives of the Canteen Ordering System

There are 4 objectives

1: Reduce canteen food wastage by a minimum of 30% within 6 months following the first release. Scale: Value of food thrown away each month by examining the canteen inventory • Previous – 25% wasted • Must plan for: Less than 15%

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

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

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.

Existing System

In the existing system, most employees prefer to take their lunch between 12 noon and 1 pm.

They leave their various workstations and head to the canteen

When they get to the canteen, they wait in a queue to order their food and make payment, sometimes their desired food is not available because the canteen had run out of items.

When some employees get their food, they have to wait to get a table to sit and eat if none is readily available.

Eat their lunch between 10-15 minutes

Go back to their workstation.

The whole lunch process was calculated to take 60 minutes, 30-35 minutes were spent on queuing for food and table, 10-15 minutes for eating and 10 minutes going and coming back from the canteen.

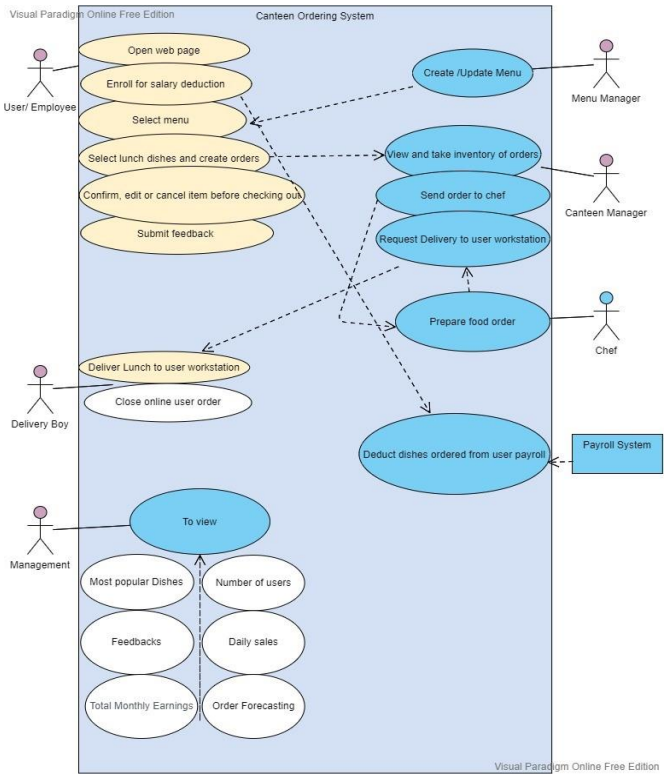
The canteen throws away a significant quantity of food not purchased.

Proposed System

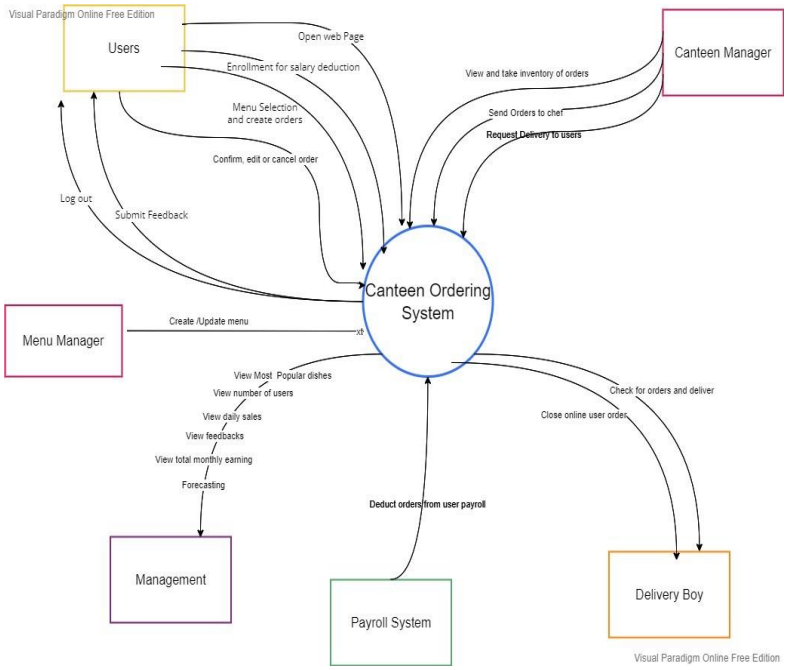
The proposed solution is an automated ordering system that would permit employees to order meals online and have the meals delivered to their workstations at a specified time and date.

- User-friendly interface.
- They 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 its prices.
- The lunch order can be placed by employees latest by 11 am. After 11 am the system shall not allow the users to place orders for lunch items
- 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 any time before checking out, once the order is confirmed and the user has checked out, they should NOT be able to cancel or edit the order.
- If an employee does not like any food item or is not happy with the delivery system by the canteen, they should be able to submit feedback.
- There is no payment gateway, so the payment for dishes ordered shall be deducted from the employee's salary. Hence, the employees need to enrol for salary payment deduction.

Scope using use case diagram (UML)



Scope using context diagram



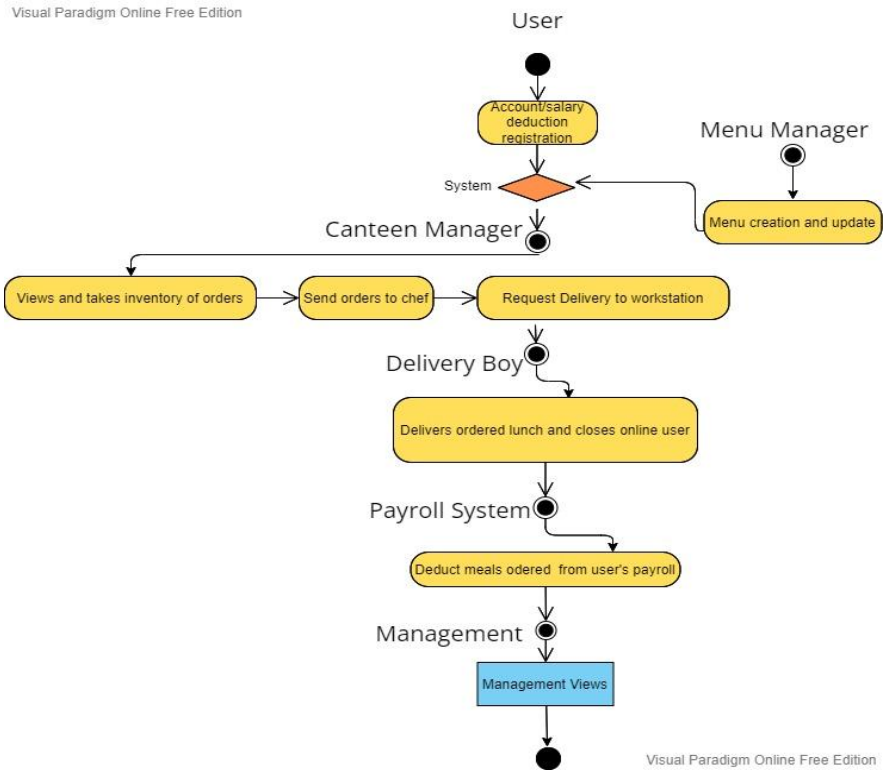
In Scope

a) Employee lunch booking system: To enable the user to log into the system, make lunch orders, enrol for salary deduction, confirm, edit, and cancel orders and give feedback when necessary.
b) Menu creation and update feature: Enable the menu manager to create and update the menu for each day.
c) Order fulfilment feature: The Canteen manager should be able to view and take inventory of orders, send orders to the chef, and send orders to the delivery boy. The delivery boy views the order, then delivers it to the user's workstation and closes each order after delivery.
d) Payment collection feature: The payment department should be able to view employees that registered for salary deduction, deduct the total amount of lunch ordered at the end of the month from the user's salary,
e) Management reporting feature: Management should be able to view,
    - Which dishes are the most popular?
    - How many employees are using the system?
    - Satisfaction of the employees on using the system. This should be tracked based on feedback submitted by the employees.
    - Sales for each day
    - Total monthly earnings

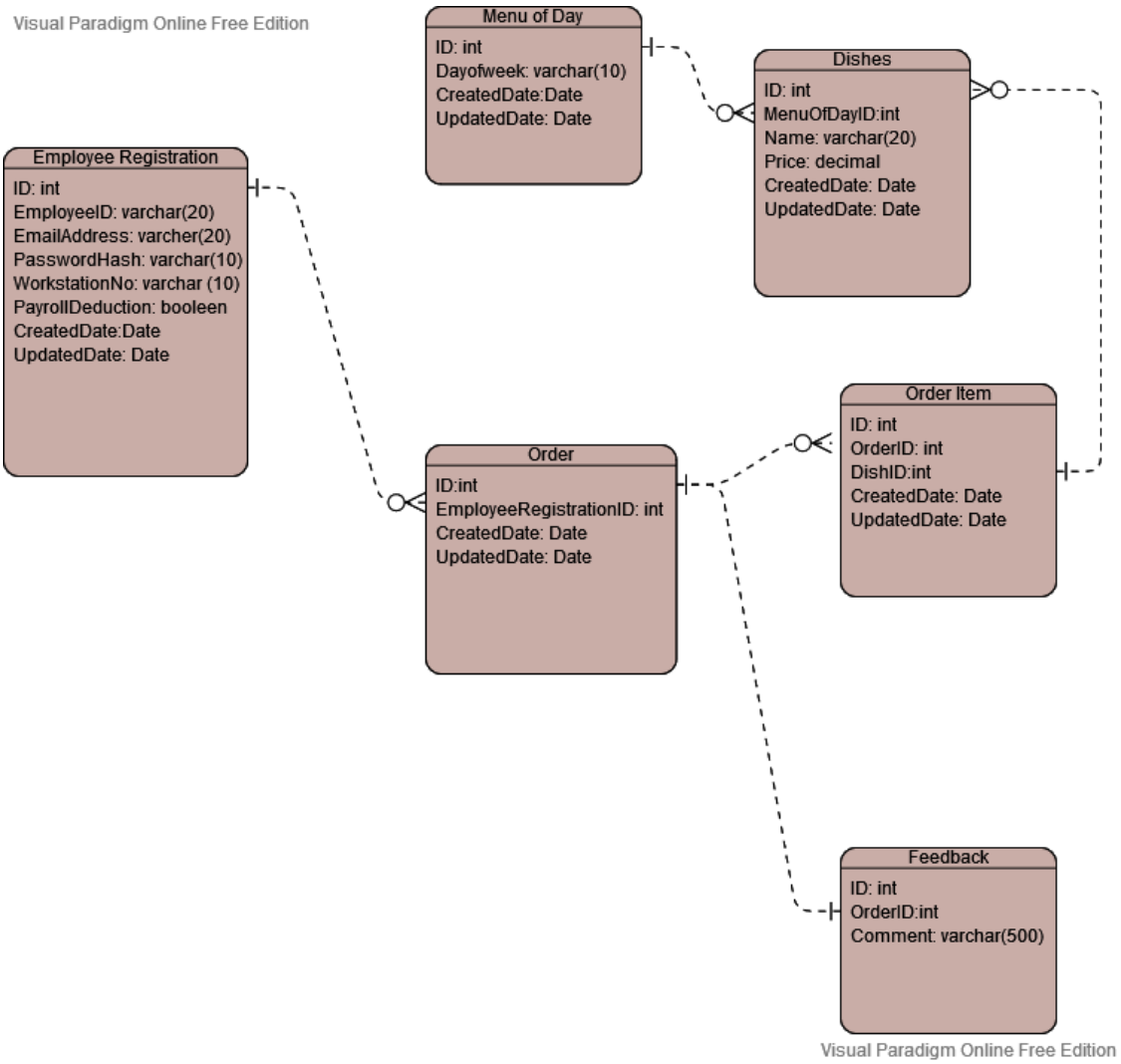
Out of Scope

Order forecasting

Activity Diagram for the System



ER Diagram for the System



Preconditions and Triggers

Precondition: User-
Open an account and register for salary reduction
Select the menu and place an order

Precondition: Management-
Management has an account for the canteen system
Gets a list of the daily orders on or before 11 am
Chef prepares the orders
The delivery boy gets a delivery request to the user's workstation

Triggers:
Users: Placing a lunch order
Canteen Manager: viewing the lunch orders

Delivery boy: getting delivery request

Basic Flow

User opens an account and register for salary deduction-> Checks the menu for the day->places his/her lunch order on or before 11 am -> Canteen manager views and take inventory of orders-> sends orders to chef ->Chef prepares the lunch-> Delivery boy gets a delivery request to user's workstation->closes online user order->Payroll Department gets the amount for food purchased for monthly deduction from user's payroll-> Management get reporting features.

Data elements:
Users, menus, orders, feedback

In case of errors:
The system should be able to display information about the error and suggest solutions or the next step the user can take in resolving the error.

Business Requirements

Business objective – 1:

- Reduce canteen food wastage by a minimum of 30% within 6 months following the 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 the 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

1	There should be various sections in the system for the Employees/users, canteen manager, delivery boy, Menu Manager, Payroll department and Management.
2	Employee/user should be able to log in and create an account

3	Enrollment for salary deduction and confirmation of such
4	An updated menu with the list of available dishes
5	The user should be able to place an order for a meal, edit, delete or confirm the order. Prices of meals should be viewed
6	The system should allow meal orders to be placed latest at 11 am, after 11 am, a user should be unable to make an order.
7	Users should be able to give feedback on meals ordered
8	Inventory comes in to be recorded in the system, and once the order is prepared, the inventory is shown as consumed. All the wastage also gets recorded and updated in the system.

Non-functional Requirements

1	User password should consist of caps, lower case, numerical and symbols
2	Orders will be archived after a predefined period
3	Menu suggestions based on frequent user order

System Requirements

- Easy to use
- Enable smooth and secure operation
- User-friendly interface
- Secure from unauthorized persons
- Manage user's lunch orders

Usability

1	User-friendly and self-explanatory user interface
2	Webpage should be available on Intranet as well as internet
3	All employees can browse but only those who accept payroll deductions will be allowed to order

Environment

Java code to be used as low in maintenance.