Mess Management System

UCS503 Software Engineering Project Report

Mid-Semester Evaluation

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SOFTWARE ENGINEERING

UCS503

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

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TIET, Patiala

September 2022

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2. Planning Phase

2.1 Project Write-up

Overview:

The Mess Feedback System is a website that enables the user to give and receive feedback on various dishes. It eliminates the hassle of manual feedback of food dishes that is prevalent across whole nation. The project supports two types of users namely, students and mess in charge. Apart from feedback and rating the provision of changing the dishes and displaying menu is also given to the user. The user can create an account on the app. Login and logout provision for multiple user support on same device are available.

Project Requirements:

Functional Requirements:

- Login: Access the website by logging in your account with email and password.
- View menu: Students can view the menu for the current week.
- Give feedback: Students can give feedback about the food items.
- Upload menu: Mess in charge can upload the menu for the week.
- View feedback: Mess in charge can view the feedback given by the student.
- Upload dishes: Mess in charge can upload the dishes in case of replacement for any of the current dishes.
- Vote for dishes: Students can vote for the dishes uploaded by the mess in charge in case of replacement of dishes.

Non Functional Requirements:

• Database Management: For storing user credentials and their feedbacks as well as the votes given by the students.

• Verification of Login Details: Account access only given after verification of details.

• The website must be compatible for all devices.

• The contact number added by the user should be a valid 10 digit mobile number.

• Email id entered by user should be unique and should be a valid email id.

• The password entered by the user should be encrypted and then stored in the database.

• User information in the database is private and should be strictly visible to the mess in charge only.

2.2 Feasibility Report

A feasibility study, as the name suggests, is designed to reveal whether a project/plan is feasible. It is an assessment of the practicality of a proposed project/plan. A feasibility study is part of the initial design stage of any project/plan. It is conducted in order to objectively uncover the strengths and weaknesses of a proposed project or an existing business. The key aspects taken in consideration while performing the feasibility analysis for any random project are:

- Technical Feasibility
- Economic Feasibility
- Operational Feasibility
- Schedule Feasibility
- Cultural Behaviour
- Legal

So moving on similar grounds, the feasibility of our project has been analyzed and evaluated below, in detail.

i. TECHNICAL FEASIBILITY

Mess Feedback System is made from several programming languages like HTML, CSS, JavaScript, NodeJS, MongoDB. Express is also used as a library for NodeJS. The database is managed through MongoDB. Meanwhile the front end of the project is mainly through ExpressJS. Also, Bootstrap framework has been used to make the website responsive.
Keeping that in account, we believe that it is clear as a crystal that the project Mess Management System, is technically feasible.

ii. ECONOMIC FEASIBILITY

There is no hardware cost for this project. The softwares used in this project are OpenProj, open sources from the internet to make ER diagrams and Use case diagrams. OpenProj is a paid source, which is provided by our college, Thapar University.

iii. OPERATIONAL FEASIBILITY

Mess Management System is a very user friendly project and doesn't require much training or wouldn't require to acquire any new skill set. The GUI is very user friendly and secure. It reduces the human effort of taking feedbacks from the students and makes it easier for students to login into the web portal and submit their feedbacks. Thus the project is operationally feasible.

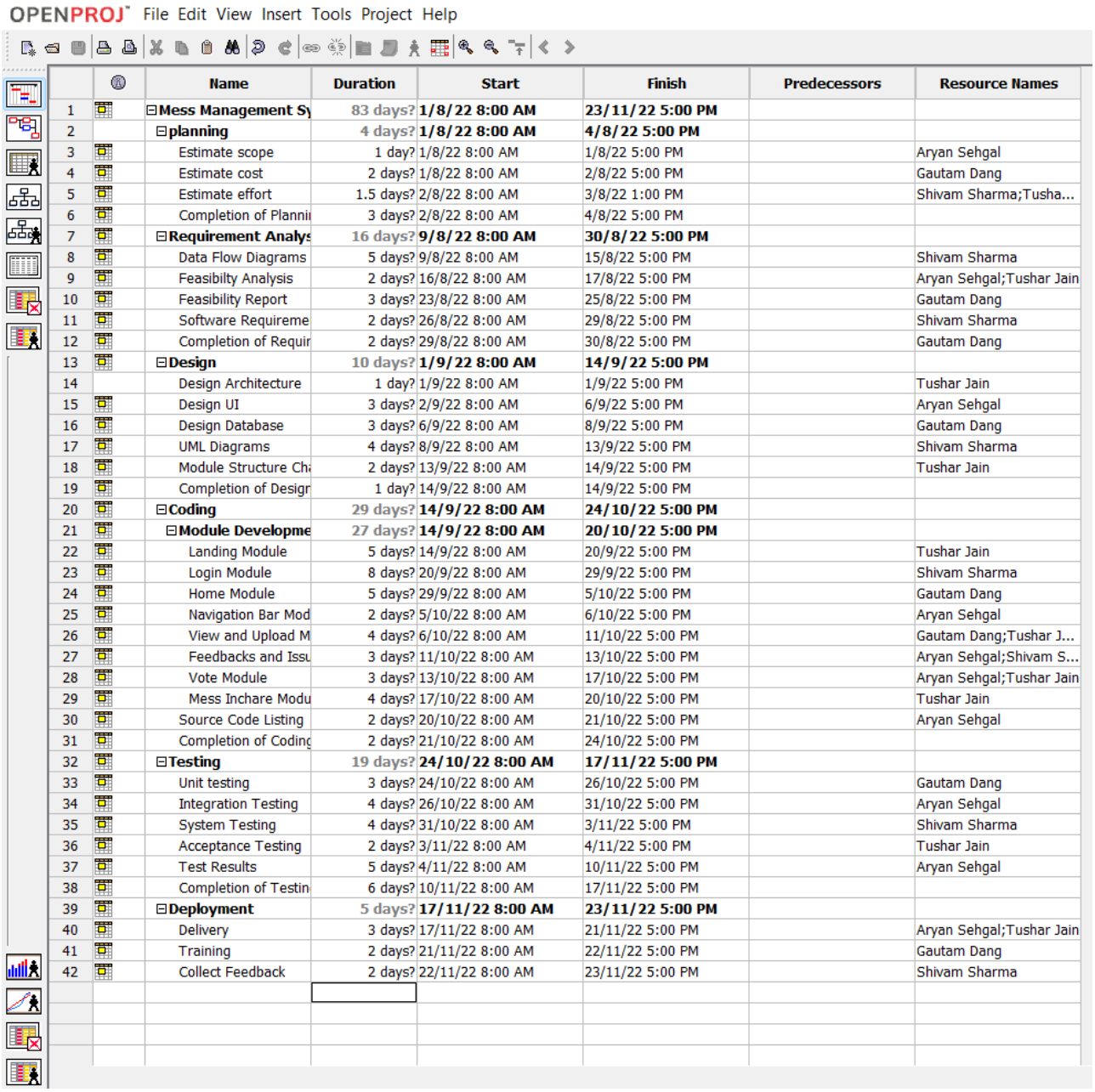
v. **CULTURAL BEHAVIOUR**

The project is easy to comprehend and doesn't require any training to use it. Despite this, there is a functionality of support. Any user can call on the support and ask their queries regarding the web portal.

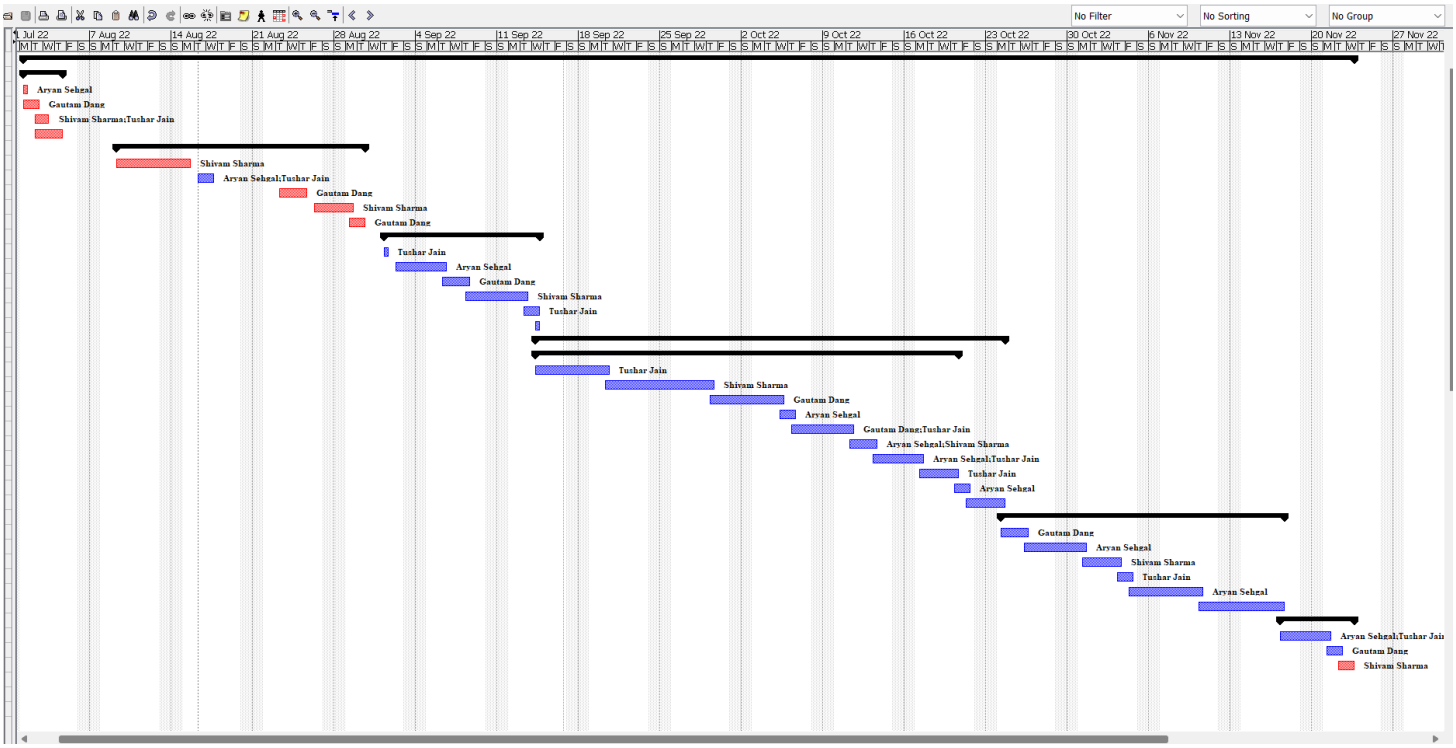
vi. **LEGAL**

The project, Mess Management System is completely made by our team, from scratch. There is no use of any copyrighted/pirated material. It is completely legal and fully functional.

2.3 Gantt Chart

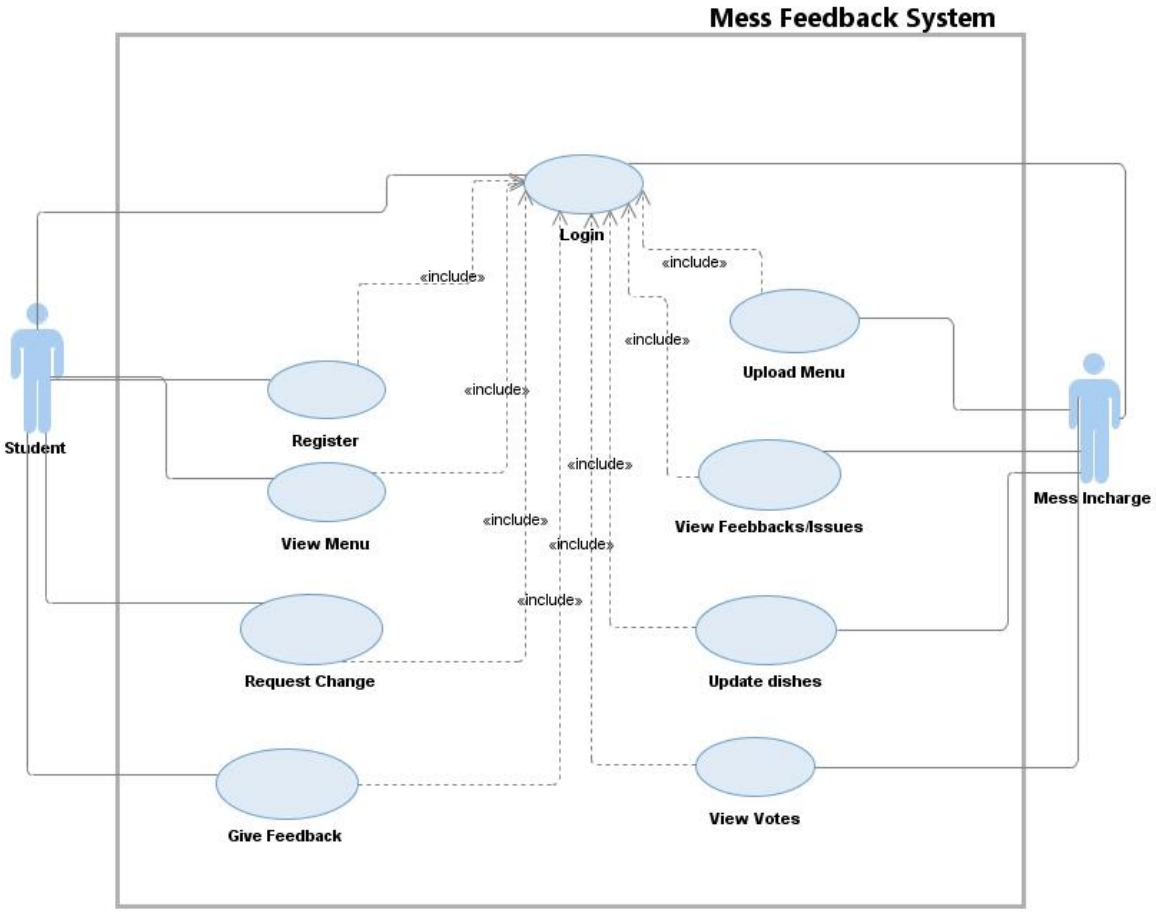


	Name	Duration	Start	Finish	Predecessors	Resource Names
1	**Mess Management Sy**	83 days?	**1/8/22 8:00 AM**	**23/11/22 5:00 PM**		
2	**planning**	4 days?	**1/8/22 8:00 AM**	**4/8/22 5:00 PM**		
3	Estimate scope	1 day?	1/8/22 8:00 AM	1/8/22 5:00 PM		Aryan Sehgal
4	Estimate cost	2 days?	1/8/22 8:00 AM	2/8/22 5:00 PM		Gautam Dang
5	Estimate effort	1.5 days?	2/8/22 8:00 AM	3/8/22 1:00 PM		Shivam Sharma;Tusha...
6	Completion of Planni	3 days?	2/8/22 8:00 AM	4/8/22 5:00 PM		
7	**Requirement Analys**	16 days?	**9/8/22 8:00 AM**	**30/8/22 5:00 PM**		
8	Data Flow Diagrams	5 days?	9/8/22 8:00 AM	15/8/22 5:00 PM		Shivam Sharma
9	Feasibilty Analysis	2 days?	16/8/22 8:00 AM	17/8/22 5:00 PM		Aryan Sehgal;Tushar Jain
10	Feasibility Report	3 days?	23/8/22 8:00 AM	25/8/22 5:00 PM		Gautam Dang
11	Software Requireme	2 days?	26/8/22 8:00 AM	29/8/22 5:00 PM		Shivam Sharma
12	Completion of Requir	2 days?	29/8/22 8:00 AM	30/8/22 5:00 PM		Gautam Dang
13	**Design**	10 days?	**1/9/22 8:00 AM**	**14/9/22 5:00 PM**		
14	Design Architecture	1 day?	1/9/22 8:00 AM	1/9/22 5:00 PM		Tushar Jain
15	Design UI	3 days?	2/9/22 8:00 AM	6/9/22 5:00 PM		Aryan Sehgal
16	Design Database	3 days?	6/9/22 8:00 AM	8/9/22 5:00 PM		Gautam Dang
17	UML Diagrams	4 days?	8/9/22 8:00 AM	13/9/22 5:00 PM		Shivam Sharma
18	Module Structure Cha	2 days?	13/9/22 8:00 AM	14/9/22 5:00 PM		Tushar Jain
19	Completion of Design	1 day?	14/9/22 8:00 AM	14/9/22 5:00 PM		
20	**Coding**	29 days?	**14/9/22 8:00 AM**	**24/10/22 5:00 PM**		
21	**Module Developme**	27 days?	**14/9/22 8:00 AM**	**20/10/22 5:00 PM**		
22	Landing Module	5 days?	14/9/22 8:00 AM	20/9/22 5:00 PM		Tushar Jain
23	Login Module	8 days?	20/9/22 8:00 AM	29/9/22 5:00 PM		Shivam Sharma
24	Home Module	5 days?	29/9/22 8:00 AM	5/10/22 5:00 PM		Gautam Dang
25	Navigation Bar Mod	2 days?	5/10/22 8:00 AM	6/10/22 5:00 PM		Aryan Sehgal
26	View and Upload M	4 days?	6/10/22 8:00 AM	11/10/22 5:00 PM		Gautam Dang;Tushar J...
27	Feedbacks and Issu	3 days?	11/10/22 8:00 AM	13/10/22 5:00 PM		Aryan Sehgal;Shivam S...
28	Vote Module	3 days?	13/10/22 8:00 AM	17/10/22 5:00 PM		Aryan Sehgal;Tushar Jain
29	Mess Inchare Modu	4 days?	17/10/22 8:00 AM	20/10/22 5:00 PM		Tushar Jain
30	Source Code Listing	2 days?	20/10/22 8:00 AM	21/10/22 5:00 PM		Aryan Sehgal
31	Completion of Coding	2 days?	21/10/22 8:00 AM	24/10/22 5:00 PM		
32	**Testing**	19 days?	**24/10/22 8:00 AM**	**17/11/22 5:00 PM**		
33	Unit testing	3 days?	24/10/22 8:00 AM	26/10/22 5:00 PM		Gautam Dang
34	Integration Testing	4 days?	26/10/22 8:00 AM	31/10/22 5:00 PM		Aryan Sehgal
35	System Testing	4 days?	31/10/22 8:00 AM	3/11/22 5:00 PM		Shivam Sharma
36	Acceptance Testing	2 days?	3/11/22 8:00 AM	4/11/22 5:00 PM		Tushar Jain
37	Test Results	5 days?	4/11/22 8:00 AM	10/11/22 5:00 PM		Aryan Sehgal
38	Completion of Testin	6 days?	10/11/22 8:00 AM	17/11/22 5:00 PM		
39	**Deployment**	5 days?	**17/11/22 8:00 AM**	**23/11/22 5:00 PM**		
40	Delivery	3 days?	17/11/22 8:00 AM	21/11/22 5:00 PM		Aryan Sehgal;Tushar Jain
41	Training	2 days?	21/11/22 8:00 AM	22/11/22 5:00 PM		Gautam Dang
42	Collect Feedback	2 days?	22/11/22 8:00 AM	23/11/22 5:00 PM		Shivam Sharma



(3) Analysis Phase

3.1 Use Case Diagram



3.2 Use Case Scenario

Use Case Title	View Menu
Abbreviated Title	View Menu
Use Case ID	1
Actors	Student
Description	This enables student to view the weekly menu uploaded on the website.
Pre Conditions	Student must be logged in.
Task Sequence	Image of the menu will be shown on the screen.
Post Conditions	Student can view the menu and go for any other functionality.
Modification History	15-08-2022
Author	Aryan Sehgal

Use Case Title	Give Feedback
Abbreviated Title	Give Feedback
Use Case ID	2
Actors	Student
Description	This enables student to give feedback for a dish on a particular day.
Pre Conditions	Student must be logged in.
Task Sequence	1. Student can rate the food out of 5 stars. 2. Select type of meal(breakfast, lunch, dinner). 3. Student can write a brief feedback about the food.
Post Conditions	The rating and feedback will be stored in the database and the user can perform other functionalities.
Modification History	18-08-2022
Author	Aryan Sehgal

Use Case Title	Submit Issues
Abbreviated Title	Submit Issues
Use Case ID	3
Actors	Student
Description	This enables student to submit mess related issues other than feedback of food.
Pre Conditions	Student must be logged in.
Task Sequence	1. Student can write brief description about their issues. 2. Click on Submit button.
Post Conditions	The issues will be stored in the database and the user can perform other functionalities.
Modification History	19-08-2022
Author	Gautam Dang

Use Case Title	Vote
Abbreviated Title	Vote
Use Case ID	4
Actors	Student
Description	This enables student to vote for a dish which are included in the dishes catalogue provided by the mess in incharge
Pre Conditions	Student must be logged in.
Task Sequence	1. Student can view the dishes to vote for. 2. Student will select the dish. 3. Click on submit button.
Post Conditions	Number of Votes for that particular dishes will be incremented by one and will be stored in the database.
Modification History	20-08-2022
Author	Gautam Dang

Use Case Title	Upload Menu
Abbreviated Title	Upload Menu
Use Case ID	5
Actors	Mess in charge
Description	This enables mess in charge to upload the weekly menu on the website.
Pre Conditions	Mess in charge must be logged in.
Task Sequence	1. Mess in charge needs to choose validity. 2. Mess in charge needs to input the link for the image of menu. 3. Click on submit button.
Post Conditions	Menu will be updated on the website.
Modification History	22-08-2022
Author	Tushar Jain

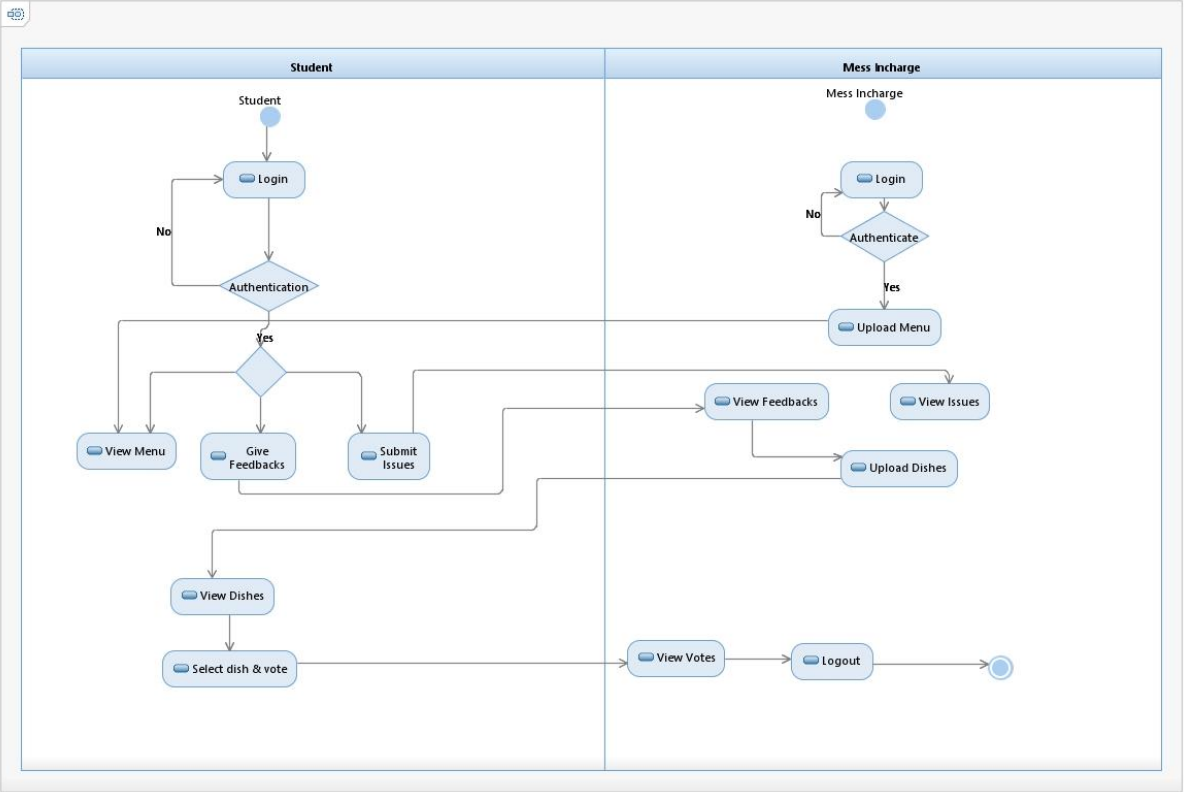
Use Case Title	Update Options
Abbreviated Title	Update Options
Use Case ID	6
Actors	Mess in charge
Description	This enables mess in charge to upload options for dishes that will be visible to students on the website.
Pre Conditions	Mess in charge must be logged in.
Task Sequence	1. Mess in charge needs to click on update options button on the website. 2. Upload various dishes on the website. 3. Click on submit button.
Post Conditions	Options will be updated on the website.
Modification History	23-08-2022
Author	Tushar Jain

Use Case Title	View feedback
Abbreviated Title	View feedback
Use Case ID	7
Actors	Mess in charge
Description	This enables mess incharge to view feedback given by all students on various dishes in the menu.
Pre Conditions	Mess in charge must be logged in.
Task Sequence	1. Click on the view feedback button on the screen. 2. It will display the feedback given by students for each dish.
Post Conditions	Feedback will be shown on the website.
Modification History	25-08-2022
Author	Tushar Jain

Use Case Title	View votes
Abbreviated Title	View votes
Use Case ID	8
Actors	Mess in charge
Description	This enables mess incharge to view number of votes given by all students on various dishes in the menu.
Pre Conditions	Mess in charge must be logged in.
Task Sequence	1. Click on the view votes button on the screen. 2. It will display the number of votes given by students for each dish.
Post Conditions	Number of votes will be shown on the website.
Modification History	25-08-2022
Author	Shivam Sharma

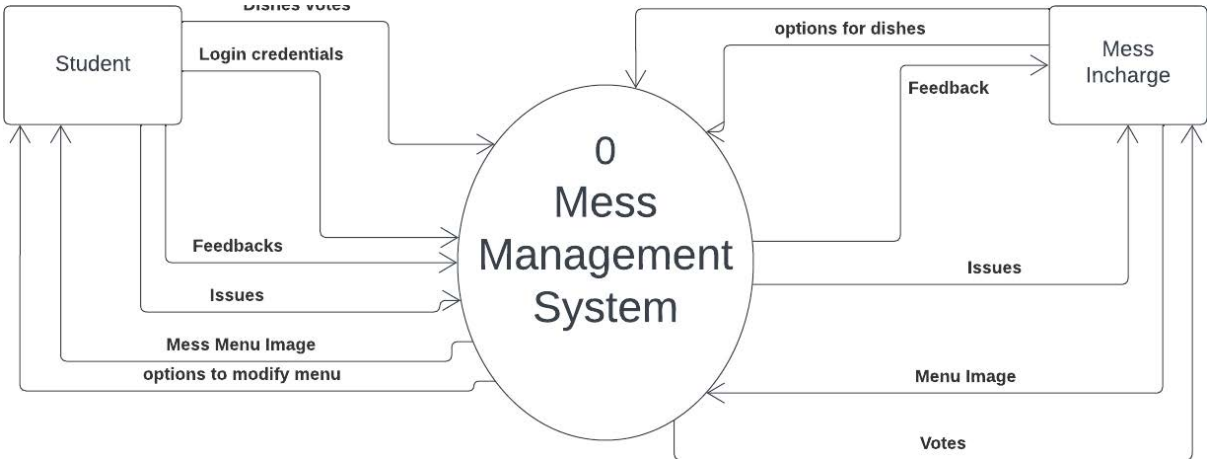
Use Case Title	View issues
Abbreviated Title	View issues
Use Case ID	9
Actors	Mess in charge
Description	This enables mess incharge to view issues given by all students on the website.
Pre Conditions	Mess in charge must be logged in.
Task Sequence	1. Click on the view issues button on the screen. 2. It will display the issues given by students on the website.
Post Conditions	Issues given by students will be shown on the website.
Modification History	26-08-2022
Author	Shivam Sharma

3.3 Swimlane Diagram

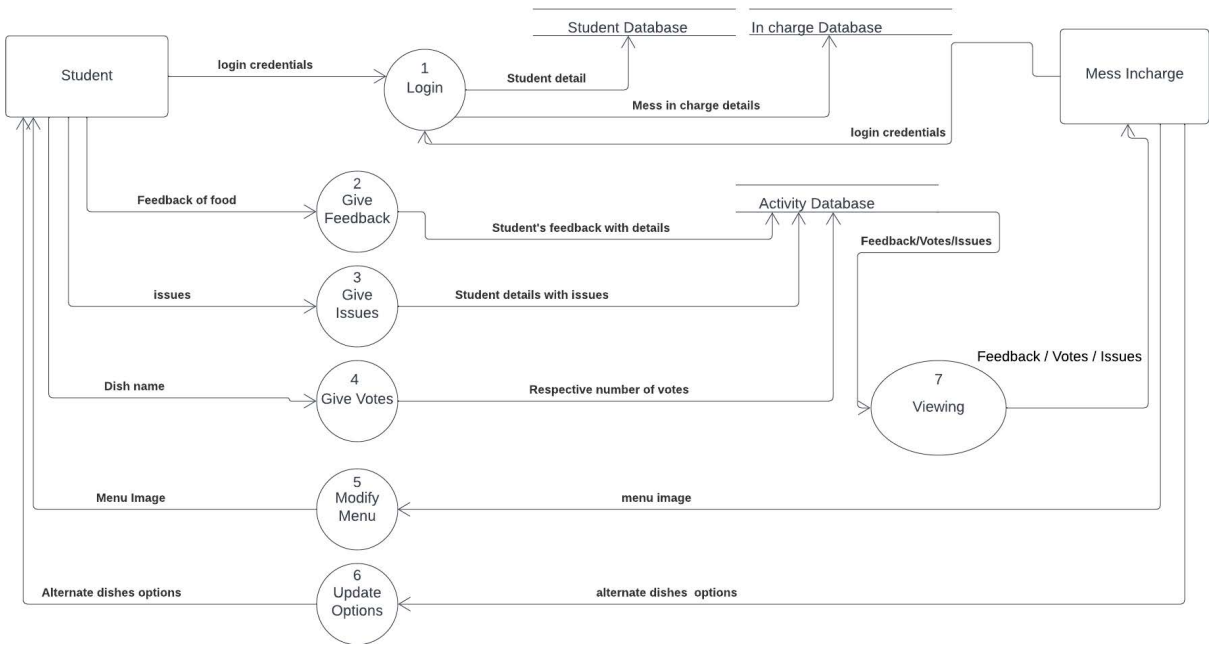


3.4 Data Flow Diagrams –Level 0, Level 1 , Level 2

Level 0



Level 1



3.5 Software Requirement Specification (SRS) in IEEE Format

Mess Management System

Software Requirements Specification Document

Version 1.0

Mess Management System

Submitted to: Dr. Harkiran Kaur

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1. Introduction

1.1 Purpose of this Document

The purpose of this SRS document is to describe what the software will do and how it will be expected to perform. It also describes the functionality the product needs to fulfill all stakeholders (users) needs.

1.2 Scope of the Development Project

The goal is to design software for a Mess Management System. In this system, there are two different portals, one for students and other for mess in charge. Students can login with their respective ids and then give feedback for the menu of current day and will be able to provide a rating based on the quality of food. Also, they can apply a request for change of a particular dish/item in menu. On the other hand, the mess in charge can login and view the feedback as well as ratings provided by the students and also view the requests for change of menu items. The mess in charge can also upload the final menu for the week after considering the opinions of students.

The software must be able to perform the following operations:

1. **Login:** It must be able to authenticate the students and the mess in charge. Students belonging to a particular hostel can login and the mess in charge of that hostel.
2. **Check/Update Menu:** Students would be able to see the menu for the current week as uploaded by the mess in charge.
3. **Feedback:** Students can provide ratings on a star scale out of 5 for the current week's dishes. They can rate every meal i.e. breakfast, lunch, dinner. Also, they can describe their feedback explicitly. This feedback would be stored in the database along with their respective ratings and credentials.
4. **Request a change:** Students can request for a change in a particular dish of the current day menu. They will be given a few options to select from which would be uploaded by the mess in charge.

Initially the aim of the project is to implement these functionalities for the single hostel of our university(Thapar University) as part of the **Pilot Phase**. Once the Pilot Phase is successful then the plan is to implement it in other hostels across the institute and eventually this project can be extended to all the hostels across all the universities in India.

The scope of this system is not just limited to the university campus only as the same mechanism can be reused in other campuses as well. In current scenario there is no online platform to view the hostel menu or provide feedback. This will also encourage digital automation of feedback across all messes.

1.3 Definitions, abbreviations and acronyms

Definitions

Table 1 gives explanation of the most commonly used terms in this SRS document.

Table 1: Definitions for most commonly used terms

S. No.	Term	Definition
1	Hash	Refers to technologies that encrypts the password in SHA256 format.
2	Salt	Salts create unique passwords even in the instance of two users choosing the same passwords.
3	Local host	Localhost is a hostname that refers to the local machine currently making the request.

Abbreviations

Table 2 gives the full form of most commonly used mnemonics in this SRS document.

Table 2: Full form for most commonly used mnemonics

S.No.	Mnemonic	Full Form
1	SHA256	Secure Hash Algorithm 256-bit
2	BS	BootStrap

1.4 References

References

[1] Anon, "DevDocs Express," 27 August 2022. [Online]. Available: https://devdocs.io/express/.

[2] Anon, "getbootstrap," 15 August 2022. [Online]. Available: https://getbootstrap.com/docs/5.0/getting-started/introduction/.

[3] anon, "passport local mongoose," 29 August 2022. [Online]. Available: https://www.npmjs.com/package/passport-local-mongoose.

[4] "how-heroku-works," 2 September 2022. [Online]. Available: https://devcenter.heroku.com/articles/how-heroku-works.

[5] anon, "/docs/manual/crud/," 5 Septempber 2022. [Online]. Available: https://www.mongodb.com/docs/manual/crud/.

1.5 Overview

The remaining sections of this document provide a general description, including characteristics of the users of this project, the product's hardware, and the functional and data requirements of the product. General description of the project is discussed in section 2 of this document. Section 2 gives the functional requirements, data requirements and constraints and assumptions made while designing the multi-utility system. It also gives

the user viewpoint of product use. Section 3 gives the specific requirements of the product. Section 3.0 also discusses the external interface requirements and gives detailed description of functional requirements.

2. Overall Description

2.1 Product Perspective

The product is a website which provides functionalities for both students and mess in charge. Students need to login and then view the menu of their respective hostel. Mess in charge can update the menu on weekly basis based on the feedback provided by the students.

2.2 Product Functions

The product should be able to perform the following operations:

1. It must be able to authenticate the students and the mess in charge. Hashing and salting has been used to highly encrypt the passwords and store in the database.
2. Students would be able to see the menu for the current week as uploaded by the mess in charge. Mess in charge would be able to upload the final menu after consideration of all the requests and feedbacks given by students.
3. Students can provide ratings on a star scale out of 5. Also, they can describe their feedback explicitly. This feedback would be stored in the database along with their respective ratings and credentials.
4. Students can request for a change in a particular dish of the current day menu. They will be given a few options to select from which would be uploaded by the mess in charge.

2.3 User Characteristics

The goal is to design software for a CSC based Multi-Utility System including Access Control and Attendance monitoring for different users. These user types are listed below as follows.

I. Student
II. Mess in charge

As one can see from the list, each user will have different educational background and expertise level in using the system. Our goal is to develop software that should be easy to use for all types of users, including the mess in charge. Thus while designing the software one can assume that each user type has the followingcharacteristics:

- The user should be a student of that respective hostel.
- In order to login into the portal, he/she must be a student of that university.
- The mess in charge should take decision on behalf of the whole mess committee

2.4 General Constraints, Assumptions and Dependencies

The following list presents the constraints, assumptions, dependencies or guidelines that are imposed upon implementation of the Mess Feedback System.

- The E-mail id used by the user should be the respective university email address.
- User can rate the food item on a scale of 1 to 5 only.
- The feedback would be visible only to the mess in charge.
- Mess menu can only be updated by the mess in charge.
- Menu can only be read by the students, they cannot edit the menu.
- Students can select a few options out of the ones displayed on the screen.

2.5 Apportioning of requirements

The Mess Feedback System is to be implemented in the following three phases:

i. **Pilot Phase:** Here the access privileges of the product will be granted to two types of users in the pilot phase, namely student and mess in charge. The testing would be done by 40 students and 5 mess in charges.

ii. **Institute wide deployment:** Following the successful completion of the pilot phase, the plan is to deploy the same across the institute. Students from all hostels would be able to register into the system and enter their respective hostel during the registration.

iii. **Extension of the feedback system:** The scope of the feedback system can be extended and add some functionalities where students from all of the institutes pan India would be implemented in this system.

Here the same functionalities will be implemented in each phase; the only difference will be the number of students and the scale of implementation.

3. Specific Requirements

3.1 External Interface Requirements

The following list presents the external interface requirements:

- The product does not require any graphics usage with just a simple keypad for taking the user input.
- The product does not require usage of sound or animation.
- This Product does not require high bandwidth of internet.

3.2 Detailed Description of Functional Requirements

Table 3 shows a template that would be describing functional requirements for Two types of users: student and Mess in charge.

3.2.1 Functional Requirements for Register/Login Page

Table 4 gives the functional requirements for Register/Login Page.

Table 1: Functional Requirements for Register/Login Page

Purpose	This web page will allow the user(including mess Incharge) to safely login/ register into their accounts to access all the features and facilities.
Inputs	This Web page will ask the user about his/her position (student or Mess incharge), login Email, password.Whereas for registering he/she can submit his/hers Full name , hostel room number, Hostel name, contact number to register as a new user and can enter into their personal dashboard.
Processing	While registering, the passwords will be highly encrypted using hash and salt before storing in the database. Before Login it will match the email and encrypted password to access the home page.
Outputs	After logging in the student and the Mess Incharge will be redirected to the respective home pages with different functionalities.

3.2.2 Functional Requirements for Student Welcome Screen

Table 5 gives the functional requirements for Staff Welcome Screen.

3.2.3 Table 2: Functional Requirements for Student Welcome Screen

Purpose	This screen provides information specific to each student.
Inputs	A student can navigate to different pages by choosing from one of the options given on the navigation bar. These options include view Mess menu, Review Us, Request a change and Logout. .
Processing	The menu responds to selections by displaying the respective page containing the pre-defined text requested information.

Outputs	Output consists of a screen of information specific to the student. For example, upon choosing option 'review us' in the menu displayed on the student welcome screen, a student will be able to give feedback to any desired meal.

3.2.4 Functional Requirements for Student cum Mess Incharge Welcome Screen

Table 6 gives the functional requirements for Mess Incharge Welcome Screen.

Table 3: Functional Requirements for Mess Incharge Welcome Screen

Purpose	This screen provides information specific to The Mess Incharge.
Inputs	The Mess Incharge can navigate to different pages by choosing from one of the options given on the navigation bar. These options include Upload new menu,View Feedbacks, Update Options(every week menu) and Logout.
Processing	The menu responds to selections by displaying a page containing the pre-defined text requested information.
Outputs	Output consists of a screen of information specific to the Mess Incharge. For example, upon choosing option 'Upload new menu' in the menu displayed on the Mess Incharge welcome screen, he/she will be able to update the old menu just by proving the image link to the new menu.

Table 4: Functional Requirements for Student Mess Menu screen

Purpose	This screen provides the picture of current week menu.
Inputs	Menu can be downloaded by clicking on download.
Processing	It shows menu validity period and gives user an option to download the menu.
Outputs	Output consists of a screen of the picture of menu.

Table 5: Functional Requirements for Student review screen

Purpose	This screen is used for taking the feedback as well as issues faced by the students.
Inputs	The screen takes an input in the form of rating from user out of 5 stars along with an option to select the time of meal and a short and brief feedback describing the food. In case of any other issue user can specify it along with their email id and subject.
Processing	The feedback as well as issues are stored in the database along with students' data.
Outputs	The input made by the user gets reflected in the database.

Table 6: Functional Requirements for Student 'Request A change' screen

Purpose	This screen provides user a chance to vote for a particular item out of a list of items provided by the mess in charge in order to replace it with the current menu items.
Inputs	The screen takes an input in the form of a button(vote). User can select the dish and vote for it.
Processing	Number of votes for a particular dish gets incremented every time a user votes for it.
Outputs	After voting, the screen gets rendered again and user can see the change in the number of votes on the screen.

Table 7: Functional Requirements for Mess Incharge 'Upload Menu' screen

Purpose	This screen provides Mess incharge a platform to upload updated menu .
Inputs	This screen takes three inputs from the mess incharge i.e. New Menu image link , Valid 'From' date , Valid 'End' date .
Processing	The link as well as the dates will be stored in the database.
Outputs	After uploading the updated menu , it will get displayed on the student side of the website.

Table 8: Functional Requirements for Mess Incharge 'View Feedbacks' screen

Purpose	This screen shows the mess incharge all the feedbacks and issues faced by the students along with their credentials .
Inputs	This page takes inputs from the Feedbacks table of the database which has student details and their feedbacks stored.
Processing	NIL
Outputs	This screen shows the various feedbacks & issues entered by all students along with their respective names and email id's to the mess incharge.

Table 9: Functional Requirements for Mess Incharge 'Update Options' screen

Purpose	This screen provides mess incharge details about the vote count for the 5 dishes provided by the him . It also gives him the privilege to update the 5 options for the students to choose from for the upcoming menu.
Inputs	The screen takes the names of 5 dishes as input if the mess incharge wants to update the options .
Processing	Number of votes are taken from the database and shown on the screen and whenever mess incharge introduces a new dish , its vote count gets automatically initialized to 0.
Outputs	It displays the number of votes for each food item and also an option to add a new dish.

3.3 Performance Requirements

- The software is designed for the smart card reader-writer terminal and cannot run from a standalone desktop PC.
- The software will support simultaneous user access only if there are multiple terminals.
- Only textual information will be handled by the software. Amount of information to be handled can vary from user to user.
- For normal conditions, 95% of the transactions should be processed in less than5 seconds.

3.4 Logical Database Requirements

Figure 3 shows the E-R diagram for the entire system.

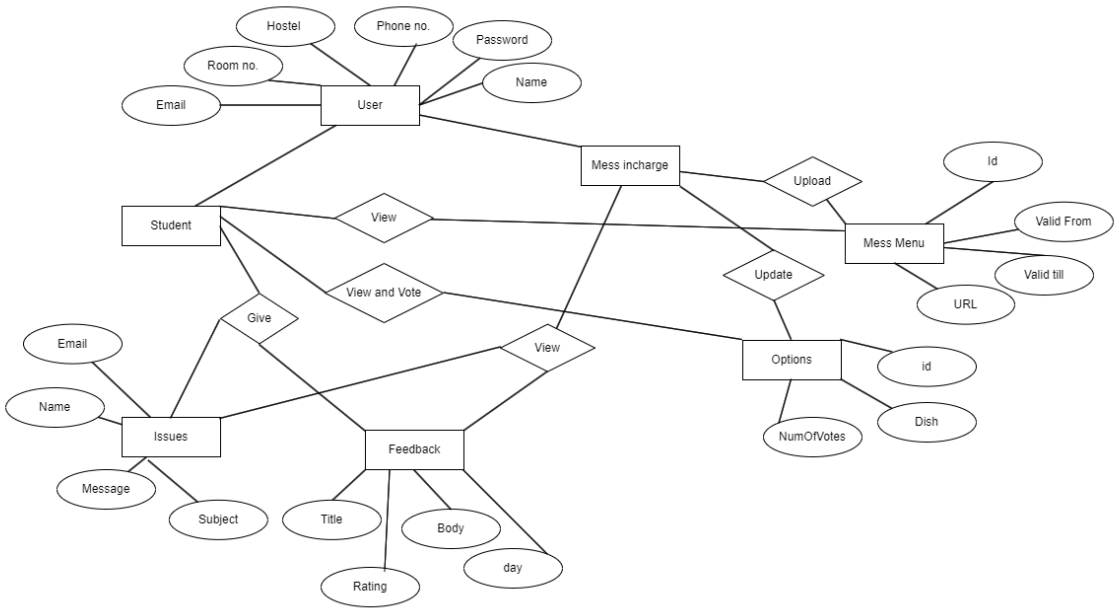


Figure 3: E-R Diagram for the CSC Based Multi-Utility System (including access controland attendance monitoring)

3.5 Quality Attributes

The product is target towards a wide variety of users such as Student, staff, student cum staff, etc. The product must load quickly and work well on a variety of terminals. It must also tolerate wide variety of input possibilities from a user, such as incorrect responses or unforeseen keystrokes.

3.6 Other Requirements

None at this time

4. Change History

102022	Version 1.0 – Initial Release

5. Document Approvers

SRS approved by:

_____

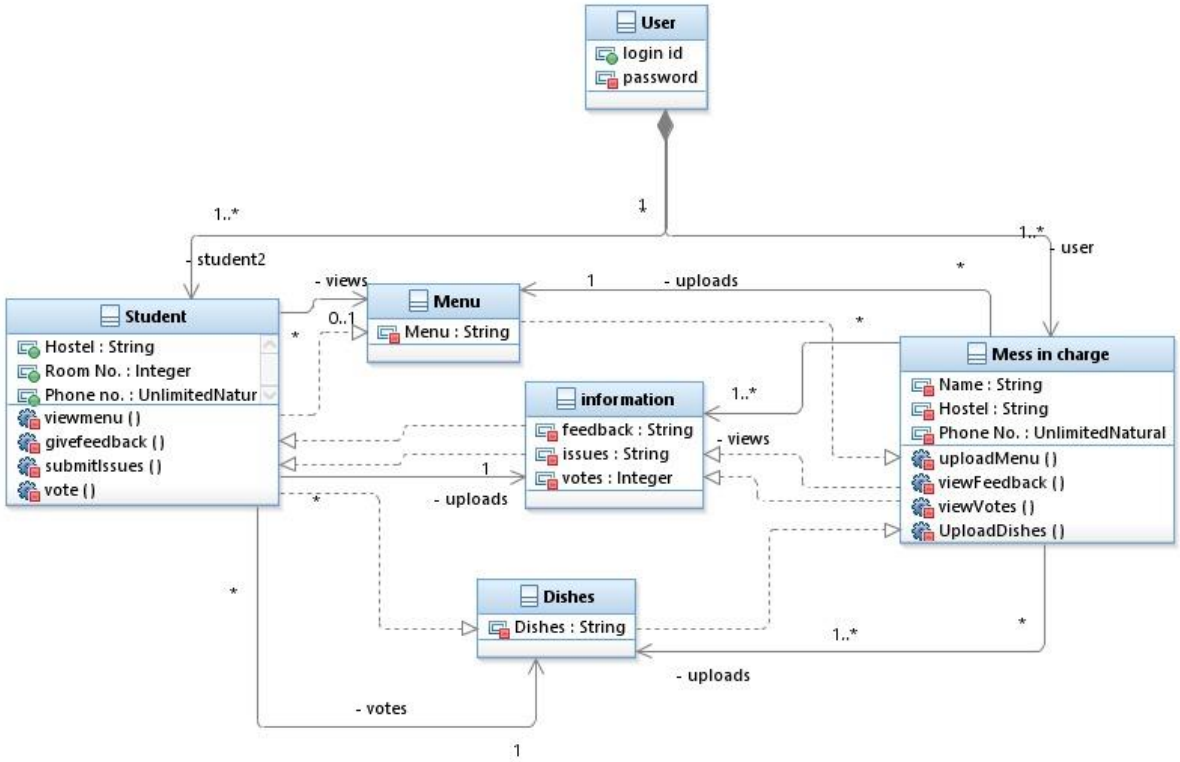
Dr. Harkiran Kaur

Designation:

Date:

(4) Design Phase:

4.1 Class Diagram



4.2 ER Diagram