

GRUBHUB

**Food Delivery Application for
JAVA Green , SRM**



PROBLEM STATEMENT



Hassle-free Takeaways at JAVA Green

- Long queues outside every restaurant in JAVA.
- Bottleneck Situation: handling numerous orders at a single time.
- The prolonged waiting time period for the customer.
- Payment issues for restaurants.

This Project is about **managing the orders placed in eateries at Java Green.**

Usually, during the rush hours, a small order at java can take upto 20 minutes. Our application, Grubhub administers this issue by **ensuring a smoother workflow** as the customer is notified 5 mins before the order is delivered to them.

Grubhub would not only help the restaurants **manage the throng** outside every restaurant but also help them understand their workflow and help them improve by **avoiding delays.**

THE PRODUCT



Features

The application features:-

- An interactive and **easy-to-use UI**.
- Provides **customer care support** in case of any issues.
- Provides **payment gateways support** which helps in maintaining a record of order history, payment mode and the bill amount.
- **Reviews and feedback** on the food you had thus improving sales of a restaurant.



Our Approach

1. Conducting a survey to gain data about various restaurants and the number of orders placed in each eatery.
2. Creating a mobile application for both Android and iOS users, available on Play Store and App store respectively, to connect the customer and the place they wish to eat at.
3. Integration of database into our application providing a list of restaurants present in Java.
4. Marketing and publicising our application would be important to attract more and more customers.
5. Expanding our business model across various campuses in different universities.

STAKEHOLDERS OF THE PROJECT

Stakeholder Name	Activity/ Area/ Phase	Interest	Influence	Priority (High/Medium/ Low)
Admin	Monitoring added users	High	High	1
User	Provides feedback and utilizes the application	High	High	2
Restaurant Owner	Provides data to be presented in app	Low	Low	1

SRM Management	Provides approval and facilities if required	Low	Low	1
Sponsor	Provides funs,help in marketing	Low	Low	2
Software Developer	Designs develops and maintains the application	High	High	2
Cloud Services	Provides cloud-based services	High	High	1
Google Play or App Store	Provides a platform for hosting mobile application	High	Low	2

System Requirements

The entire project would need the following components:

- A server and data managing system which manages the backend part of the application.
- An interactive UI with a great user experience so that each user could easily navigate through our application.
- User and Restaurant complaints should be handled efficiently.

Functional Requirements

1. Customer Case Services for both end-users.
2. Maintenance of the application
3. History and Transaction details of the order placed previously.
4. Linking the Database and the server together
5. Managing numerous orders simultaneously i.e. **Scalability**.
6. Handling customer reviews, complaints and feedback
7. Integrating Payment Gateway such as RazorPay, PayU etc.

Non - Functional Requirements

1. Tech Stack used to Build the application
2. A platform that the application runs on such as Android, IOS
3. Network Connection in order to connect to the server and place an order
4. Storage and Memory requirements by the application of the device it runs on.
5. The scalability of the device.

Project Management Plan

Integration Management

All project decisions must be made after weighing all of the benefits and drawbacks, and in the event of a disagreement, a vote must be conducted and the outcome must stand.

Team Roles and Responsibilities:

1. The Backend part of the website.
2. The Frontend part (UI/UX and designing)

Change Management - If a situation happens that necessitates change management, all team members must contribute to the backend part of the application development and the Frontend part should be done in such a way that encompasses all options.

Communication Management

All vital details and information should be provided to the team's official group, along with a label indicating the message's urgency. All deadlines will be communicated and informed well in advance. Management of Procurement The team will work with the customer for two months to oversee any bugs and provide assistance as needed.

Project Management Plan

Stakeholder

Identifying, Analyzing, Engaging Stakeholders

Admin:- Monitoring and managing numerous users and their data.

User:- The users that engage with the application and publicize our application/service.

Restaurant Owner:- The Restaurant owners play a major role as a stakeholder as they provide us with all the necessary details required that have to be presented in the application.

Developers:- A team of 2 developers managing the frontend [UDIT GOGIA] and backend [HARSH KUMAR JAIN] of the application effectively.

Hosting Platform:- The platform where the application will be hosted [Google Play Store or App Store for Mobile application or Vercel or Netlify for Web Application].

EFFORT AND COST ESTIMATION

Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost in INR
Design the user screen	E1R1A1T1 (Effort-Requirement-Activity-Task)	Confirm the user requirements (acceptance criteria)	5	2500
	E1R1A1T2	Designing and developing the frontend	12	6000
	E1R1A1T3	Developing and managing the data [DATABASE MANAGEMENT]	10	5000
Identify Data Source for displaying units of Energy Consumption		Go through Interface contract (Application Data Exchange) documents	5	2500
		Document	3	1500

Effort (hour)	Cost (INR)
1	500

INFRASTRUCTURE RESOURCE COST

Infrastructure Requirement	Qty	Cost per qty	Cost per item
Hosting Server	1	3k/month	3000/month
Cloud Storage	1	10k/month	10k/month
Hardware	2	80k	1.6L
Domain name	1	3k/month	3k/month

MAINTENANCE & SUPPORT COST

Category	Details	Qty	Cost per qty per annum	Cost per item
People	Server Side and DB manager Frontend Developer Backend Developer Support Consultant	4	1,00,000	400,000
License	Operating System Database Serves IDE	10	10000	100,000
Infrastructures	Server, Storage and Network	20	20000	400,000

Project Team Management

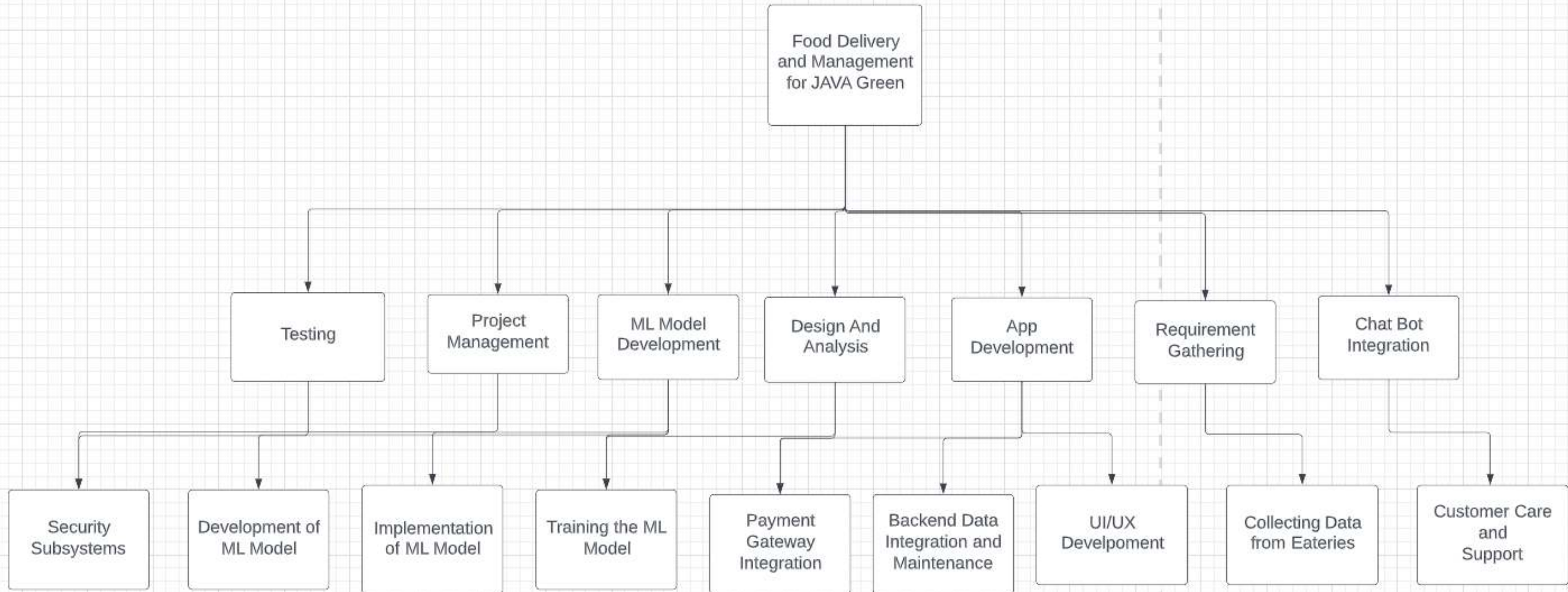
IDENTIFICATION OF TEAM MEMBERS

Name	Role	Responsibilities
Harsh Kumar Jain	Key Business User (Product Owner)	Provide clear business and user requirements
Udit Gogia	Project Manager	Manage the project
Harsh Kumar Jain	Business Analyst	Discuss and Document Requirements
Harsh Kumar Jain	Technical Lead	Design the end-to-end architecture
Udit Gogia	UX Designer	Design the user experience
Udit Gogia	Frontend Developer	Develop user interface
Harsh Kumar Jain Udit Gogia	Backend Developer	Design, Develop and Unit Test Services/API/DB
Harsh Kumar Jain Udit Gogia	Tester	Define Test Cases and Perform Testing

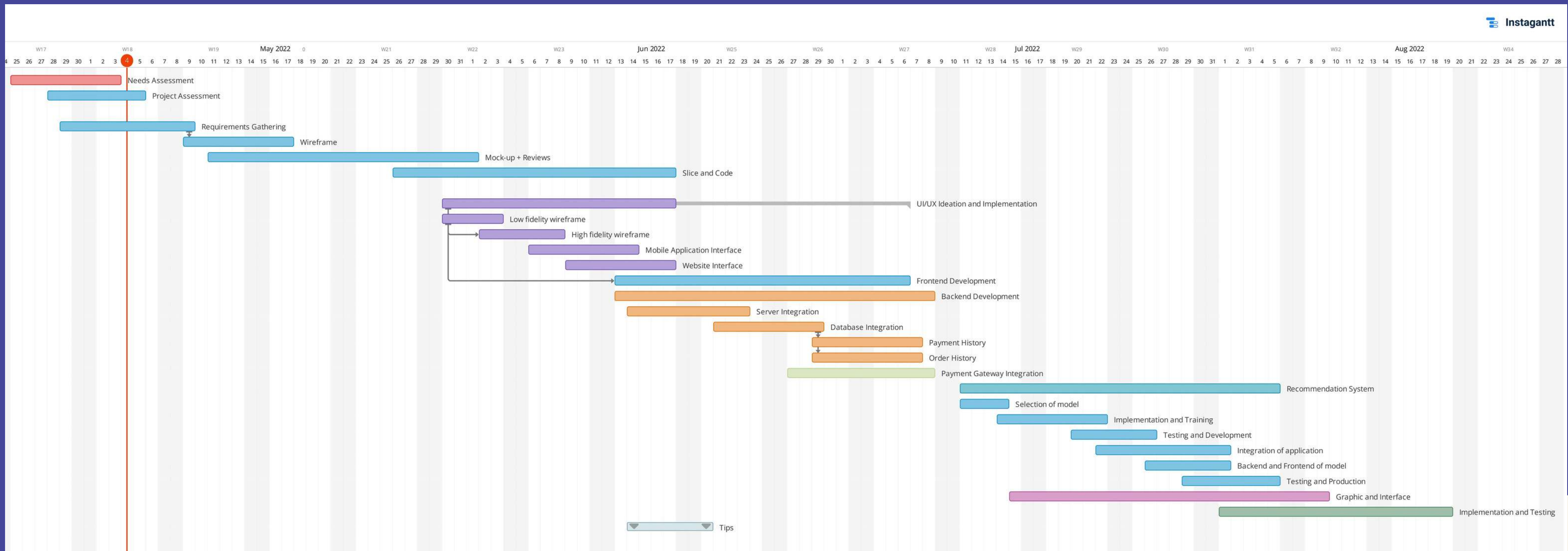
Responsibility Assignment Matrix

RACI Matrix	Team Members			
Activity	Harsh Kumar Jain (BA)	Udit Gogia (DEVELOPER)	Udit Gogia (PROJECT MANAGER)	Harsh Kumar Jain (KEY BUSINESS USER)
User Requirement Documentation	A	C/I	I	R
Frontend	C	R	A	I
Backend	A	C	R	
Testing	A	C	R	I
Database Management	R	C	A	I
Deployment	I	R	C	A

Work Breakdown Structure



GANTT - CHART



SWOT Analysis

Strengths

- Long and unwanted throngs will be eliminated.
- Great customer care service.
- User Friendly
- Previous order history will be stored and the user can access the history whenever required.

Weakness

- Server down or data managing issue.
- A smaller amount of audience may not attract other students.
- DNS server issues.

Opportunities

- Can create great opportunities for the Take-away delivery system in India.
- Historical data of users can be used for order predictions

Threats

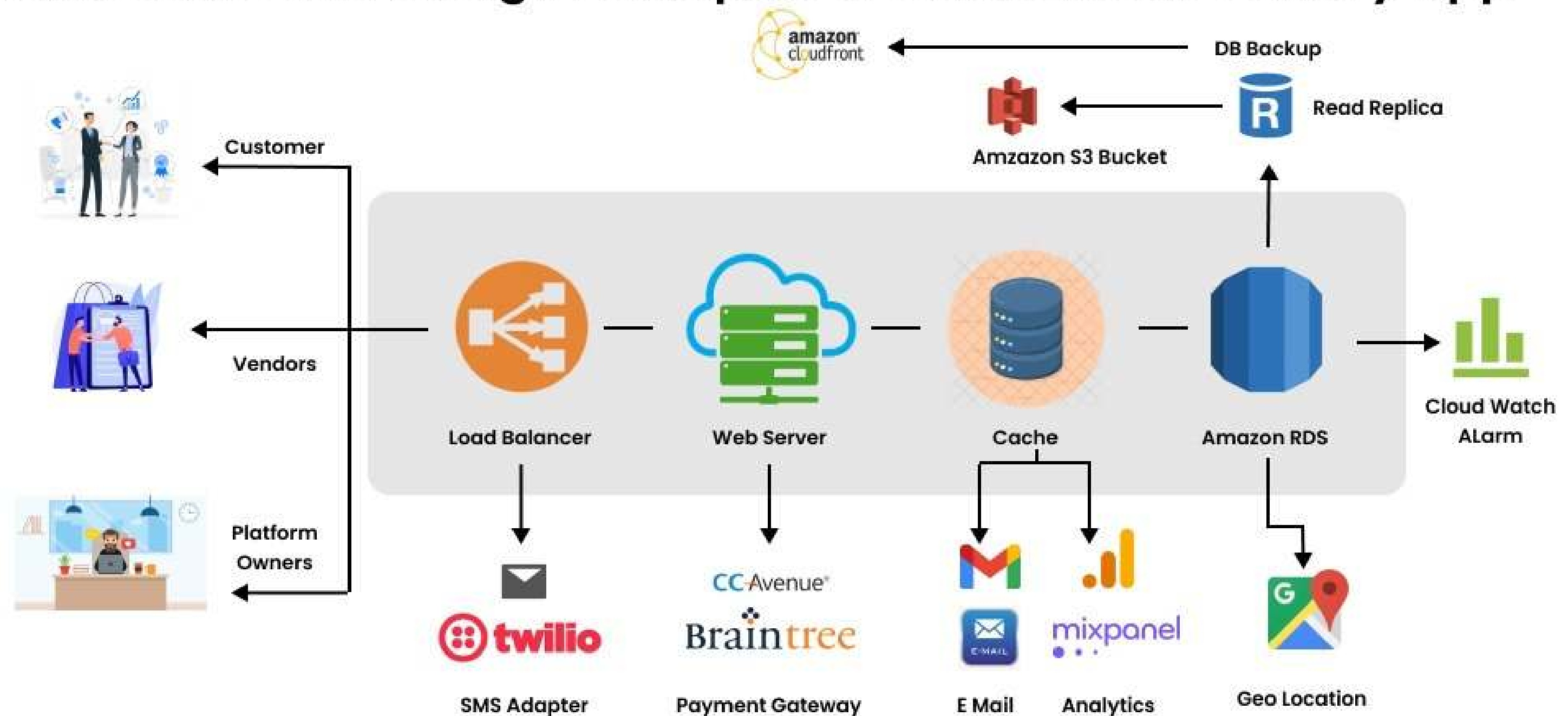
- Resistance from owners while onboarding them
- Integration of backend and recommendation modal can be a big task.
- Students wishing to Socialize may not make use of our application.

Risk Management Framework - Risks and Mitigation

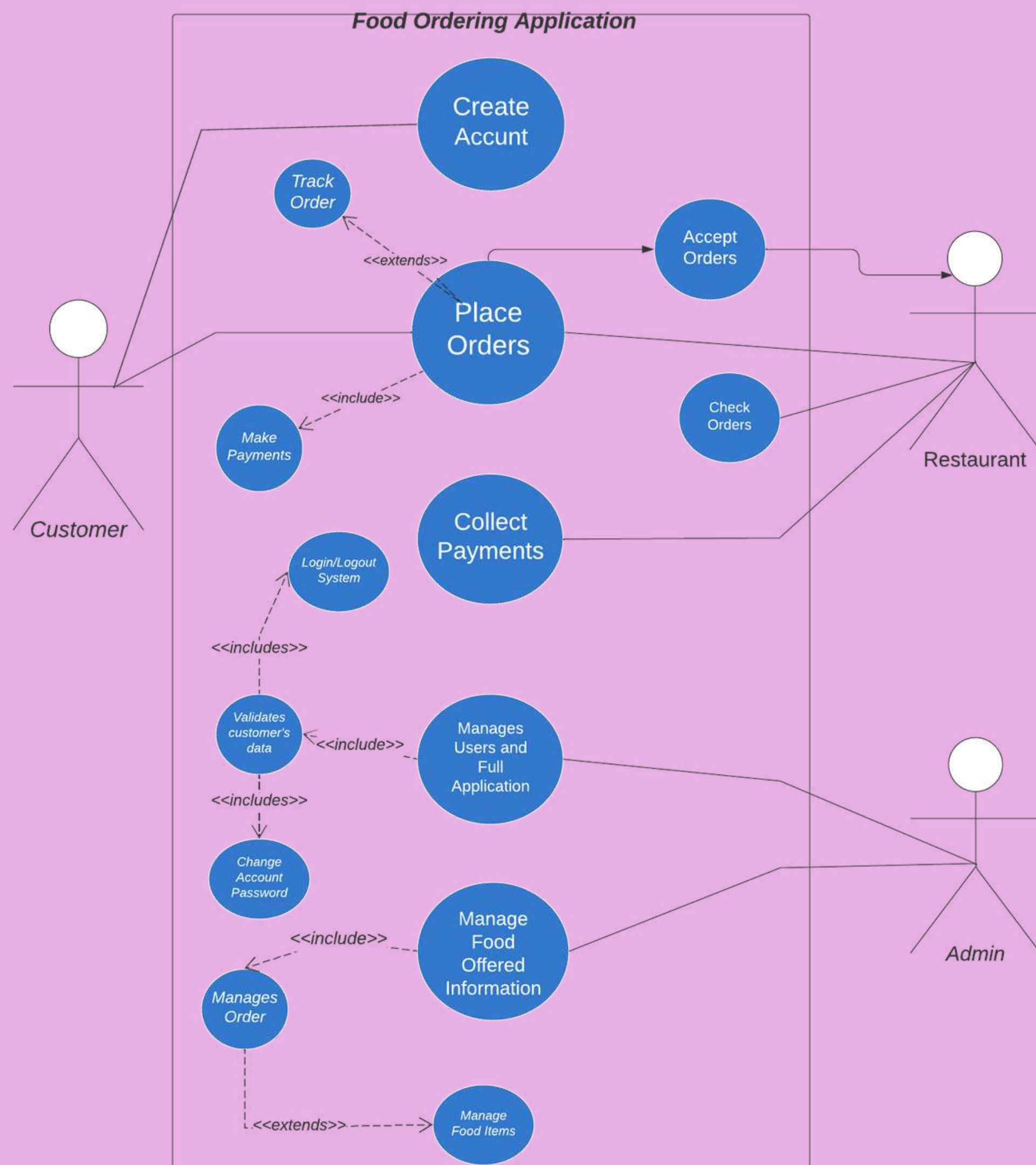
Response	Strategy	Examples
Avoid	Server may not be able to handle numerous orders simultaneously or there may be server related issues.	<ul style="list-style-type: none">• Employing Data Management Engineers.• Implementing a newer backend model.
Transfer	Students wishing to socialize might not want to use the application, eventually creating a jammed place. SRM Management can handle this situation to promote an online platform.	<ul style="list-style-type: none">• Helps in implementing social distancing.• Smoother Workflow will be insured.
Mitigate	Customer Care services might not be effective. The customer can be contacted either through a phone call or a physical meeting.	<ul style="list-style-type: none">• Increases sales.• Time Management.• Reduces Payment Issues.• Order related issues.
Accept	The restaurant owners are not willing to join our application and move to an online platform.	<ul style="list-style-type: none">• Not a large Audience.• ML Model might be accepted by the eateries.

SYSTEM ARCHITECTURE

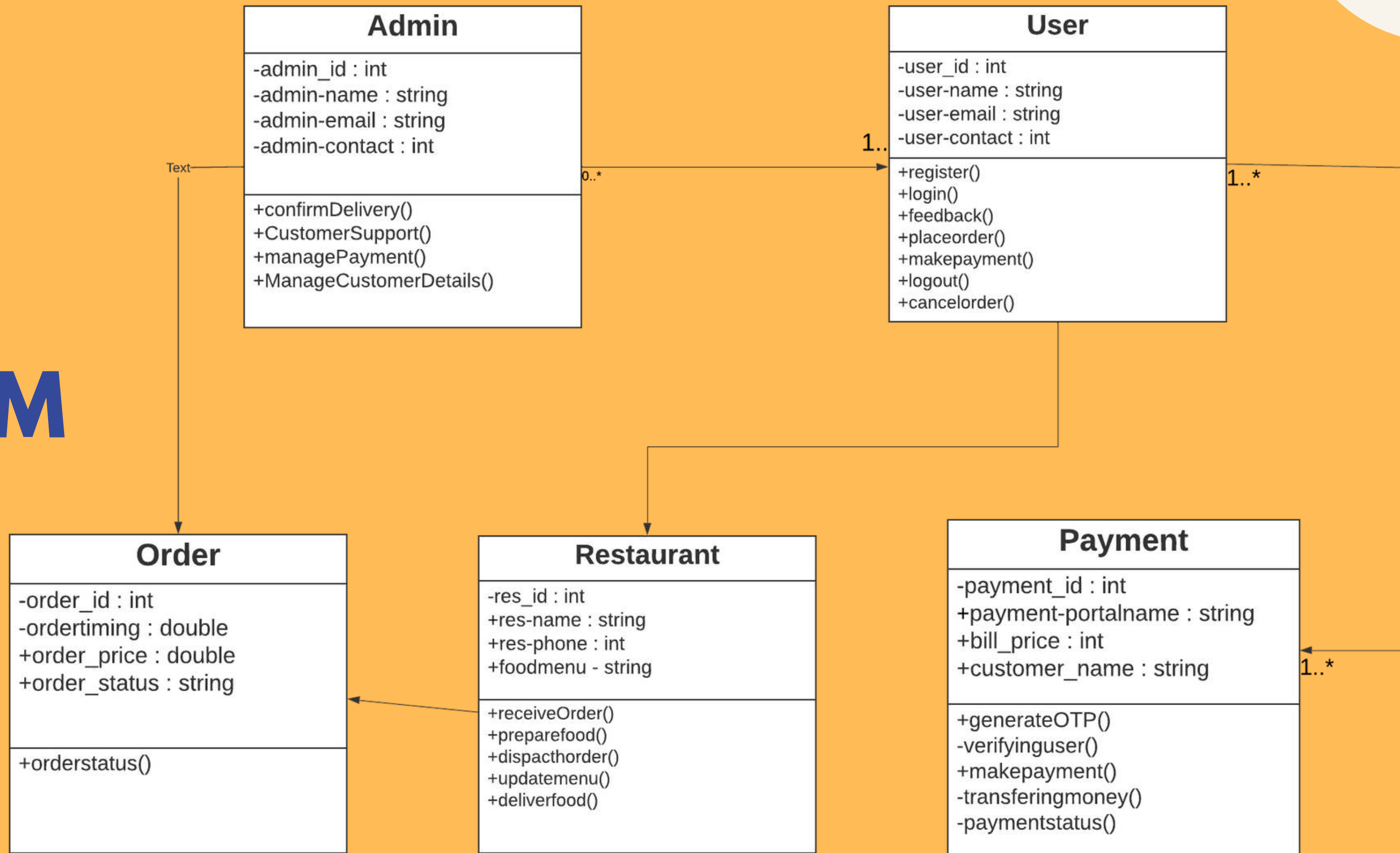
Architecture and Design Principles of Online Food Delivery App



USE CASE DIAGRAM

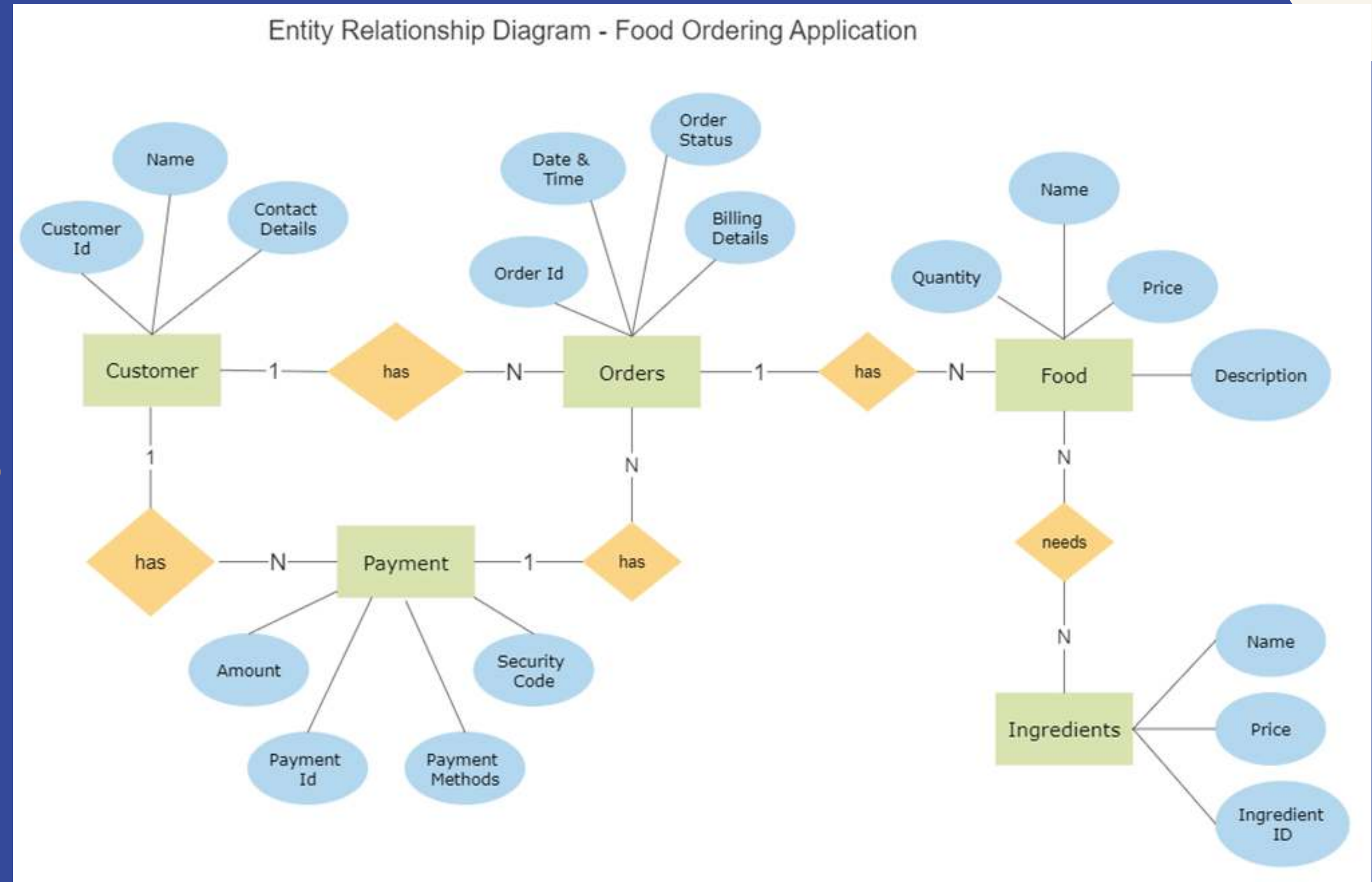


CLASS DIAGRAM



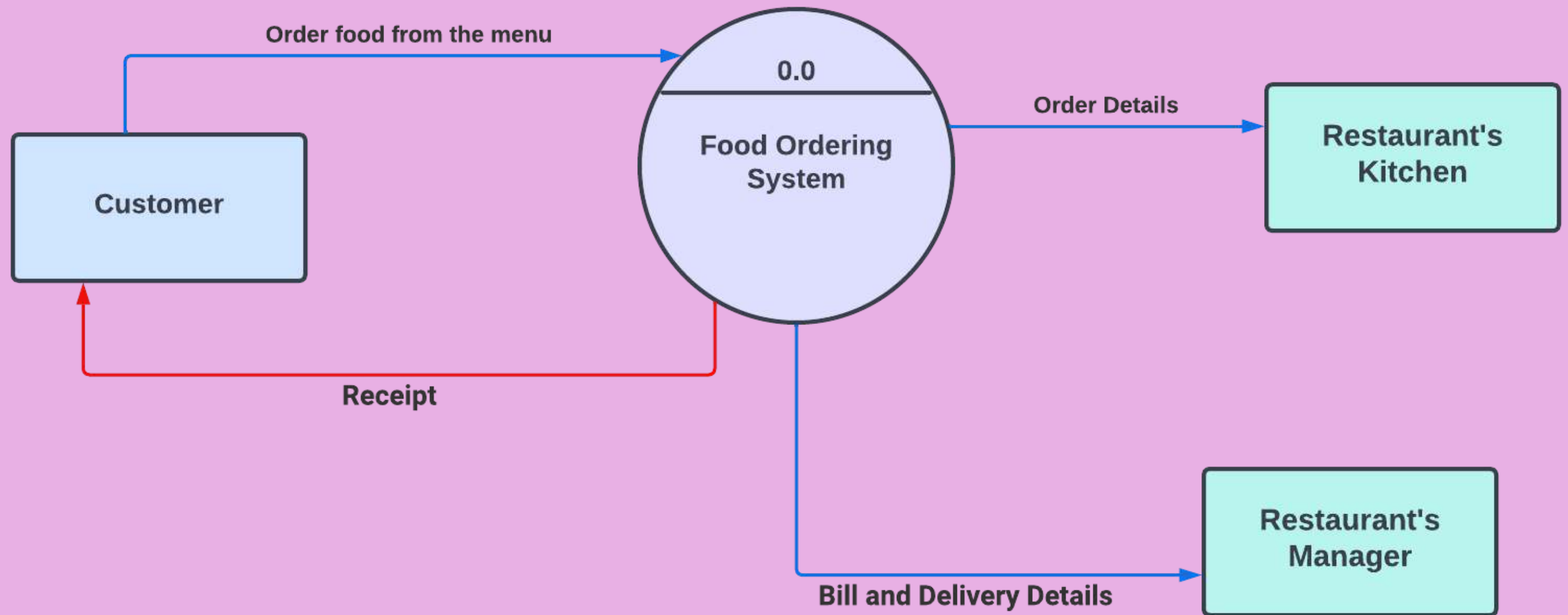
Exp - 7

Entity Relationship Diagram

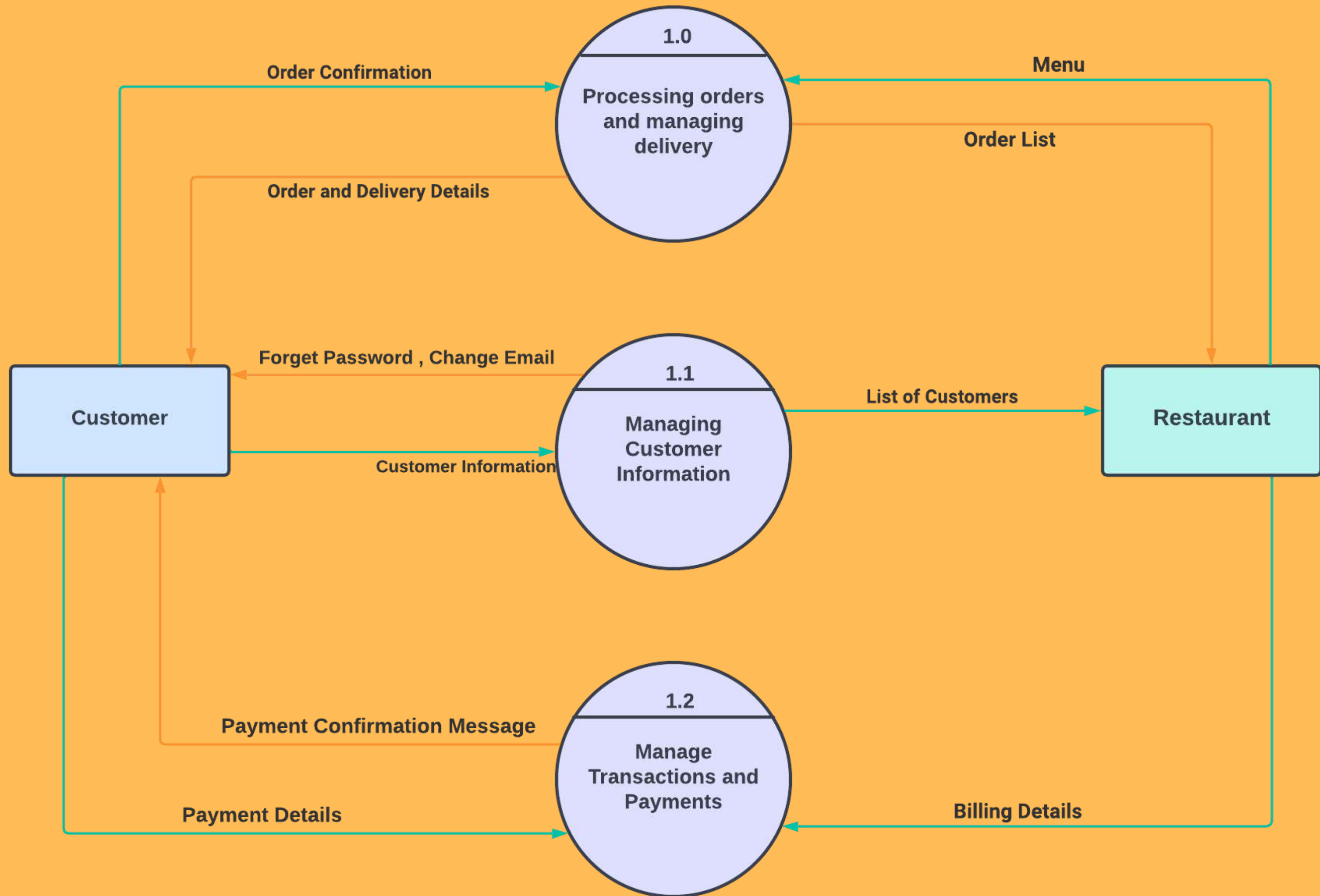


Exp 8 - Data Flow Diagram

Level 0

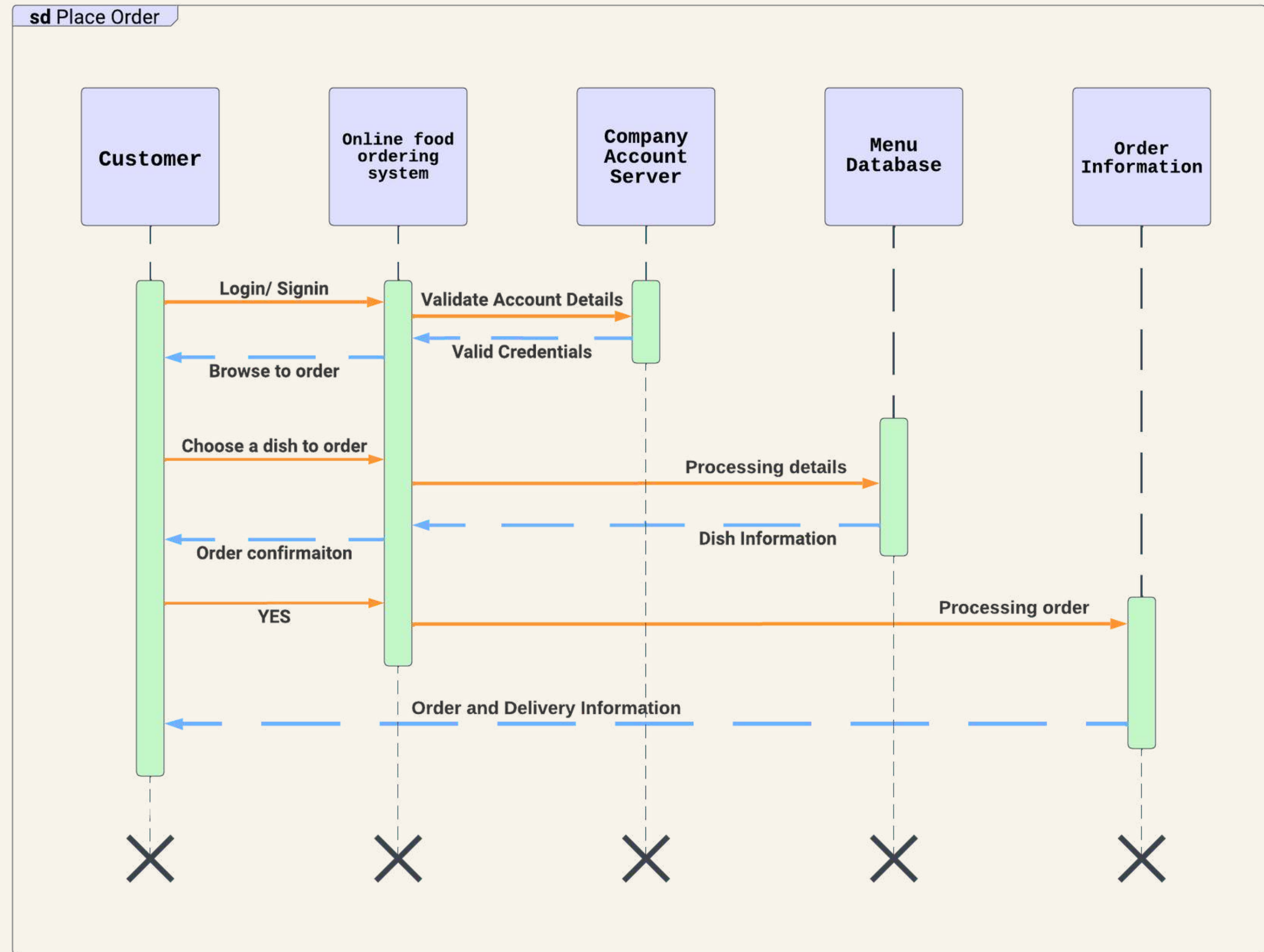


Level 1

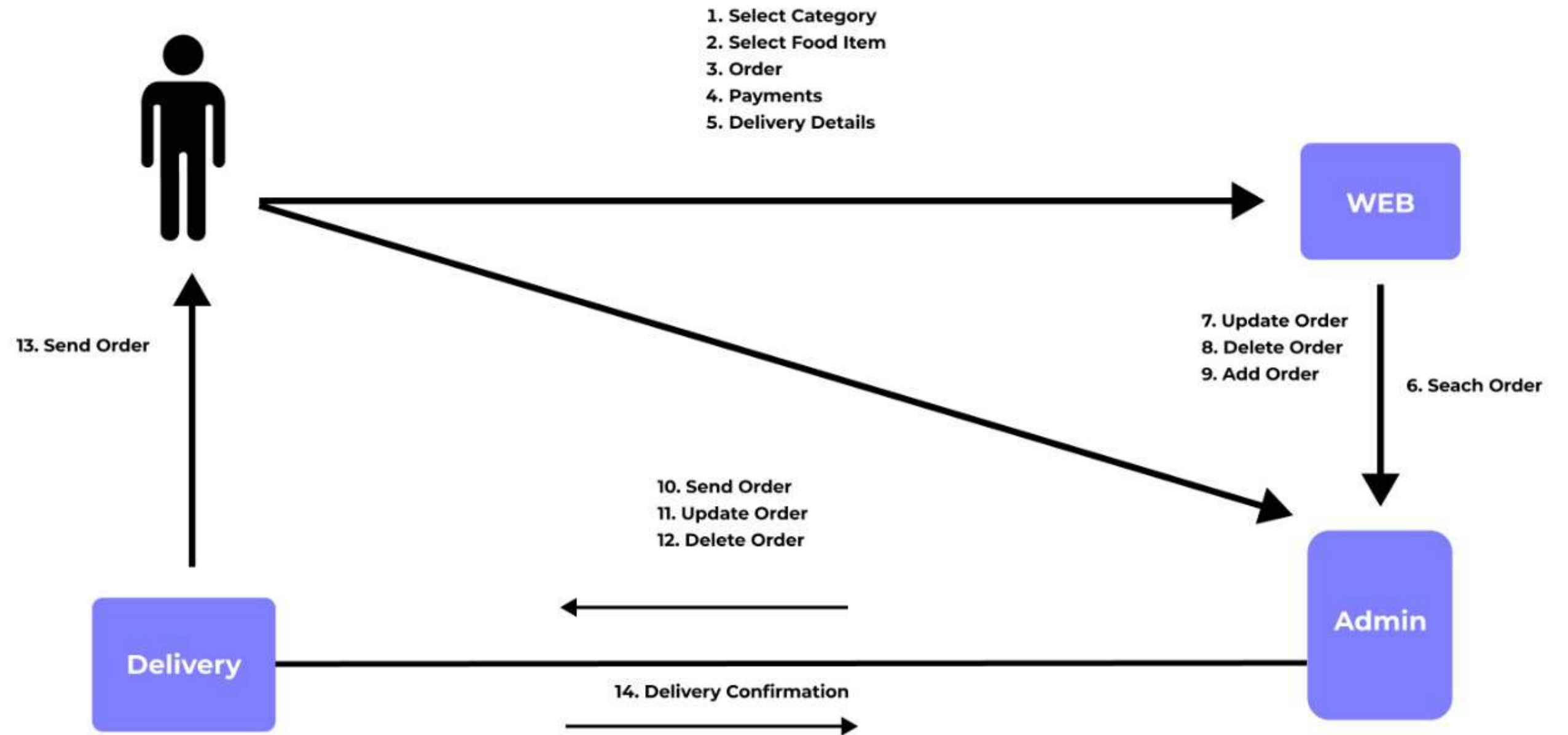


Exp 9

Sequence Diagram



Collaboration Diagram



EXP - 10

Developing a Testing Framework

Scope of Testing

The scope of software testing is to find bugs or defects at any stage of the software life cycle. It explains the product's functionality that should be tested and focused upon and the kinds of bugs and errors that might be encountered providing information about the quality of a particular product.

Objective of Testing

- To find any defects or bugs that may have been created when the software was being developed.
- To ensure that the end product meets the customer requirements.
- To provide customers with a quality product.
- To lower the likelihood of the risk occurring .

Category	Methodology	Tools Required
User Authentication	Manual	Security testing applications such as ImmuniWeb, and ZAP
Provide access to Customers and Restaurants	Manual	Mobile Usability testing tools such as Solidify.
Verification of Place order functionality	Manual	Application and database
Installing and Uninstalling the application	Manual	Application stores such as Google Play Store, App Store
Notifications and Error messages appear when required.	Manual	Smartphone using the application

Types of Testing, Methodology, Tools

FUNCTIONAL

Types of Testing, Methodology, Tools

NON-FUNCTIONAL

Category	Methodology	Tools Required
Testing application across various configurations(OS)	Manual	Wide range of devices and operating systems (iOS, Android etc)
Testing application across various Networks	Manual	Devices with networks such as LTE, CDMA, UMTS
Testing application cross various screen dimensions	Manual	Screenlify,
Validating UX Test Cases	Manual	A smartphone with wide screen
Test Automation	automated	Testing software such as Appium

EXP-11 TEST CASES

Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1	Verify User Authentication Interface	All the buttons, images, text boxes should be aligned properly.	Input fields and buttons are tested	UI should be accurate	UI was accurate	Pass	success
2	Verification of User's email address	Accept Valid Email ID	Email address should be in the correct format.	Error messages is displayed if email is invalid.	Email address format was validated.	Pass	success
3	Successful authorization with correct credentials.	Successful login by the user.	Verification of correct credentials.	User successfully logged in	User was able to login in successfully	Pass	success
4	Unsuccessful authorization with correct credentials.	Unsuccessful login by the user.	Verification of correct credentials.	Error message should be displayed after verification failed	Verification failed. Error message shown	Pass	success
5	Verify the login page for both, when the field is blank and Submit button is clicked.	Unsuccessful login by the user.	Submit button should be disabled	Error message should be displayed	Error message shown	Pass	success

EXP-11 TEST CASES

Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1	Login Page Validation	Verify if the font, text color, and color coding of the Login page is as per the standard.	Check the design of each and every element against the UI guidelines	The UI should be perfectly in accordance with UI guidelines.	The UI is perfectly in accordance with UI guidelines.	Pass	Success
2	Login Page Validation	Verify if User can use a custom profile pic	Check if functionality is added or not	The functionality has been added	The functionality is missing	Failed	The functionality should be added
3	Login Page Validation	Verify if 2 step login process is available for extra security	Check if functionality is added or not	The functionality should be ideally included	The functionality is missing	Failed	The functionality should be incorporated
4	Signup Page Validation	Verify if the font, text color, and color coding	Check the design of each and every	The UI should be perfectly in accordance	The UI is perfectly in accordance	Pass	Success

EXP-12 CURRENT STATE OF TESTING

Category	Progress Against Plan	Status
Functional Testing	Green / Amber / Red	Not-Started / In-Progress / Completed
Login/Signup Page	Green	Completed
UI of the application	Green	Completed
Installing and Uninstalling the application	Green	Completed
Updating the application	Amber	In-Progress
Validating User experience such as notifications, correct error messages	Amber	In-Progress
Non-Functional Testing		
Performance	Amber	In-Progress
Adaptation to various networks	Green	Completed

Present Obstacles

- Loading Time of the Application
- UX testing is not up to the mark

Functional	Test Case Coverage (%)	Status
Module ID	30%	Not-Started / In-Progress / Completed
Module 1 (User Authentication)	100%	Completed
Module 2 (Database Integration)	80%	In-Progress
Module 3 (server testing)	30%	In-Progress

The Team

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