Software Requirements Specification

for

Canteen Order Automation System

Version 1.0

Prepared by

Group #: 16 **Group Name: *Hardwired***

Sharath Kumar V	**200916**	**sharathk20@iitk.ac.in**
Kavya Jalan	**200503**	**kavyajalan20@iitk.ac.in**
Jhaansi Reddy	**200477**	**jhaansir20@iitk.ac.in**
Ishan Bawne	**200456**	**ishanb20@iitk.ac.in**
Rashmi G R	**200772**	**rashmigr20@iitk.ac.in**
Mohd Shadab	**200593**	**mshadab20@iitk.ac.in**
Mohil	**200596**	**mohil20@iitk.ac.in**
Rathod Preet	**200775**	**preetr20@iitk.ac.in**
Harshit Kumar Tiwari	**200432**	**harshitkt20@iitk.ac.in**
Alaganji Rohan Satvik	**150082**	**arsatvik@iitk.ac.in**

Course: **CS253A**

Mentor TA: **Aman Aryan**

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Version 1.0	Sharath Kumar V Kavya Jalan Jhaansi Reddy Ishan Bawne Rashmi G R Mohd Shadab Mohil Rathod Preet Harshit Kumar Tiwari Alaganji Rohan Satvik	Basic SRS for Canteen Order Automation System	01/02/22

1 Introduction

1.1 Product Scope

In the current pandemic days, there are a lot of constraints imposed on the gathering of people for the welfare of the campus. One of the most common gathering places include canteens. Due to which some canteens do not have dine-in facilities, some were also closed for a certain period. So, our project aims to digitize and automate the canteen order and management system.

This system will help to manage and run the canteen business systematically. All the information about daily expenses and profit will be saved in the system for canteen owners. Students will be able to order from other hall canteens when inter-hall movements are restricted. Feedback system will enable students to choose and canteen owners to improve their food.

1.2 Intended Audience and Document Overview

This document is intended for different types of readers such as canteen owners(client), students(client), system designers, system developers, project managers, marketing staff, testers and documentation writers.

This document has a sequential overview of the whole project starting from introduction which includes sub parts such as product scope, intended audience, references, document conventions and some more. The document further describes the overall description of the product which covers sub parts such as product overview and functionality, design, assumptions and some more. The flow of the document then covers some functional and non-functional requirements of the system.

1.3 Definitions, Acronyms and Abbreviations

We will use bold letters to emphasize main topics and for all major functions of the system. Abbreviations and definitions of some useful terms used by us are given below,

1.3.1 Acronyms and abbreviations:

TERM	DEFINITION
AS	Assumption
COAS	Campus Order Automation System
DE	Dependency
Fig	Figure : Any diagram used in this document to convey any information.
IITK	Indian Institute of Technology, Kanpur

Stats	Statistics
SRS	Software Requirement Specification
UPI	Unified Payment Interface
UC	User Case

1.3.2 Definitions:

Term	Definition
Admin	Person as the backend user of the proposed software in the current SRS; basically who receives the orders, updates menu and receives reviews about the canteen food.
Customer	Person who acts as the front end user of the proposed software in the current SRS; orders for food from the web portal.
Payment Gateway	Payment gateways are the consumer-facing interfaces used to collect payment information and complete transactions.
SRS	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.

1.4 Document Convention

We have used bold letters to emphasize the main topics of the document. The document is written in Arial font with size 11 for general content, size 12 for sub-headings and size 14 for headings of sections. Also, headings and subheadings are in bold. Comments and notable points are italicized. All subsections can be identified through section numbers.

1.5 References and Acknowledgments

- https://www.scribd.com/document/410537515/SRS-FOR-CANTEEN-MANAGEMENT
- https://www.matrixaccesscontrol.com/cafeteria-management.html
- https://www.cse.chalmers.se/~feldt/courses/reqeng/examples/srs_example_2010_group2.pdf

We would like to thank our course instructor Dr. Indranil Saha for instructing us and our TA Mr. Aman Aryan for his guidance.

2 Overall Description

2.1 Product Overview

The system being developed is intended to bring in a digitalized manner of ordering food from canteens in IITK Campus registered into the service using a web interface.

A user who intends to order through this system will have to login using their college email ids and password. If an account is not existing yet, the customer has to register (with details such as Full name, IITK email id, residential address, other contact details) and set a password for her/his account.

Later she/he will be able to choose the canteen from which she/he wants to place an order. Also the menu, with its prices along with its rating will be made available to choose from. A user has the provision to order multiple items out of the menu. The user then chooses if she/he would prefer a delivery or takeaway. With providing the address (in the IITK campus, for orders chosen to be delivered) the user can also choose the mode of payment: payment on delivery or immediate payment which can be through upi/e-wallet/card. The system will confirm the payment in either of the cases. Manually updated for payment on delivery and automated update when payment is done through the payment gateway on the portal. The order is placed through a confirmation. Once placed, the order will not be able to be canceled. An email/sms will be sent by the system providing the customer with a unique id (a code) for her/his order.

Upon receiving the order, one can give a feedback in the form of a rating and also a writeup if the user wishes to, to the system which the canteen admin can view and also reply to it. The rating is updated in the stats and updated at the menu display.

The system on the other end enables the admin (who is supposed to access the portal after an authenticity check) to view all the orders. Once an order is received the admin updates the "processing" and "ready" when the order is ready. Also, the system allows the admin to update the menu at any time by either adding a new item, or removing, or giving it an "unavailable" status.

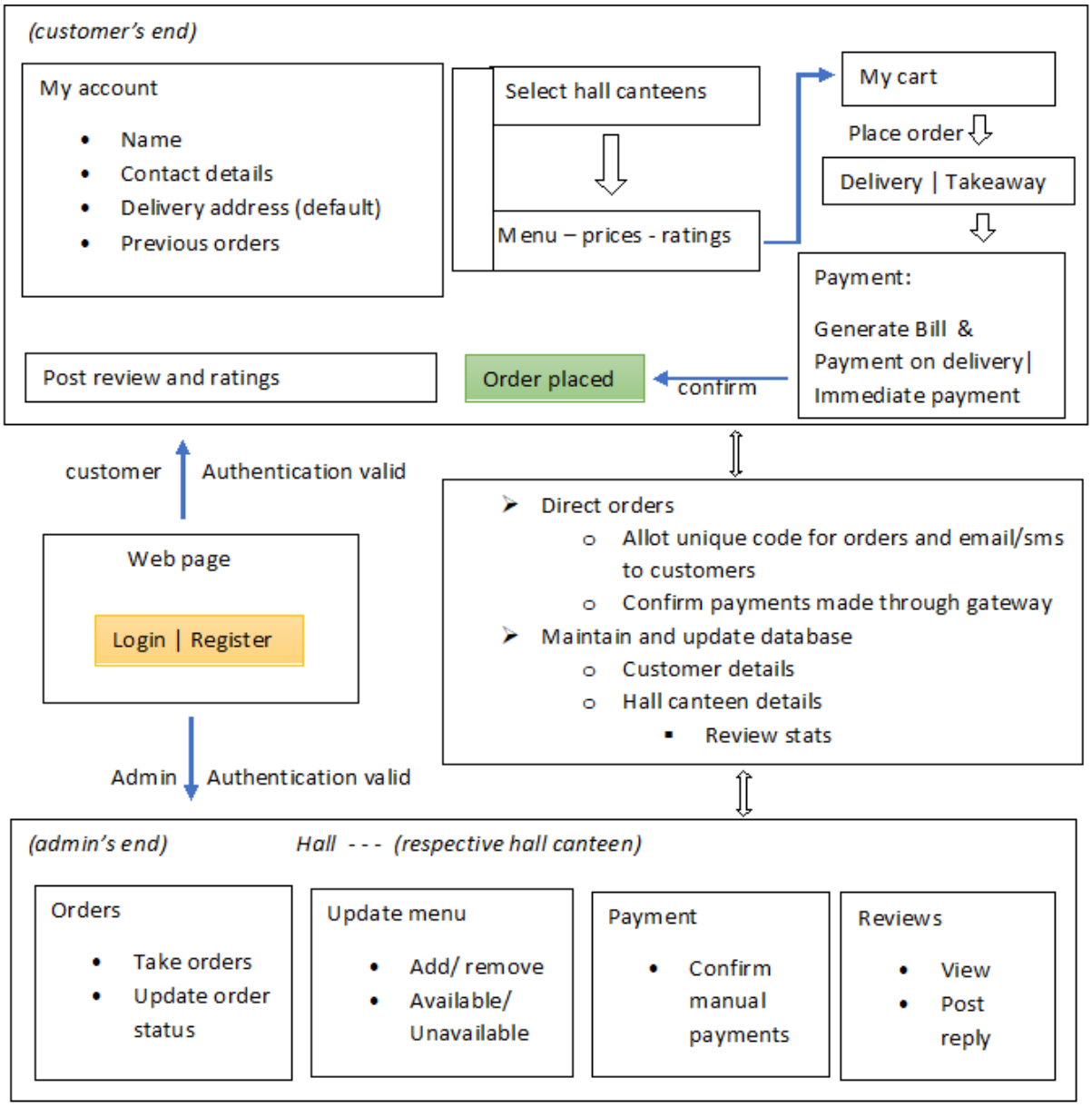

Fig 2.1

2.2 Product Functionality

All of the functions will be performed in the order given below,

- Registration and Login System
- Choice of canteen
- Menu and Ordering System
- Payment System
- Admin's Portal System
- Feedback System

***Details in section 3.2*

2.3 Design and Implementation Constraints

- The online canteen delivery system will work according to the timings of respective hall canteens and the order placing portal will take no order if the canteen is in non-working state.
- Users may access the delivery system from any device that has the required internet browsing capabilities and accessibility. If an order is incomplete and the internet gets disconnected, then it might not be possible to retrieve the lost data of the order.
- Users must have their correct user id and passwords to login to their account and to perform other actions.
- The registration process for the delivery system must happen once for an individual and no one can perform the registration twice.
- The management system is forced to queue incoming requests and therefore it might give a small time lag.

2.4 Assumptions and Dependencies

2.4.1 Assumptions

- COAS is assumed to be used on phones or laptops connected with a stable internet connection.
- The canteen is expected to be open for breakfast, lunch and dinner every working day in which employees are expected to be on site.
- The canteen owner is assumed to be available to update the status of every order placed to aid the customers.

2.4.2 Dependencies

- The operations of the COAS depends on the changes being made in the system to accept requests for meals ordered using the website.
- For smooth orders, the COAS depends on the timely updation of the canteen menu to convey availability of items.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

- The portal website will prompt a login page and a 'register here' option to the user with appropriate redirections. (Fig 3.1, Fig 3.2)
- On successful login, a panel of options helps the user navigate freely between pages. (Fig 3.3)
- The user can then choose to navigate to the canteen of their choice and add items to 'my cart' from the chosen menu.(Fig 3.4)
- On choosing to order, the mode of delivery and payment method options are shown and a suitable choice can be made by them. (Fig 3.5)
- The review page lists all previous orders' rating option, which can be edited. The 'my account' page holds details which can be edited by the user.(Fig 3.6)
- On the other side of the system the admin can manage orders. The admin will also have to login to the website (Fig 3.1) and will be directed to a different interface where s/he can manage orders, edit menu and view reviews.
- The admin will be able to view the details of the order where s/he can update the processing of the food and also the payment status. A filter is also available to view the orders based on mode of payment, payment status, delivery/take-away and order status (in process/ done). (Fig 3.7)
- S/he can edit the menu which can be viewed category wise. A search tab is also available to search for items in the menu.
- The admin receives the reviews and can choose to reply to any of it if willing.

Fig 3.1

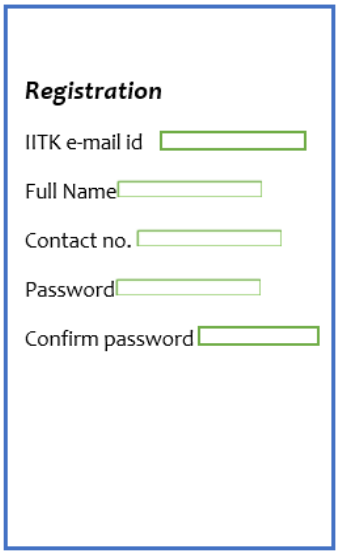

Fig 3.2

Fig 3.3

Fig 3.4

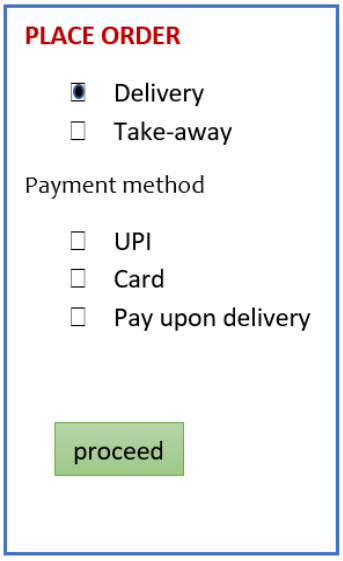

Fig 3.5

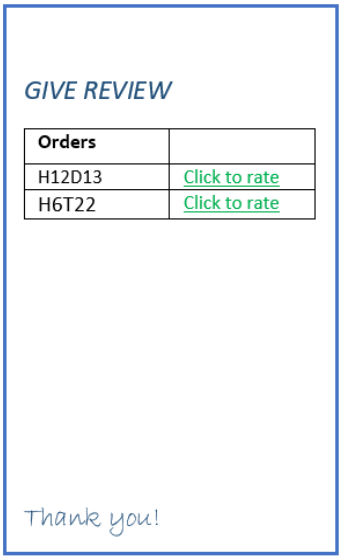

Fig 3.6

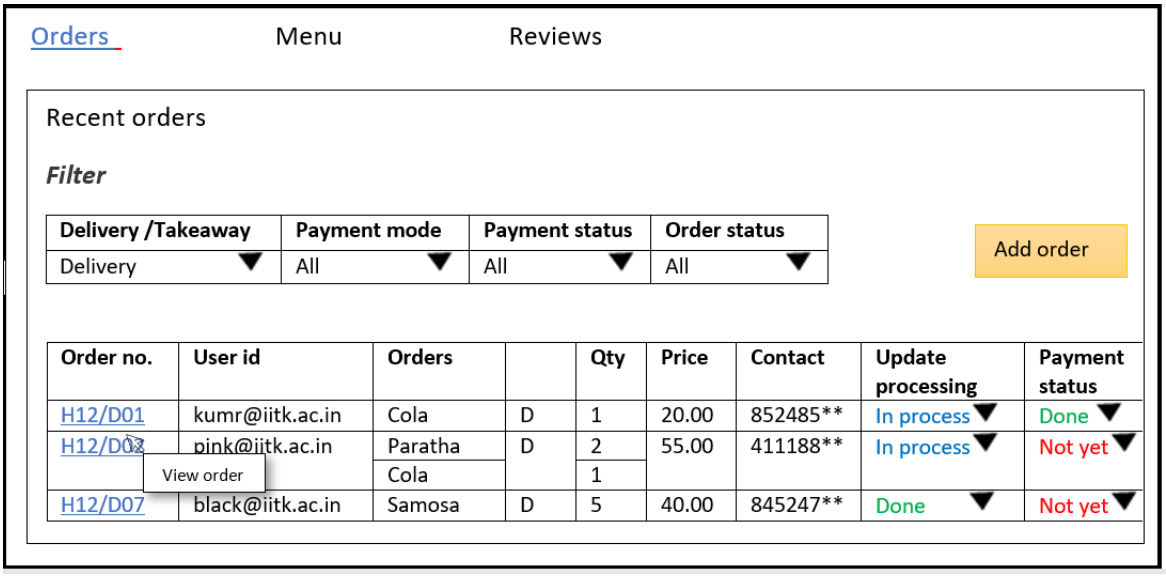

Fig 3.7

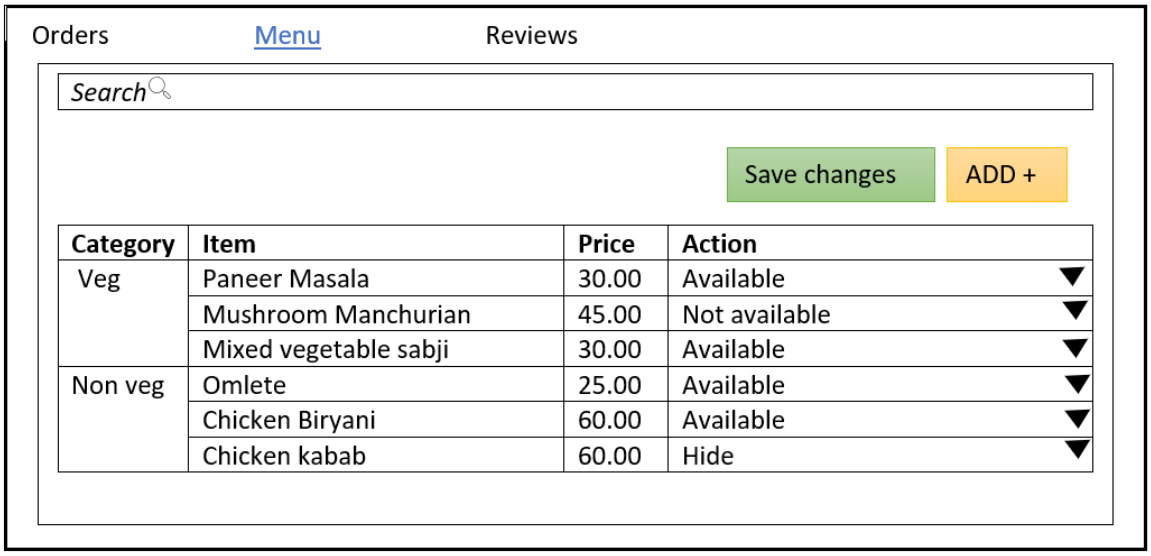

Fig 3.8

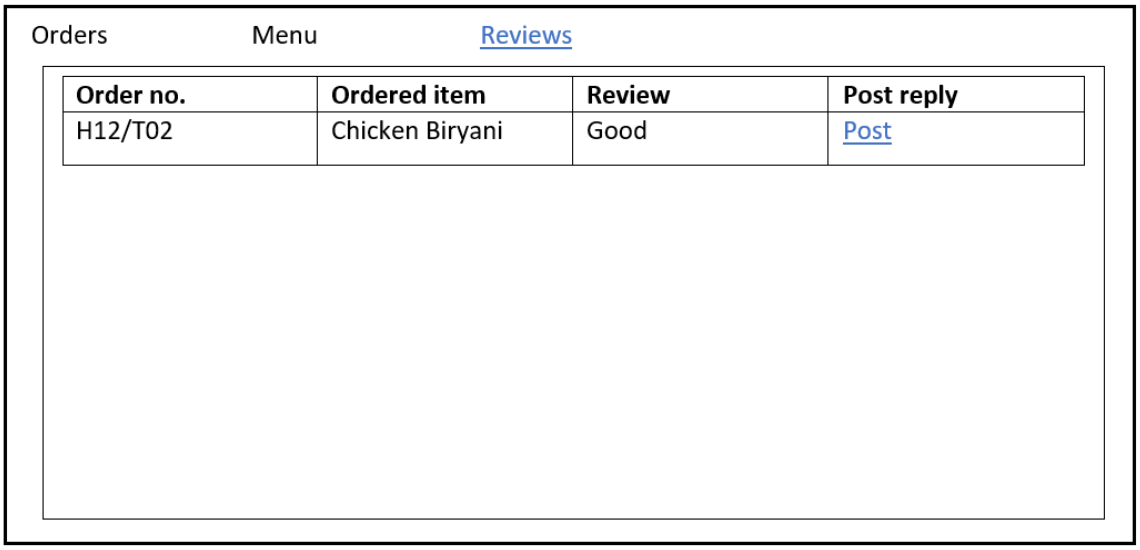

Fig 3.9

***All the figures provided may not convey and cover all the UI requirements. However the document has it mentioned in the relevant sections.*

3.1.2 Hardware Interfaces

- Computer system with internet access at each canteen.
    - Would be handled by the admin to manage orders, menu and reviews.
- Computer in-buit/ external speaker (likely, a piezoelectric speaker) to notify the admin handling the orders when a new order has arrived.
- Any android mobile phone or PC with an internet access to enable the customers to order through COAS.

3.1.3 Software Interfaces

- The COAS will be able to send a confirmation e-mail/sms to the customer after an order is placed with the order's code.
- Various account holders and registered hall canteens will be managed and regulated with a central database.
- Further each hall will only be able to access its own database which will include information regarding the menu and its attributes.
- Local databases to handle orders.

3.2 Functional Requirements

3.2.1. Registration and Login System

- Enable a new user to register to the system.
- Allow registered users to login on the web app.
- Enable a registered user to change his password if forgotten.

3.2.2. Choice of canteen

- Enable users to choose the hall canteen they want to order from or just see the menu.

3.2.3. Menu and Ordering System

- Enable users to go through the menu and add choices to the cart from the selected canteen.
- Enable him/her to edit his choices before proceeding to place the order.

3.2.4. Payment System

- Display the payment bill to the customer.
- Enable the customer to pay for the placed order by cash or UPI.
- Enable the system to notify the admin of the successful transaction.

3.2.5. Admin's Portal System

- Enable the Chef to check all placed orders.
- Enable him/her to display the status of each order either "Preparing order" or "Ready to pick up".

3.2.6. Feedback System

- Enable a registered user to submit a Feedback on the COAS, which contains a detailed explanation to his problem if any.
- Enable the admin to view, open and close the submitted Feedback.
- Enable the admin to post a reply to the Feedback given.

3.3 Use Case Model.

3.3.1 Use Case - UC1

Use Case diagram **UC1**

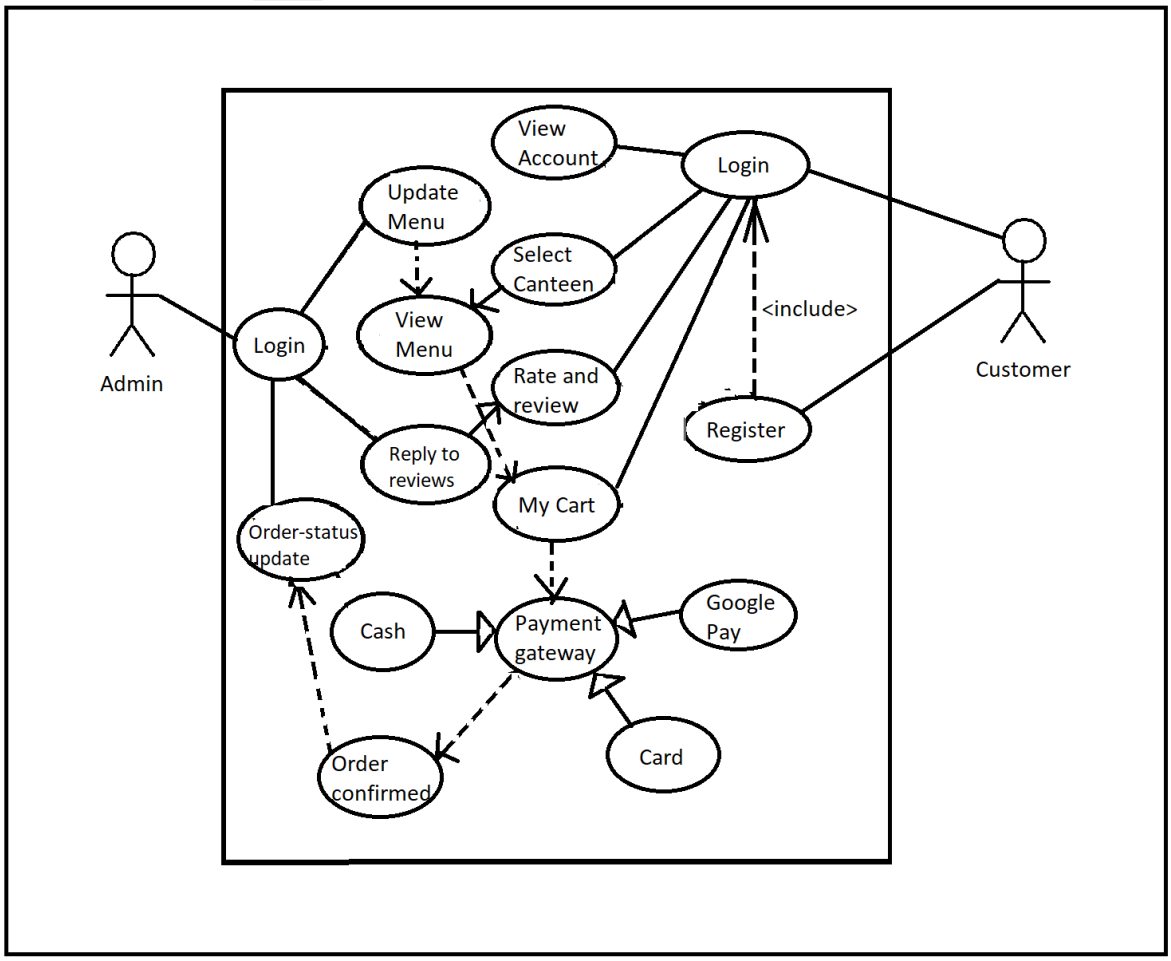

Fig 3.10

Author – Rashmi G R

Purpose - This use case describes the various tasks performed on the website by the customers and the admin when an order is placed remotely online.

Requirements Traceability – Traced in the lines of user interface requirements and functional requirements.

Priority - This use case is given high priority as the primary order method in the COAS will be online.

Preconditions - The admin and the customer are required to have a device with a good internet connection. The admin should stay active on the portal to make note of incoming orders.

Post conditions - The order status updation is ensured by the admin and the order is then either delivered to or picked up by the customer.

Actors – Admin of the canteen, customers

Exceptions -

- The payment gateway might fail to succeed.
- A customer might place an order for an item unavailable if the admin doesn't update the menu frequently.

Includes - UC1 is a stand-alone use case diagram.

3.3.2 Use Case - UC2

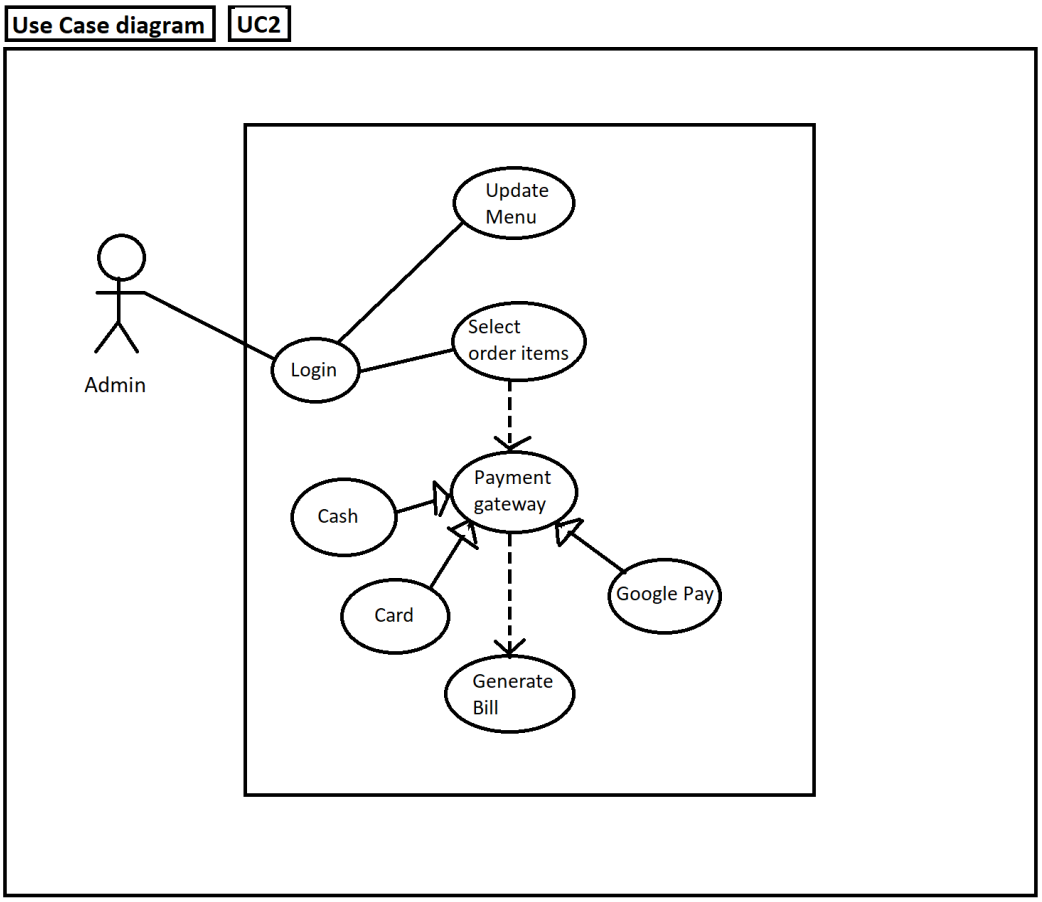

Figure 3.11

Author – Rashmi G R

Purpose - This use case describes the various tasks performed on the website by the admin when an order is placed on-site in the canteen.

Requirements Traceability – Traced in the lines of user interface requirements and functional requirements.

Priority - This test case is given a moderately high priority. To facilitate orders given directly at the canteen, it is important that this test case succeeds.

Preconditions - The admin is required to have a device with a good internet connection.

Post conditions - The order status updation is ensured by the admin and the order is then served to the customer through the code generated.

Actors – Admin of the canteen.

Exceptions -

- The payment gateway might fail to succeed.
- An order might not be placed due to connectivity issues

Includes - UC2 is a stand-alone test case.

4 Other Non-functional Requirements

4.1 Performance Requirements

- The system shall accommodate 400 users (nearly half the strength of a hall) during the peak usage time window of 5:00 pm to 7:00 pm local time, with an estimated session duration of 10 min.
- The customer's order should take no more than 10 seconds to reflect on the client interface for confirmation.
- The confirmation code should reach the customer within 10 seconds of order confirmation.
- All the pages generated by the system shall be fully downloaded in not more than 10 seconds over a 40KBps modem connection.
- The system should not take more than 10 seconds to load the menu of the selected canteen.
- The payment gateway should process the payment in not more than 5 minutes and redirect back to the portal in about 5 seconds.

4.2 Safety and Security Requirements

4.2.1. A proper and secure login system should be maintained for the customers so that an unauthorised person cannot access the account.

4.2.2. The user password should contain at least 8 characters which should comprise of at least one capital letter, one small letter, a digit and a symbol from "!@#$%^&*_".

4.2.3. The customer should always confirm the order by confirming on the popup window to confirm an order so that no false order is generated by mistake.

4.4.4. The person working on the software on the client side should have proper login credentials as mentioned in safety requirement 4.4.2. because he is solely responsible for all the payment and money related matters done by his or her account.

4.4.5. Clients should always confirm the payment method (Instant payment or Pay later) on the popup window which is generated when the client selects the payment option. This is to check that the money is not added in the monthly bill even after instant payment or the customer doesn't get the product for free.

4.3 Software Quality Attributes

4.3.1. Availability:- The canteen order automation system shall be available to users on the corporate intranet 98% of the time in the working time of the canteen. We will ensure it by measurements obtained from 100 hours of usage during testing.

4.3.2. Robustness:- If the connection between the user and system is broken prior to an order being confirmed, the canteen management system shall enable the user to recover the incomplete order.

4.3.3. Reliability:- The canteen order automation system shall be reliable to users for giving the right result on search for more than 98% of the time. Measurement will be obtained from 500 searches during testing.

4.3.4. Extendibility:- The Canteen order automation system shall be easy to extend. The code should be written in a way that it favors implementations of new functions.

4.3.5. Portability:- The Canteen order automation system shall be portable to users because it will be available on the corporate intranet.

Appendix A – Data Dictionary

Term	Description
Admin	Person as the backend user of the proposed software in the current SRS; basically who receives the orders, updates menu and receives reviews about the canteen food.
Customer	Person who acts as the front end user of the proposed software in the current SRS; orders for food from the web portal.
Client	Here, both the admin and the customer.
Delivery	Used to tell when a customer orders through COAS and wishes her/his meal to be delivered to her/his residence.
Rate/ing	Rate only based on the quality of food.
Reviews	Include reviews made on the quality of food and also the canteen management.
Takeaway	Used to tell when a customer orders through COAS and wishes to pick up her/his order from the canteen in person.

Appendix B - Group Log

Date	Duration	Meeting topic	Outcome(s)
14/01/2022	60 minutes	Discussion on outlines and basic functionalities of COAS	Initiation to ideate the features of the system that has to be developed.
24/01/2022	30 minutes	Discussion with the TA	Brief idea about requirements
24/01/2022	15 minutes	Outlined workflow to act upon the SRS	-
25/01/2022	60 minutes	Details about functional and nonfunctional requirements	Clear view of the system in work.
27/01/2022	10 minutes	Taking up responsibility for segments of the SRS.	Work distribution ensured.
28/01/2022	45 minutes	Sharing the progress on SRS.	More suggestions included and ambiguous assumptions cleared.
29/01/2022	15 minutes	Sharing the progress on SRS.	-
30/01/2022	60 minutes	Compiling up each member’s work	SRS completed (95%)
01/02/2022	15 minutes	Trivial edits in SRS.	SRS completed (100%)