Canteen Ordering System for Unilever

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Submitted by:

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Overview

Unilever is a British-Dutch MNC 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.

Most employees would 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 in 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.

Employees don't always get their choice of food they want because the canteen runs out of certain items. The canteen wastes a significant quantity of food by throwing away what is not purchased.

Many employees have requested a system that would permit a canteen user to order meals online, to be delivered to their work location at a specified time and date.

Business Analysis Core Concept Model (BACCM)

<table>
<tr><th>Concepts</th><th colspan="3">Description</th></tr>
<tr><td>Need</td><td colspan="3">To develop a system which reduces the wait time of employee in canteen during lunch time, helps in ordering preferred food item online and reduce wastage of unordered food.</td></tr>
<tr><td>Change</td><td colspan="3">To move present canteen offline system to online ordering/delivering system.</td></tr>
<tr><td>Solution</td><td colspan="3">• Development of web application allowing Employees to order their preferred food prior to break time (12 noon).
• Preparation and Delivery of food at their work location on successful order placed by employee as specified by employee.</td></tr>
<tr><td>Stakeholders</td><td>Internal
• Project Manager
• Operational Support Team
• Implementation IT Team
• Testers
• Management</td><td>Business Analyst</td><td>External
• Employee/Customer
• Canteen Management
○ Chefs
○ Delivery Boy
○ Canteen Manager
• Sponsor
• Regulators</td></tr>
</table>

			• Food Suppliers
Value	• Enhance efficiency and productivity of employees by saving wait time in long queues during lunch time. • Reduce wastage of food in canteen which wasn't ordered. • Reduce canteen operating cost.		
Context	Request by employees to develop a system which allows them to order food online, to be delivered at their work location at specified time and date due to the limitation of only 2 canteens with maximum sitting capacity of 150 each which makes it hard to cater 1500 employees where most employees prefer lunch break around 12 noon to 1pm.		

Stakeholders

ACTOR	What they can do on the software created
Employee/Customer	• Order food latest by 11 am from updated menu (on daily basis) and choose preferred time/date for it to be delivered. • Modify order before checking out. • Provide feedback.
Canteen Manager	• Create/Update menu on daily basis. • View orders placed by employee, get it prepared by chefs and ensuring proper delivery of the order.
Delivery Boy	• To be able to close the order once food is delivered at employee's desk.
Payroll system	• Maintaining employee's database for the no. of dishes order w.r.t their respective price to be deducted from employee's salary automatically.
Management	• Check most popular dishes. • No. of employees using system. • Satisfaction of employees using feedback mechanism. • Sales of each day, total monthly earnings and order forecasting.
Operational Support Team	• Provides operational support to employees/customer in case of any issue while using the application.

Project Manager	• Ensure successful implementation of solution by maintaining all constraints, resources, budget and time.
Implementation IT Team	• Develop online web application for the employees to order food from Unilever canteen and ensuring that all 1500 employees are able to use application smoothly.
Testers	• Test the usability and convenience of application to fix any errors/bugs if identified.
Sponsor	• Sponsoring all budget related activities and providing useful insights.
Regulator	• Ensuring food is as per the health standards.
Food Supplier	• Providing logistical support to Canteen management based on the demand.
Business Analyst	• Ensuring proper collaboration between external and internal stakeholders to implement successful solution effectively.

RACI Matrix:

Identification of stakeholders responsible, accountable, consulted and informed for the implementation of Online Canteen ordering system.

Stakeholders	Responsible	Accountable	Consulted	Informed
Employee/Customer				**I**
Canteen Manager			**C**	
Delivery Boy				**I**
Payroll system				**I**
Management			**C**	
Operational Support Team	**R**			
Project Manager		**A**		
Implementation IT Team	**R**			
Testers			**C**	
Sponsor				**I**
Regulator			**C**	
Supplier	**R**			

Business Analyst	R			

Problem Definition

Problem Definition:

Canteens of Unilever offices in UK are not well occupied to cater their employees. Office is spread across 12 floors with almost 1500 employees where they have 2 canteens to cater maximum 150 employees each at a time. Employees usually take lunch break around 12 noon to 1pm which led to huge rush in canteen. Due to huge rush, employees have to wait in queues and it wastes almost 30-35 minutes where only 10-15 minutes is spent for eating by employees which shows that almost 50-60% time is wasted in wait time.

Employees also don't always order the food of their choice and it results in wastage of food by canteen and they have requested to create online food ordering system which permits them to order food online and get it delivered at their work location in specified time and date.

Advantages

Advantages of the Canteen Ordering System:

For Employees:

- A system would save considerable time to those employees who use the service.
- It would increase the chance of them getting the food items they prefer.
- This would improve both their quality of work life and their productivity.

For Canteen:

- The food wastage will be reduced.
- This will reduce the cost.

Existing System

Current As Is System:

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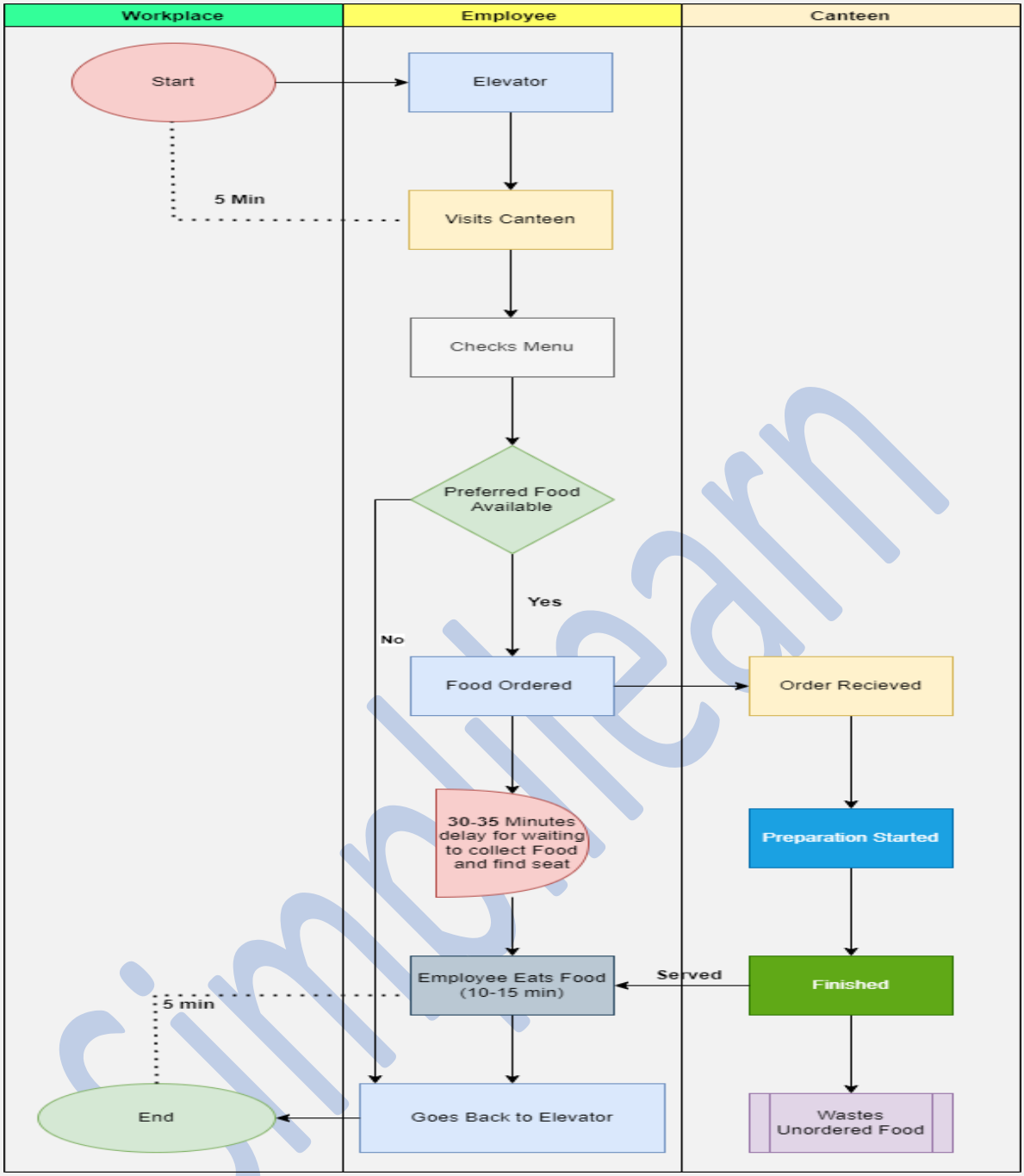


Proposed System

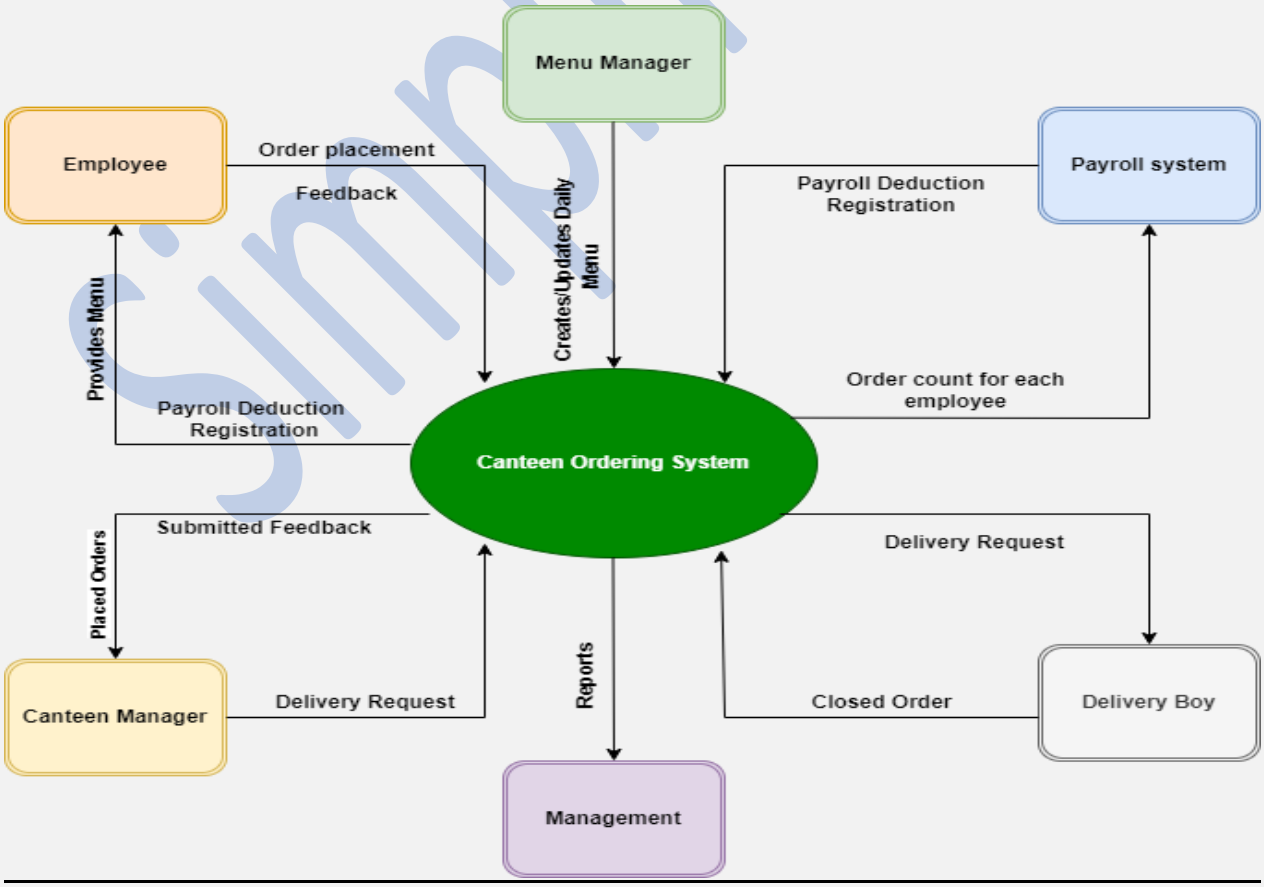
Proposed solution is an Online canteen food ordering system requested by the employees which allows them to order food as per their preference and get it delivered at their work station.

Online canteen food ordering system includes following some points.

- User/Employee should be able to open web page, view up to date menu of available dishes along with prices.
- Lunch order should be placed before latest by 11 am to provide sufficient time for preparation of food.
- Order modification (Cancel/Edit) can only be done before checking out.

- Menu manager needs to create/update menu on daily basis.
- Canteen manager should be able to check placed orders by employees, get it prepared by chef and delivered by delivery boy to employees' workstation.
- Delivery boy should be able to close employees' order post successful delivery.
- Customer should be able to submit feedback for the order.
- Employee needs to enrol in payroll system for automatic deduction of order amount from their salary.
- Payroll team will calculate total no. of dishes ordered by the employee at the end of the month and applicable amount will be deducted automatically from the employees' salary.
- Management would like the following reports:
    - 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 on the basis of 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.

Scope using context diagram



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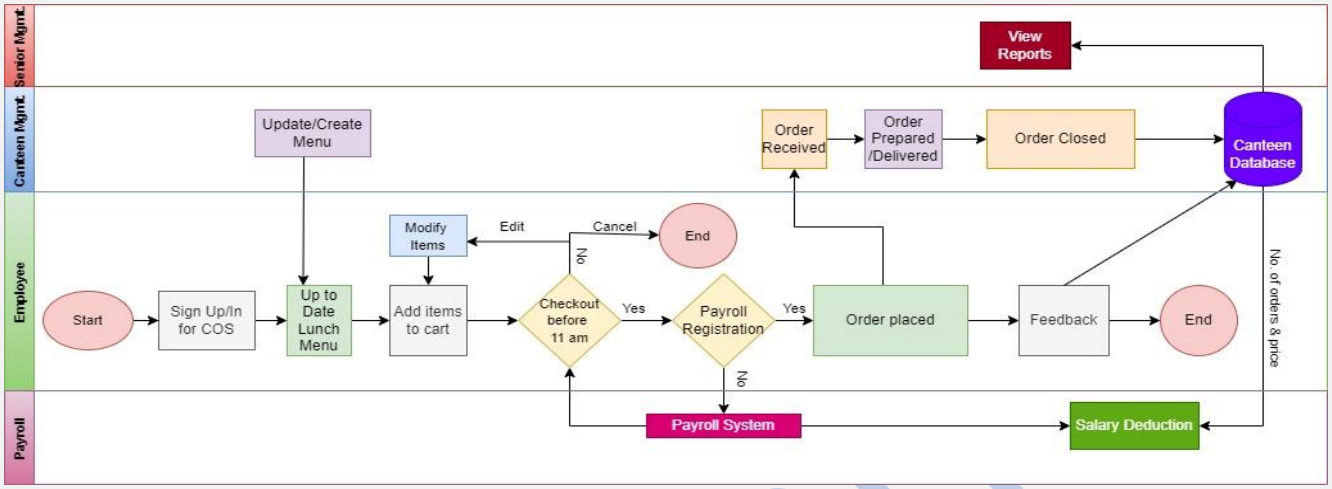
In Scope

Features	Benefits
Login & Registration	• Employee should be able to easily sign in and register for the web application.
Order Menu	• User should be able to view order menu. • Menu needs to be created/update daily by menu manager.
Order	• User should be able to place lunch order latest by 11 am. • User can modify order items before checking out. • Canteen manager can check inventory of all orders and get it prepared by chef and assign delivery to employee's workstation. • Delivery boy should be able to close order once it is delivered.
Feedback	• Employee should be able to submit feedback if they are happy or not happy with the order.
Payment	• User needs to enroll for payment deduction from their salary as other payment mode/gateway is not available.
Payroll System	• Payroll calculates the no. of orders for each user at the end of the month and automatically deduct the payment amount from employee's salary w.r.t the order price.
Reports	Following reports should be available for the management. • Most popular dishes ordered by employees. • No. of employees using the system. • Feedback submitted by employee for better analysis. • Sales for each day. • Total monthly earnings. • Order forecasting; prediction of food items which will be ordered and when by the employee.

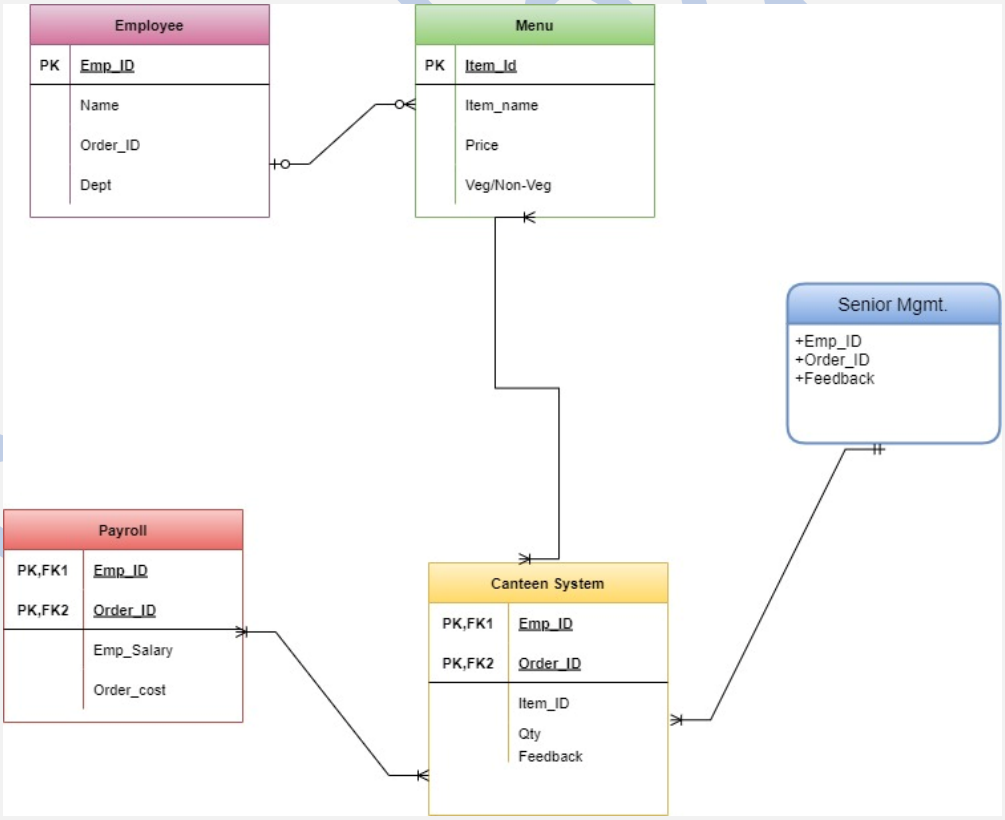
Out of Scope

Features	Reasons for not implementation
Login/registration	• This feature is only available for Unilever employees and can't be used by any other person outside the organization.
Order	• Employee not able to submit feedback/request for a order item not available in the menu. • Not able to place lunch Order placement post 11 am. • Order modification not available after checking out. • Delivery of the order outside the organization is not provided by the system.
Payment	• No other payment gateway available. • Refund options not available for employee.
Food Inventory	• Inventory of available items not shown in the application.

Activity Diagram for the System:



ER Diagram for the System:



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

For Employee:

- Sign up/Sign in for online canteen ordering system.
- Registration for payroll deduction.
- View up to date daily menu of food with price.
- Place order latest by 11 am.
- Option to modify (edit/cancel) order items before checking out.
- Option to submit order feedback.

For Canteen Management:

- Create/Update daily food menu.
- Check total placed orders for order preparation.
- Closure of order post-delivery.
- View feedback.

For Senior Management:

- To view reports of following:
    - Most popular dishes.
    - No. of employees using new system.
    - Satisfaction of employees based on submitted feedback.
    - Sales for each day.
    - Total monthly earnings.
    - Order forecasting.

Non-functional Requirements

- **Scalability:** Scalable for volume of upto 1500 employees.
- **Usability:** User friendly, self-explanatory and ease of navigation.
- **Availability:** Should be available for use while the window for placing orders is open.

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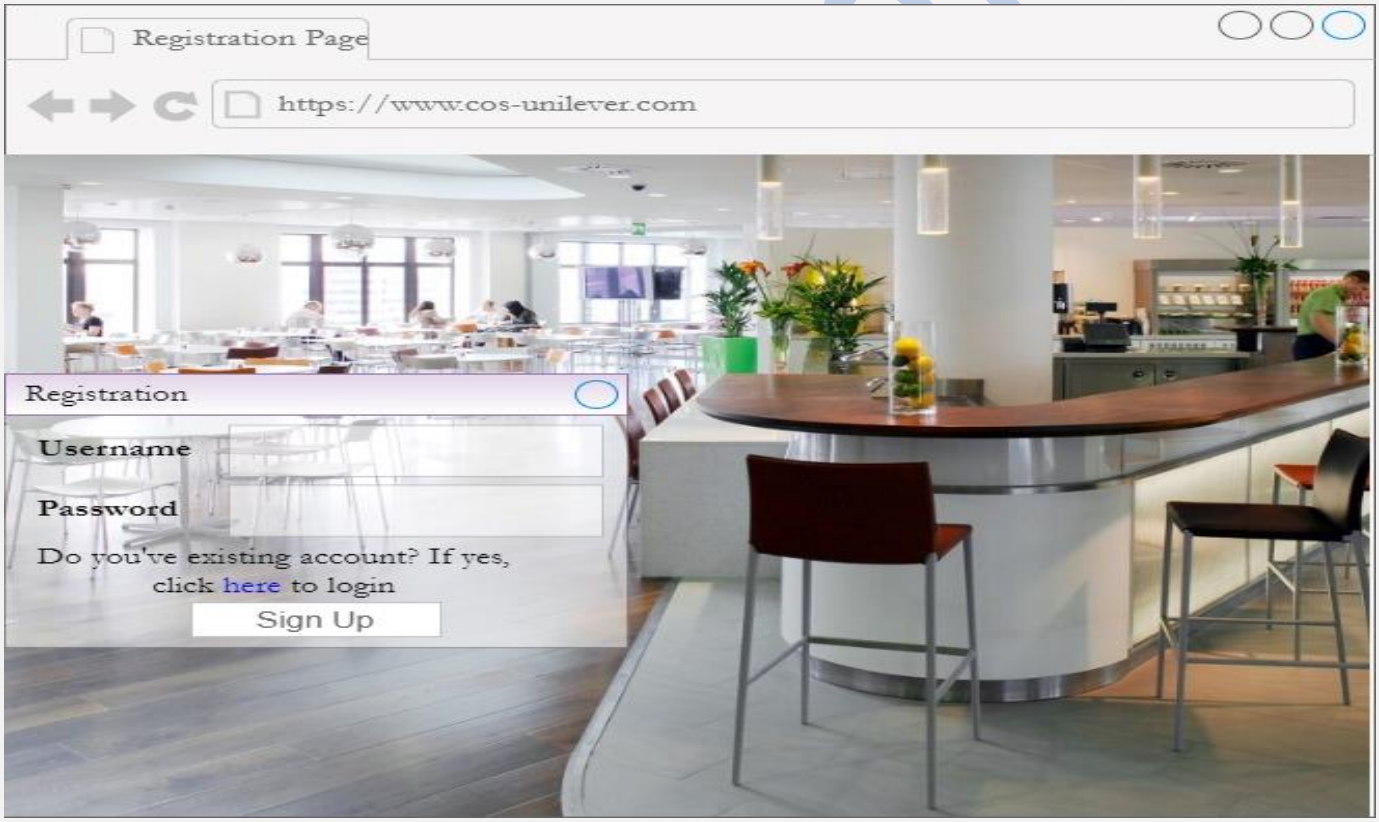
- **Maintainability:** Should be developed in Java for ease of maintenance.
- **Extensibility:** Adaptable to new changes in the application.

System Requirement: This canteen ordering system is required to support a volume of 1500 employees ordering. the web pages should be light and render fast.

Usability: The screens should be self-explanatory and very user friendly. Management would not want employees not ordering from the system as they cannot understand the screens and data fields on screen.

Environments: We are going to be creating and maintaining the program in Java. We chose Java because it will not change much over time, and if we make it well, there will be very little maintenance to be done on the code.

Wireframes/Mock-up Screens:



Lunch Menu
https://www.cos-unilever.com/menu
Kura
STARTERS
SMALL PLATES
SOUPS
KIDS MENU
SANDWICHES
DAILY SANDWICH SPECIALS
SIDES

Simp