

A
PROJECT REPORT
ON
MESSWALA
Submitted in partial fulfillment for the award of
Post Graduate Diploma in Advance Computing
(PG-DAC) from
INSTITUTE OF EMERGING TECHNOLOGIES
Authorized Training Centre



Under the Guidance of
Mrs. Savita Vaidya

BY

Mr. Kunal Hole (230945920029)
Mr. Raj Lohar (230945920076)
Mr. Omkar Divate (230945920020)
Mr. Aditya Pawar (230945920069)
Mr. Sakharam Deshpande(230945920082)



CERTIFICATE

This is to certify that the project report entitled **MessWala** is a bonfire work carried out by **Mr. Kunal Hole, Mr. Raj Lohar, Mr. Omkar Divate, Mr. Aditya Pawar, Mr. Sakharam Deshpande** and submitted in partial fulfilment of the requirement for the C-DAC ACTS, DAC course in Institute of Emerging Technology in the batch of September 2023.

Course Co-Ordinator
Mr. Manoj Deshmukh

External Examiner
Mrs. Sampada Tarare

ACKNOWLEDGEMENT

This project **MessWala** was a great learning experience for us and we are submitting this work to Advanced Computing Training School (CDAC).

We are very glad to mention **Mrs. Savita Vaidya** for her valuable guidance to work on this project. Her guidance and support helped us to overcome various obstacles and intricacies during project work.

Our most heart full thanks go to **Mr. Sangram Patil (Director, IET)** who gave all the required support and kind coordination to provide all the necessities like required hardware, internet facility and extra lab hours to complete the project and throughout the course up to the last day here in C-DAC ACTS, Pune.

Name	PRN. No	Sign of student
Kunal Hole	(230945920029)	
Raj Lohar	(230945920076)	
Omkar Divate	(230945920020)	
Aditya Pawar	(230945920069)	
Sakharam Deshpande	(230945920082)	

Abstract

MessWala is a web-based platform facilitating mess owners' business growth and helping users, especially students, find nearby options effortlessly. Offering dual logins for Users and Mess Owners, the system allows users to explore mess options by location, and view detailed menus. Mess owners benefit from scaling features, including menu management and user preference analysis. The system guarantees 24/7 availability, 99.999% uptime, and maintains data persistence using commercial database software. It employs a portable UI (ReactJS, TailwindCSS), deployable on various servers and OS or cloud platforms (AWS). Access is restricted to registered users and owners, with secure login pages to thwart attacks. Durability is ensured through data retention, backup, recovery, and cache mechanisms for enhanced performance. Efficiency is maintained during peak hours via load balancing and transactional isolation. MessWala's modular design promotes reusability and cohesion, offering scalability for a consistent user experience. With a focus on security, efficiency, and user-friendliness, MessWala is poised to revolutionize mess discovery and empower owners in their business endeavors.

Index

Sr. No.	Title	Page No.
1	Introduction	6
2	Problem Definition & Scope	7
2.1	Problem Definition	7
2.2	Goals & Objectives	9
2.3	Major Constraints & Outcomes	11
3	Software Requirement Specification	13
3.1	Proposed System	13
3.2	Scope	14
4	Performance-Requirements	18
4.1	H/W Requirements & S/W Requirements	18
5	UML Diagram	19
5.1	DFD	19
5.2	ERD	20
5.3	Use Case Diagram	21
5.4	Class diagram	22
5.5	Sequence Diagram	23
5.6	Activity diagram	24
5.7	Deployment Diagram	26
5.8	System Architecture	27
7	Test Cases	28
8	Screenshots	29
9	References	34
10	Conclusion	35

1. INTRODUCTION

MessWala is a web-based application designed to revolutionize the mess industry by offering a seamless platform for both users and mess owners. With dual login options for users and mess owners, it facilitates easy exploration of mess options within a specific locality or user-defined location. Users can access detailed information such as regular and today's menu, and discover top-rated messes. For mess owners, MessWala provides tools to scale up their business, including features to update menus and analyze user requirements through data and ratings. The system boasts 24/7 availability with 99.999% uptime, employs commercial database software for data persistence, and ensures maintainability through separate environments for production, testing, and development. The platform offers a portable user interface and can be deployed across various servers and cloud services. Accessible only to registered users and mess owners, it prioritizes durability with backup and recovery mechanisms, efficiency during peak hours through load balancing, and safety measures to secure user logins from potential threats. Designed with modularity and scalability in mind, MessWala aims to provide a consistent and secure user experience while transforming the mess industry.

2. PROBLEM DEFINITION & SCOPE

2.1 Problem Definition

MessWala aims to address several challenges faced by both mess owners and users in the context of finding, managing, and exploring mess options. The following problem areas have been identified:

1. Limited Visibility for Users:

- Users, especially students, face challenges in finding suitable mess options in their locality.
- Lack of a centralized platform makes it difficult for users to discover and explore various mess services.

2. Business Scalability for Mess Owners:

- Mess owners struggle to scale up their businesses due to a lack of online presence and efficient management tools.
- Inefficient methods of reaching potential customers hinder the growth potential of mess businesses.

3. Ineffective Communication and Information Flow:

- Users often lack information about the menu, ratings, and other details of mess services.
- Mess owners find it challenging to communicate their offerings effectively to potential customers.

4. Data Analysis for Business Improvement:

- Mess owners lack tools to analyze user preferences and feedback to enhance their services.
- Absence of a systematic approach to gathering and analyzing data for business growth and customer satisfaction.

5. Infrastructure and Accessibility Issues:

- Lack of a reliable and accessible platform for users to explore mess options.
- Mess owners face challenges in managing and updating information efficiently due to limited technical infrastructure.

6. Security Concerns:

- Users and mess owners need assurance regarding the security of their data and transactions.
- The potential vulnerability of the system to malicious attacks and phishing.

7. Operational Challenges:

- System downtime and inefficient load balancing may result in a poor user experience during peak hours.
- Lack of modularity may lead to difficulties in system maintenance and future enhancements.

8. Deployment Flexibility:

- The system needs to be adaptable to various deployment scenarios, including different servers and cloud environments.
- The flexibility to deploy the system on different operating systems and cloud platforms is crucial for widespread usability.

Scope

1. User Authentication:

- Implement two login options: Users and Mess Owners, ensuring access only for registered individuals.

2. User Exploration:

- Allow users to explore mess options based on their current location or by manually entering a location.

3. Filtering and Sorting:

- Provide users with the ability to filter mess options based on ratings for a more personalized experience.

4. Mess Information:

- Display comprehensive information for each mess, including regular menu, today's menu, and other relevant details.

5. Top-Rated Mess Display:

- Showcase top-rated mess options to users for quick decision-making.

6. Mess Owner Tools:

- Equip mess owners with tools to enhance their business, such as updating menus and analyzing user data.

7. Non-Functional Requirements

- Ensure 24*7 availability with 99.999% uptime, maintainability through commercial database software, and portability using React.js .

8. Security and Safety Measures:

- Implement secure user authentication, protect against malicious attacks, and maintain separate environments for production, testing, and development.

2.2 Goals & Objectives:

Goals:

1. User Experience Enhancement:

- MessWala aims to provide a seamless and user-friendly experience for both users and mess owners, ensuring easy navigation and accessibility.

2. Business Expansion for Mess Owners:

- The primary goal is to empower mess owners in scaling up their businesses by attracting more customers through the platform, ultimately leading to increased revenue.

3. Efficient Location-Based Search:

- Enable users to effortlessly find mess options in any locality, whether based on their current location or through manual input, fostering convenience and choice.

4. Rating-Based Filtering:

- Allow users to filter mess options based on ratings, ensuring that they can make informed decisions by considering the experiences of others.

5. Menu Information Accessibility:

- Provide users with detailed information about mess menus, including regular and daily offerings, helping them make dining choices that align with their preferences.

6. Top-Rated Mess Recommendations:

- Highlight and recommend the top-rated mess options to users, offering a curated selection based on positive reviews and ratings.

7. Data-Driven Business Analysis Equip mess owners with tools to analyze user preferences and ratings, enabling them to adapt their services to meet customer expectations effectively.

Non-Functional Goals:

1. High Availability:
 - Ensure MessWala is available 24/7, with an uptime of 99.999%, guaranteeing continuous access for both users and mess owners.
2. Maintainability:
 - Implement a robust infrastructure using commercial database software, web servers, and separate environments for easy maintenance and updates.
3. Portability:
 - Provide a portable user interface using React.Js, and TailwindCSS, allowing users to access the application from various devices and deploy it to different platforms.
4. Accessibility and Security: Maintain a secure login system, restricting access to registered users and mess owners after authentication, safeguarding against malicious attacks and phishing.
5. Durability:
 - Implement backup and recovery mechanisms to retain user and mess owner data, ensuring data persistence over time.
6. Efficiency and Scalability:
 - Manage peak hours efficiently through load balancing, ensuring a consistent user experience irrespective of the system load. The system should be scalable to handle increased user traffic.
7. Modularity:
 - Design MessWala with modular components, promoting reusability and flexibility. Modules should be loosely coupled and highly cohesive for efficient development and maintenance.
8. Safety:
 - Prioritize the security of user data, implementing best practices to protect sensitive information and maintaining separate environments for production, testing, and development to ensure isolation.

Objectives:

1. Develop a web-based platform, MessWala, with the primary objective of aiding mess owners in expanding their businesses and enabling users, especially students, to easily discover available mess options in their vicinity.
2. Implement a dual login system, allowing users and mess owners to access the platform, each with their unique set of functionalities.

3. Empower users to explore mess options based on their present location or manually entered preferences, providing a convenient search experience.
4. Enable users to filter mess options based on ratings, facilitating informed decision-making.
5. Furnish users with detailed information about mess facilities, including regular and today's menu, fostering transparency and user engagement.
6. Showcase top-rated mess establishments to users, enhancing their ability to choose high-quality options.
7. Facilitate mess owners in scaling up their businesses by offering features such as menu management, data analysis, and user feedback assessment.
8. Ensure the platform's 24*7 availability with a 99.999% uptime, utilizing robust technologies and maintaining a secure and efficient user experience.

2.3 Major Constraints & Outcomes

Constraints

8. **Data Privacy and Security:** Ensuring the confidentiality and security of user and mess owner data is a major constraint. Implementing robust encryption, secure authentication mechanisms, and protecting against potential data breaches are critical considerations.
9. **Scalability Challenges:** As the platform aims to provide a consistent user experience irrespective of load, scalability becomes a major constraint. The system must be designed to handle a growing number of users, mess owners, and data without compromising performance.
10. **User Authentication and Authorization:** Implementing a secure and efficient user authentication and authorization system is crucial. This involves validating user identities, managing access control, and preventing unauthorized access to sensitive information.

11. **Integration with External Services:** If the system relies on external services or APIs for features such as map integration, location services, or payment gateways, ensuring seamless integration and maintaining compatibility with these external services becomes a constraint.
12. **Regulatory Compliance:** Adhering to legal and regulatory requirements related to data protection, business operations, and any industry-specific regulations is a constraint. This includes compliance with data protection laws, food safety regulations, and any other applicable standards.

Outcomes :

1. **Data Quality and Availability:** Ensuring high-quality data and its continuous availability is crucial for the success of MessWala. Incomplete or inaccurate information about mess details, menus, and ratings could lead to dissatisfaction among users. Regular data audits and validation processes should be implemented to maintain data integrity.
2. **Integration with Mess Owners:** Collaborating with mess owners to integrate their business data into the platform might face resistance or technical challenges. Establishing a streamlined onboarding process for mess owners and providing necessary support for data integration will be essential for the platform's success.
3. **User Adoption and Engagement:** Encouraging users, especially students, to actively use the platform and provide accurate feedback is a challenge. Implementing user-friendly features, incentives, and marketing strategies to boost user engagement will be critical. Regularly seeking user feedback for continuous improvement is also essential.
4. **Technological Infrastructure:** Building and maintaining a robust technological infrastructure, including accurate mapping algorithms, secure databases, analytics tools, and user interfaces, is crucial. Regular updates, security patches, and scalability measures should be implemented to ensure a seamless and secure user experience.
5. **User Interface and Accessibility:** Designing an intuitive and accessible user interface is key to attracting and retaining users. Ensuring accessibility for users with diverse abilities, including those with disabilities, requires adherence to web accessibility standards (WCAG). Conducting usability testing and incorporating user feedback will help refine the user interface for optimal user experience.
6. **Sustainability:** Long-term sustainability in terms of funding, resource allocation, and user engagement is a critical consideration. Developing a sustainable business model, exploring revenue streams, and establishing partnerships with relevant stakeholders will contribute to the continued success and growth of MessWala. Regular assessments of resource requirements and user needs will inform strategic planning for sustainability.

3. SOFTWARE REQUIREMENT SPECIFICATION

Document:

System Requirement Specification Document

Title:

System Requirement Specification for MessWala

Team:

Direct Customer, Indirect Customer, Architect, Business Analyst, Quality Assurance Team, System Analyst

3.1 Proposed System:

MessWala aims to revolutionize the food service industry by providing a comprehensive web-based platform. The primary goal is to empower mess owners, enabling them to expand their businesses efficiently. Simultaneously, it seeks to enhance the dining experience for users, particularly students, by offering a quick and convenient way to discover all available mess options in their area with just a click.

1. Benefits for Mess Owners:

For mess owners, MessWala serves as a strategic tool for business growth. The platform equips them with features to scale up operations and gain insights into user preferences through data analytics and ratings analysis. By facilitating the addition of daily and regular menus, MessWala becomes an essential companion for mess owners in managing and promoting their establishments effectively.

2. User-Centric Exploration:

On the user front, MessWala focuses on simplicity and accessibility. Normal users can effortlessly explore mess options within their current location or any manually entered area. The system allows users to filter mess choices based on ratings, providing a curated selection. Information such as regular and today's menu is readily available, ensuring users make informed decisions about their dining choices.

3. Top-Rated Recommendations

MessWala enhances user experience by showcasing top-rated mess options. This feature aids users in discovering the most popular and well-regarded establishments, aligning with their preferences. Through a user-friendly interface, MessWala aims to make the process of finding the right mess both effortless and enjoyable.

4. Technologically Advanced Infrastructure

The objective includes deploying a robust and technologically advanced system. With an emphasis on non-functional requirements, MessWala guarantees 24/7 availability, employing commercial database software, and implementing backup and recovery mechanisms. The use of modern technologies such as React.js, and TailwindCSS ensures a portable and seamless user interface accessible across various devices and platforms.

5. Security and Safety Measures:

Lastly, MessWala prioritizes the security of user data and system integrity. Only registered users and mess owners, authenticated through a secure login process, gain access to the platform. The system incorporates safety measures to protect against malicious attacks and phishing attempts. With separate environments for production, testing, and development, MessWala ensures a secure and reliable user experience.

3.2 Scope:

The MessWala project aims to develop a web-based application facilitating mess owners in scaling their business and enabling users, particularly students, to effortlessly discover available mess options in any locality. The platform features dual login options for users and mess owners, ensuring accessibility only for registered individuals. Users can explore nearby mess options, filter by ratings, and access detailed information on menus. Meanwhile, mess owners can utilize the system to expand their business, update menus, and analyze user preferences through data and ratings. With a strong focus on non-functional aspects, including 24/7 availability, maintainability through commercial database software, and a portable user interface, MessWala strives to deliver a secure, efficient, and scalable solution that meets the diverse needs of both users and mess owners.

Functional Requirements:

1. User and Mess Owner Authentication:

- Users should be able to log in with their credentials.
- Mess owners should have a separate login option.
- Authentication mechanisms should ensure secure access.

2. User Exploration:

- Users can explore available mess options based on their current location.
- Manual location input should also be an option for users.
- Filtering options for mess based on ratings.

3. Mess Information:

- Display detailed information about each mess, including regular menu and today's menu.
- Provide a platform for mess owners to update and manage their menus.

4. Top-Rated Mess:

- Display a list of top-rated mess options to users.
- The rating system should be based on user reviews and feedback.

5. Mess Owner Business Tools:

- Mess owners should have tools to scale up their business.
- Functionality for mess owners to add and update today's menu, regular menu, etc.

6. User Feedback and Ratings:

- Users should be able to provide feedback and ratings for mess services.
- Mess owners can access and analyze user ratings for continuous improvement.

Non-Functional Requirements :

1. Availability:

- The system must be available 24/7 with a target uptime of 99.999%.

2. Maintainability:

- A commercial database software will be employed for data persistence.
- A web server will be installed to host the MessWala application, ensuring proper management of server capabilities.
- Separate environments (production, testing, and development) will be maintained for isolation.

3. Portability:

- The system will provide a portable User Interface using React.Js.
- Deployment flexibility on various environments, including single-server, multi-server, and cloud platforms like Azure, AWS.

4. Accessibility:

- Only registered users and mess owners will have access to the system after proper authentication.

5. Durability:

- The system will maintain user and mess owner details persistently.
- Implementation of backup and recovery mechanisms to retain mess data and business data over time.
- Utilization of caching for faster data retrieval and improved performance.

6. Efficiency:

- The system will ensure a consistent user experience during peak hours through effective load balancing.
- Efficient transaction management in isolated environments.

7. Modularity:

- Design and development of the system will follow a modular approach.
- Modules will be loosely coupled and highly cohesive, promoting reusability and independence.

8. Scalability:

- The system will provide a consistent user experience regardless of the user load.

9. Safety:

- Implementation of secure login pages to protect against malicious attacks and phishing attempts.
- Maintenance of separate environments for production, testing, and development to ensure isolation and security.

4. PERFORMANCE REQUIREMENT

4.1 Hardware Requirements and Software Requirements

Hardware Requirements

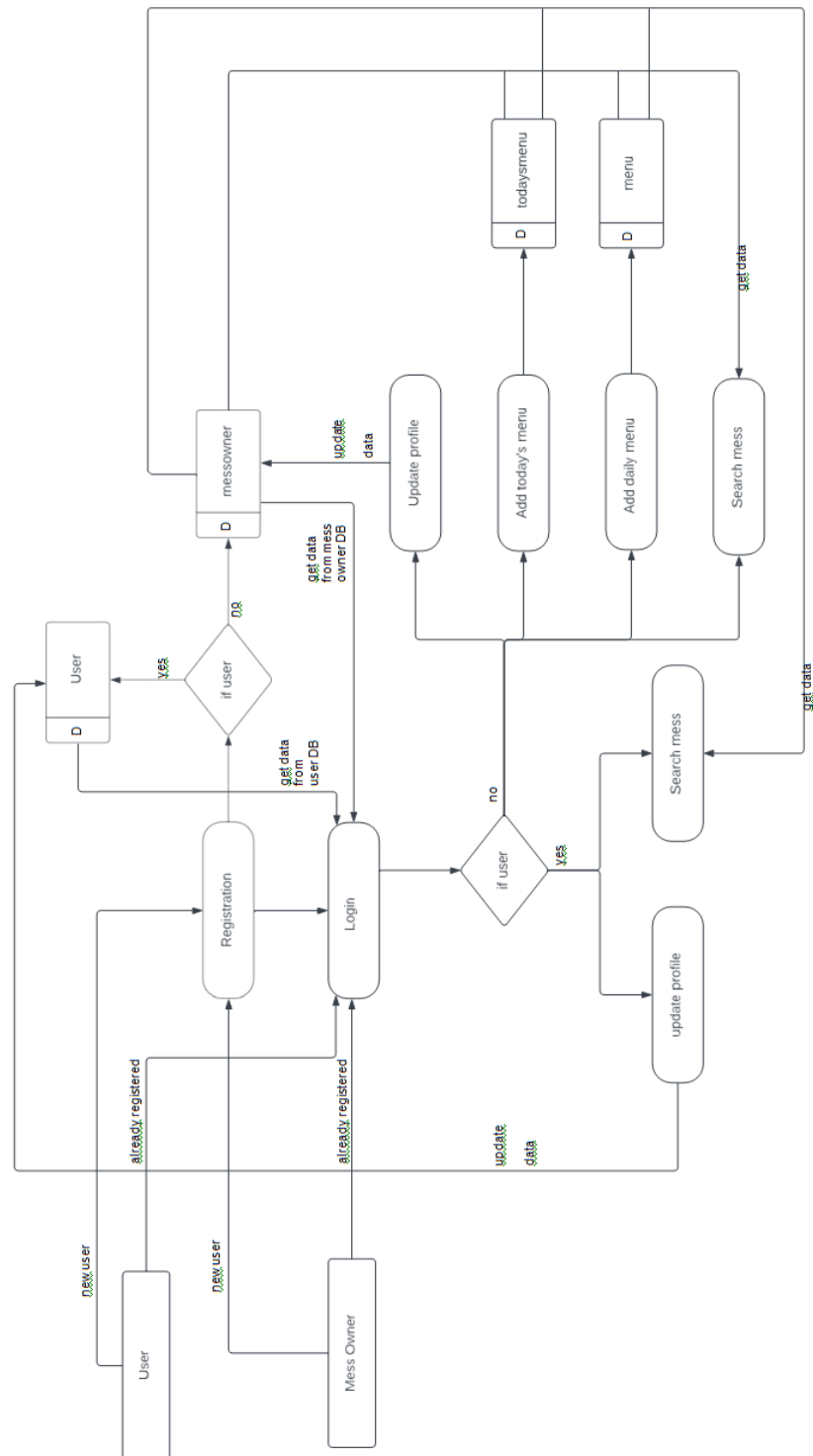
1. Intel i3 processor 3rd generation or later / AMD Ryzen 2002nd generation or later
2. 4GB RAM.
3. Windows 7 Home edition or later.
4. 200GB data HDD Space
5. Data Connection 200kbps

Software Requirements

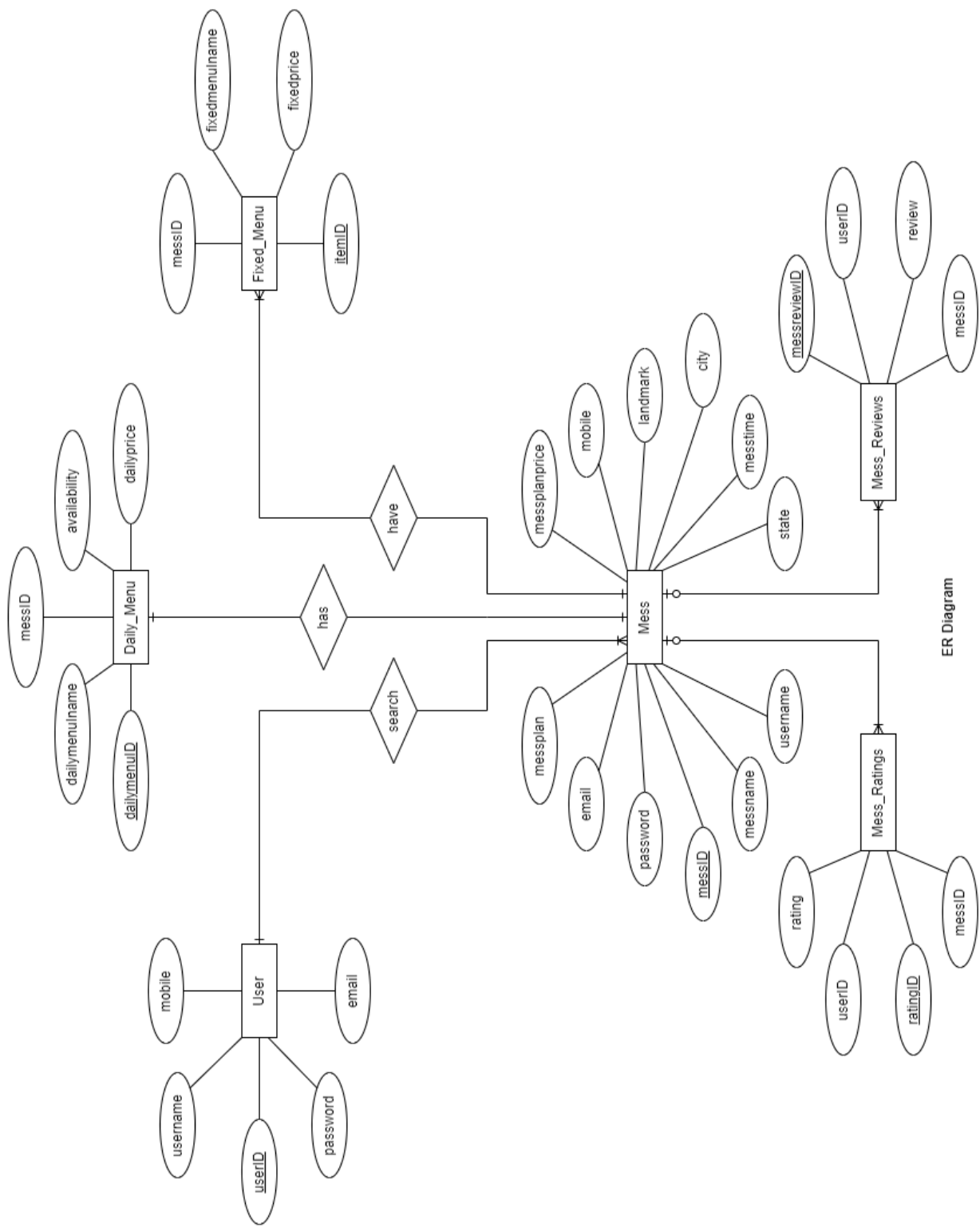
1. Eclipse 4.7
2. MySQL 5.8 with Workbench 8.0
3. Google Chrome version 119
4. Apache Tomcat Server 9.0
5. Maven Dependencies
6. Visual Studio C

5. UML DIAGRAM

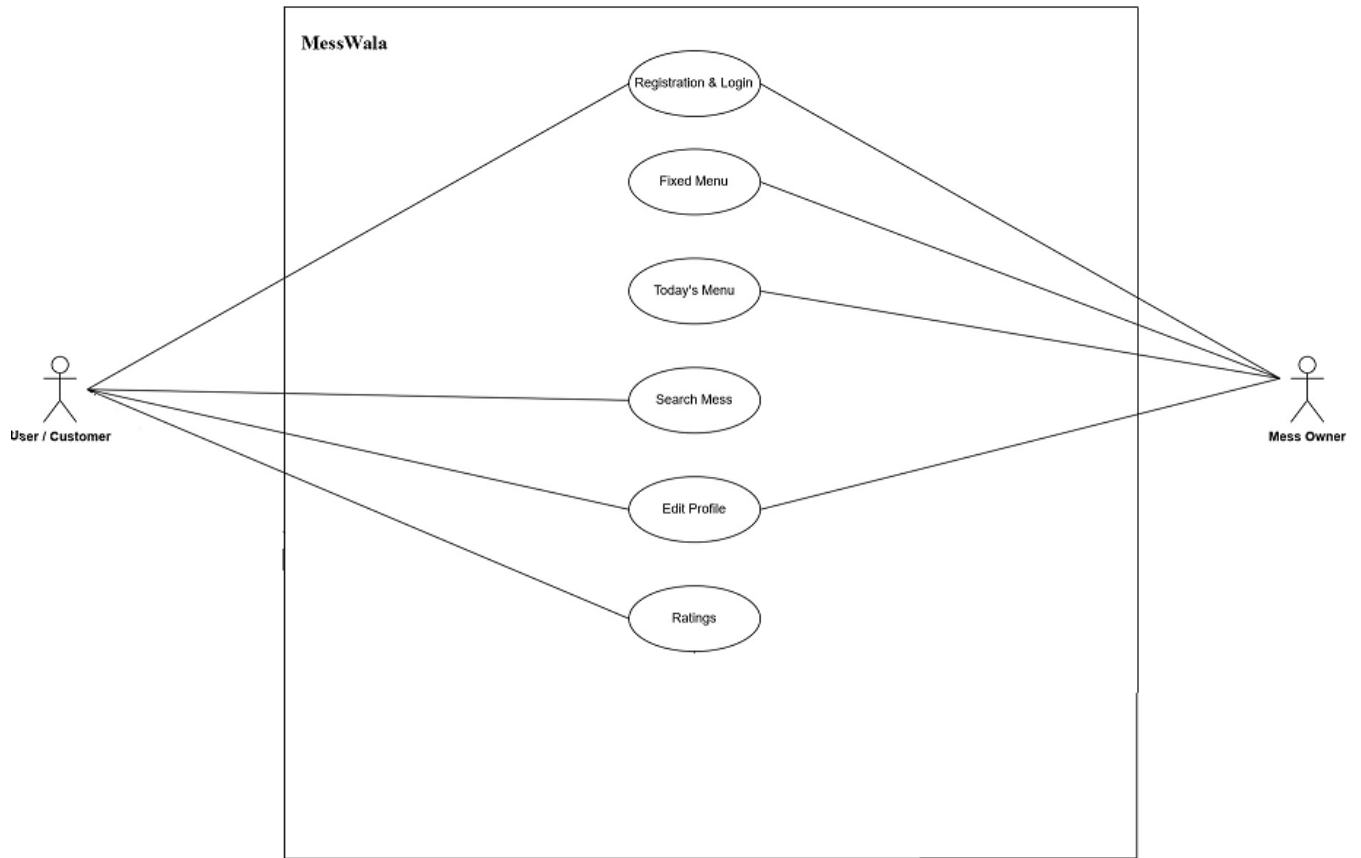
5.1 DFD Diagram



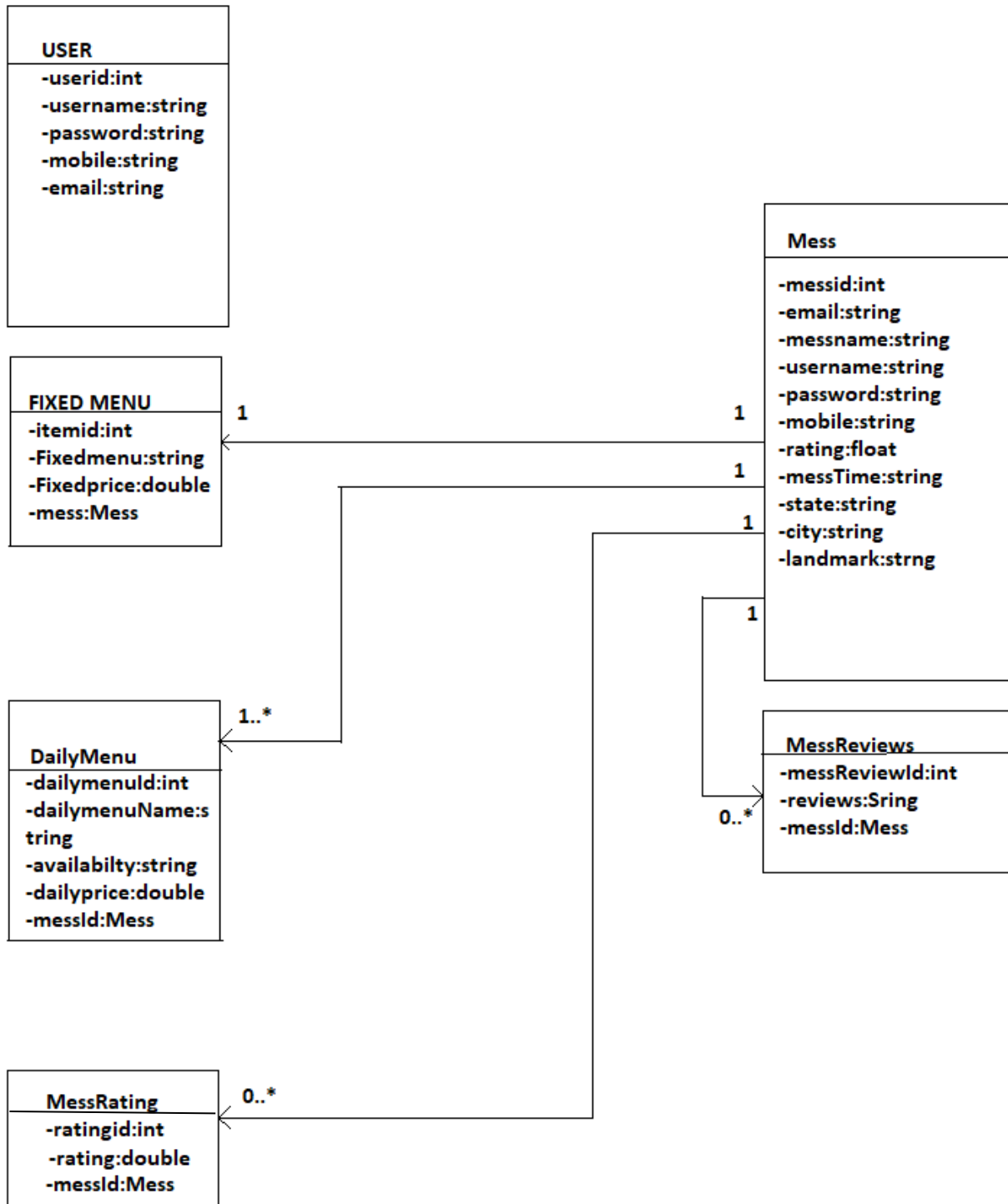
5.2 ER Diagram



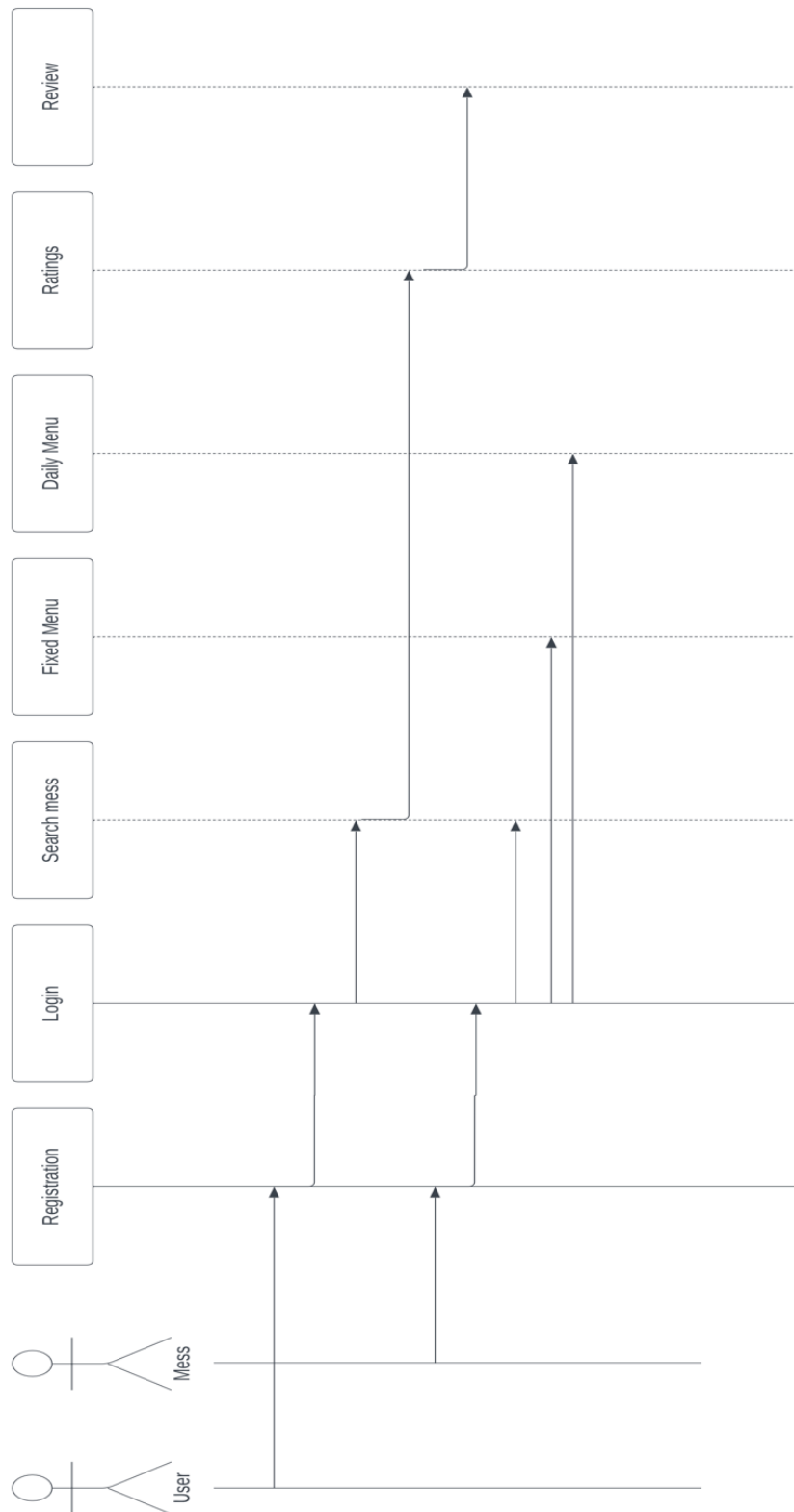
5.3 Use case Diagram



5.4 Class Diagram

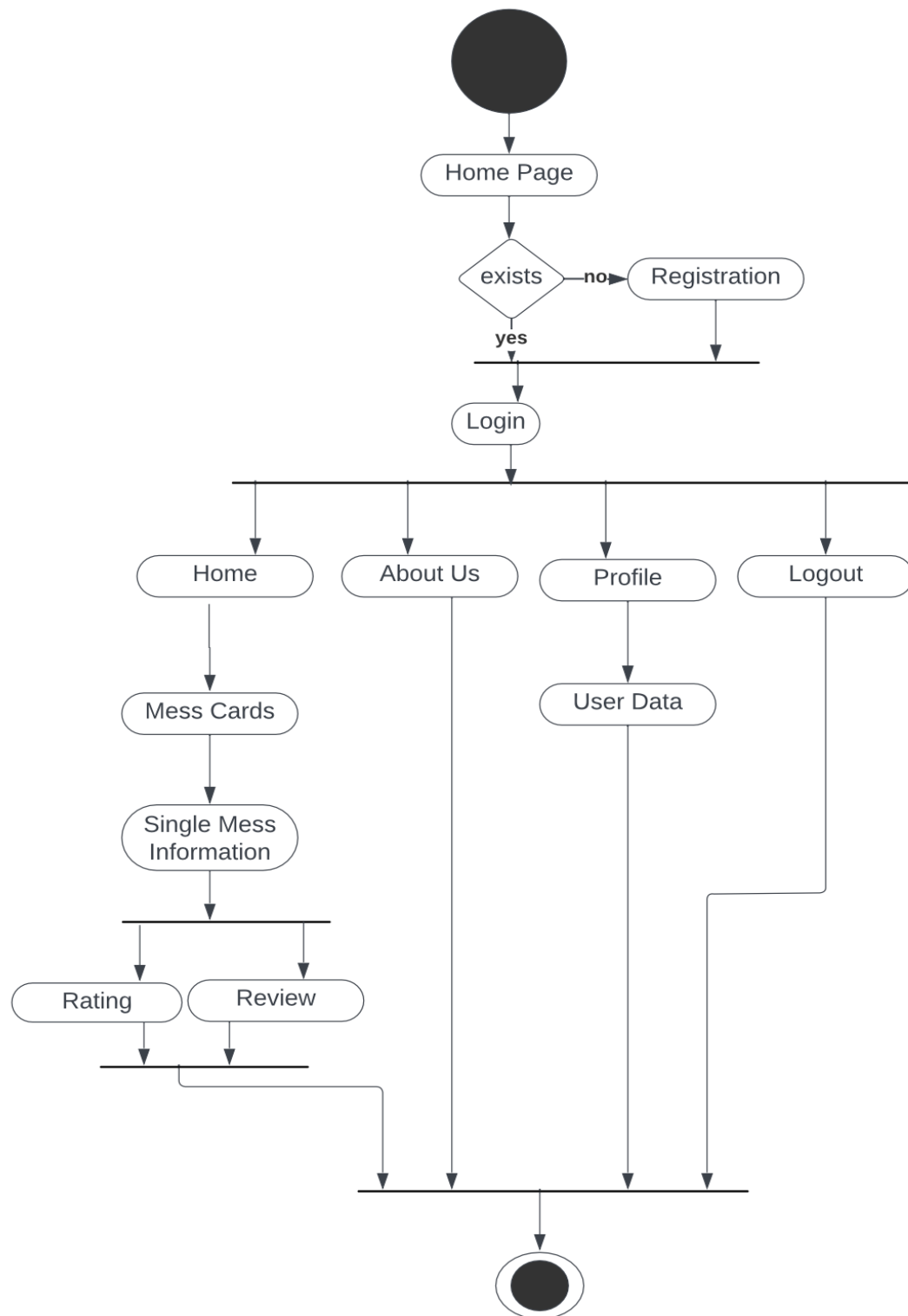


5.5 Sequence Diagram

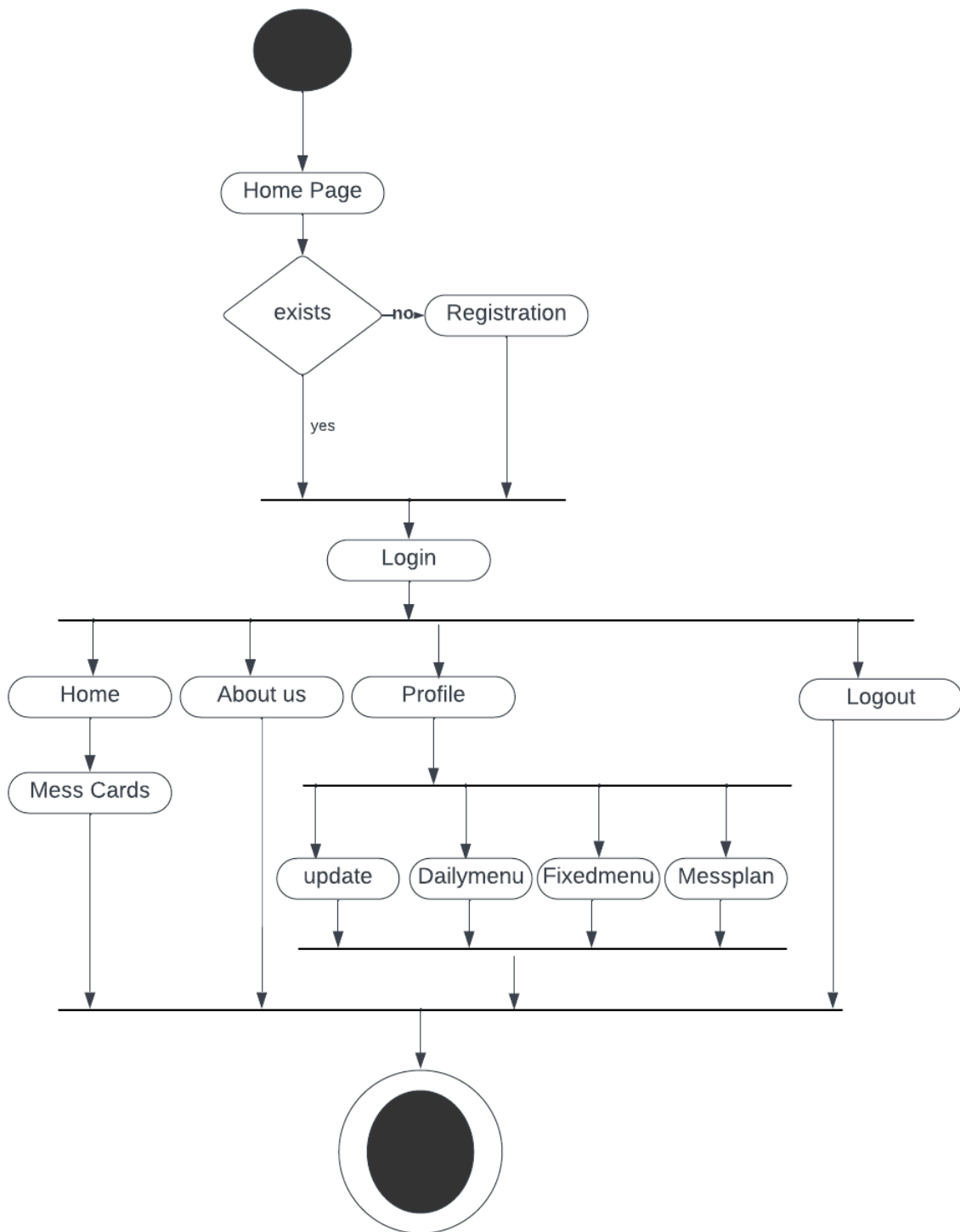


5.6 Activity Diagram

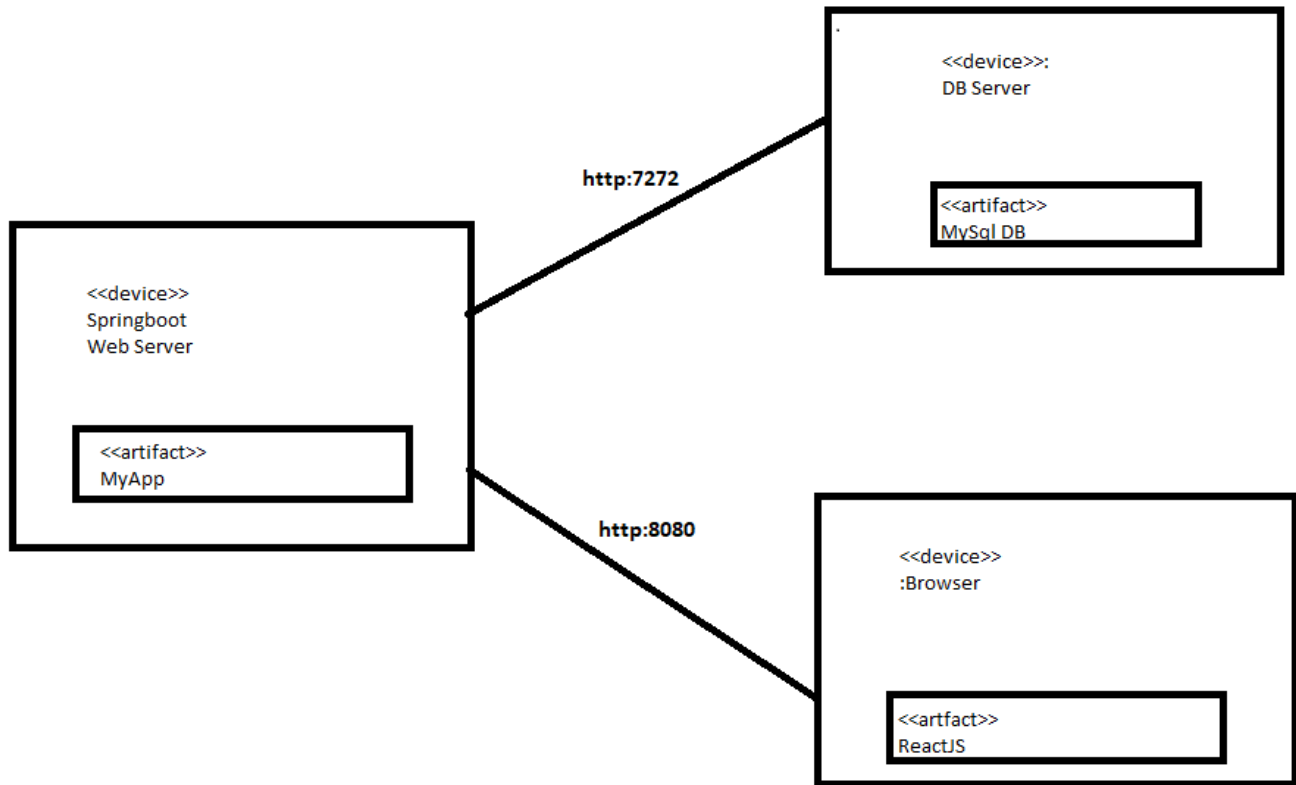
User Activity Diagram:



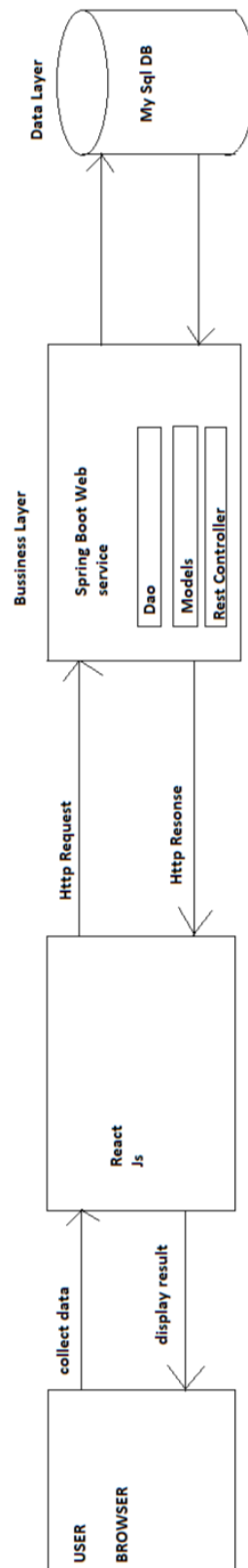
Mess Activity Diagram



5.7 Deployment Diagram



5.8 System Architecture




6. Test Cases

Test Case Id	Test Case Description	Test Data	Expected Data	Actual Output	Status
1	Registration as User or Mess	valid username, valid password, valid email, etc	Registration Successful	Registration Successful	Pass
2	Login as User or Mess	valid email, valid password, valid type	Login Successful	Login Successful	Pass
3	Login as User or Mess	valid email, valid type, invalid password	Login Failed	Login Failed	Pass
4	Add Daily Menu (For Mess)	valid menuname, valid availability, valid price	Daily Menu Added Successfully	Daily Menu Added Successfully	Pass
5	Add Fixed Menu (For Mess)	valid menuname, valid price	Fixed Menu Added Successfully	Fixed Menu Added Successfully	Pass
6	Forgot Password for User or Mess	valid email, valid type, valid new password	Password Updated Successfully	Password Updated Successfully	Pass
7	Search Mess	valid address	Mess List	Mess List	Pass
8	Logout as User or Mess	—	Logout Successful	Logout Successful	Pass

7. SCREENSHOTS

Registration Page



Registration Form

Username

Email

Password

Choose Type
Select One ▼

City

State

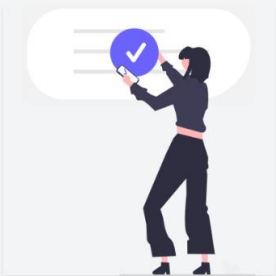
Landmark

Mobile

[Register](#)

Login Page

MessWala [ABOUTUS](#) [CONTACT](#) [REGISTER](#) [LOGIN](#)



Login Form

Email


Password

Choose Type
Select One ▼

[Login](#)

Home Page

MessWala[ABOUTUS](#)[CONTACT](#)[REGISTER](#)[LOGIN](#)



All Mess

Kunal
Mess
OwnerName:


Sahara
Hotel
OwnerName:

Tejas
Mess
OwnerName:

Aditya
Mess
OwnerName:

Contact Us Page

MessWala[ABOUTUS](#)[CONTACT](#)[REGISTER](#)[LOGIN](#)



Contact Us

Name

Email

Message




This site is copyright-protected and is property of MessWala
@MessWala Pvt.Ltd.



About us


MessWala

ABOUTUSCONTACTREGISTERLOGIN






Features of MessWala

1. Introducing Mess Wala, an innovative Fullstack Application leveraging cutting-edge technologies such as ReactJS, SpringBoot, and MySQL.
2. This dynamic platform revolutionizes the way users, primarily students, employees, and workers, discover food messes in their desired locations with just a click.
3. Seamlessly presenting menu cards, mess plans, daily specials, ratings, and top-rated messes in the area, Mess Wala ensures a convenient and efficient dining experience.
4. Not only does this platform cater to users, but it also serves as a game-changer for mess owners, providing them with tools to scale up their businesses.
5. Elevate your culinary journey with Mess Wala – where technology meets taste!



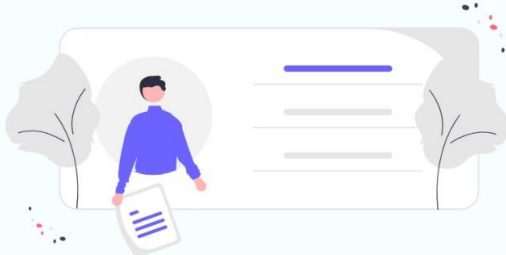
This site is copyright-protected and is property of MessWala
@MessWala Pvt.Ltd.



User Profile Page

MessWala

ABOUTUSCONTACT🔥 Kunal Hole 🔥 LogOut



👤 Kunal Hole 👤


Username

Email




Password

Mobile

Update Profile



This site is copyright-protected and is property of MessWala
@MessWala Pvt.Ltd.



Mess Owner Profile Page

MessWala[ABOUTUS](#)[CONTACT](#)[🔥 Nikhil Landkar 🔥](#)[LogOut](#)

[AddMessPlan](#)[AddMenuCardMenu](#)[AddDailyMenu](#)

DailyMenu Form

MenuName

Chicken

Availability

11 PM To 10 PM

Price

[AddMenu](#)

Nikhil Landkar

Username

Nikhil Landkar

Email

nikhil555@gmail.com

Password

MessName

Sahara Hotel

MessTime

10 AM To 10 PM

City

Ahmednagar

State

Maharashtra

Landmark

Balikkashram Road

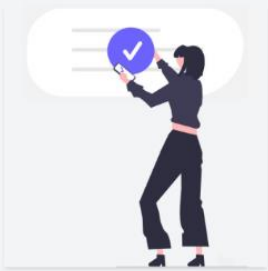
Mobile

233456789

[Update Profile](#)

Forgot Password Page

MessWala[ABOUTUS](#)[CONTACT](#)[REGISTER](#)[LOGIN](#)



Forgot Password

Email

Password

Choose Type

Select One

[Update](#)

Any Form Like Fixed Menu, Daily Menu

MessWala

AddMessPlan

AddMenuCardMenu

AddDailyMenu

DailyMenu Form

MenuName

Availability

Price

AddMenu

8. References

- 1) React documentation - <https://legacy.reactjs.org/docs/add-react-to-a-website.html>
- 2) React Router Dom Documentation - <https://v5.reactrouter.com/web/guides/quick-start>
- 3) Axios Documentation - <https://www.geeksforgeeks.org/axios-in-react-a-guide-for-beginners/>
- 4) Hibernate Documentation - <https://hibernate.org/orm/documentation/6.4/>
- 5) Spring Boot Reference Documentation Phillip Webb, Dave Syer, Josh Long, Stéphane Nicoll, Rob Winch, Andy Wilkinson, Marcel Overdijk, Christian Dupuis, Sébastien Deleuze, Michael Simons, Vedran Pavić, Jay Bryant, Madhura Bhav
- 6) Spring Boot Documentation - <https://docs.spring.io/spring-boot/docs/2.1.13.RELEASE/reference/html/index.html>
- 7) MySQL 8.0 Reference Manual Including MySQL NDB Cluster 8.0 - <https://downloads.mysql.com/docs/refman-8.0-en.pdf>

9. Conclusion

In conclusion, MessWala aims to revolutionize the mess industry by providing a seamless platform for users to discover and engage with local mess options while empowering owners to enhance their businesses. With robust functionalities catering to both users and mess owners, the system ensures reliability, scalability, and security through advanced technology and strategic design. By prioritizing accessibility, efficiency, and maintainability, MessWala is poised to become the go-to solution for students seeking hassle-free dining experiences and mess proprietors aiming for growth and optimization.