

UTA MARKETPLACE

Market Place for students of The University of Texas, Arlington

CSE-5324-003

SOFTWARE ENGINEERING 1 ANALYSIS, DESIGN, TESTING

Group Name: SCRUM

Group 14

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Team Members:

Manali Gandhi: 1002084355

Gaurav Taneja: 1001955801

Divya Darshi: 1002090905

Akash Upadhyay: 1001957955

Project Summary

The purpose of the Marketplace system is to take advantage of the internet to improve the private way where millions of items can be traded daily. The Online Marketplace provides a platform where registered users can buy and sell products or items online. The system has four types of users: Admin, Buyer, Seller, and Visitor. Sellers can upload any item on the site to sell it. The administration is responsible for authenticating users and products.

Some important key features of UTA Marketplace are as follows:

1. **Sign up:** The first step as a user is to sign up for the application. This page will ask for certain basic information such as name, phone number, UTA email ID and UTA ID, password, etc.
2. **Login:** Once the user's email is verified, they can log in to the application to buy or sell. This functionality solves the issue of unauthorized users.
3. **Logout:** The app will allow the user to log out from the system to clear the user's session.
4. **Forgot password:** The user can click on the forget password link on the login page to get a link to their registered mail.
5. **Home/View Items:** This feature will help the users to view the items.
6. **Purchase Items:** This feature will help the users to buy items.
7. **Sell Items:** This feature will help the users to sell the items.
8. **Favorite:** This feature will help the user to add items to the favorite list which will be maintained in the application
9. **GPS:** This feature helps in knowing the location of the user. This will aid in either picking up or delivering the item to the user.
10. **Chat:** This feature will provide users to interact with each other. This will enable users to get more information about the product and even negotiate the price of the item. The user can verbally come to a contract about buying the product.

REQUIREMENTS

RQRD ID	REQUIREMENT SYSTEM
R1	The system shall allow users to register themselves.
R2	The system shall allow authenticated users to log in after registration.
R3	The system shall allow authenticated users to log out after a successful login session.
R4	The system shall allow the user to reset the password if forgotten.
R5	The system shall allow the users to view the items.
R6	The system shall allow the users to buy the items.
R7	The system shall allow the users to sell the items.
R8	The system shall offer users to add items to their favorite list.
R9	The system shall allow the users to view the location of the items.
R10	The system shall allow the user to chat with sellers and buyers.

Functional Requirements:

Administration Module

- Admin can provide a username, email, password, and admin account Created.
- After logging in, there is a dashboard where admins can see the number of customers Register the number of products sold, and the number of orders placed.
- Administrators can add/delete/view/edit products.
- Administrators can view/edit/delete customer data.
- Administrators can view/delete orders.
- Administrators can change the status of an order (order is pending, confirmed, in preparation for delivery, or delivered)

Users Module

- Users can view/search products after logging in.
- Users can also sell their products.
- Users can also add/remove products to the cart.
- When a user tries to purchase a product, they must log into the system.
- You can place an order after creating an account and logging into the system.
- The payment is successful when the user clicks the Pay button.
- Users can view order details by clicking the Orders button.
- Users can see the status of each order (pending, confirmed, shipped).

Non-Functional Requirements:

Specifies the quality features of the software system. they judge software systems based on their responsiveness, usability, security, portability, and other non-functional criteria Critical to the success of any software system.

- Availability:
Systems need to stay up and running every day, everywhere.
- Accuracy:
The system needs to be fine-tuned to ensure more accurate results and calculations.
- Usability:
The system should provide a user-friendly interface and tooltips for improvement Respond effectively and independently.

- **Security:**
The system should be able to provide security against external injection multi-layer security systems. Also, the implementation of the user login function ensures that the system is Protected from unauthorized persons.
- **System Performance:**
Response times are particularly good for the work given. the system Support multi-user environments.
- **System Reliability:**
The system is very reliable and produces all updated Information in the correct order. Data validation and verification are done at every stage of the activity.

Interface Requirements:

This section describes the necessary hardware components and software requirements. Effective and efficient operation of the system.

Hardware Interfaces:

Laptop

- Core i5 or i7
- Hard Disk
- 1TB Minimum 4GB RAM

Software Interfaces:

- Windows or Mac
- Android studio
- ADT Bundle XAMPP Server (Apache & MySQL)
- Java Development Kit

USE CASE LIST

USE CASE NUMBER	USE CASE NAME
UC1	REGISTER
UC2	LOGIN
UC3	LOGOUT
UC4	FORGET PASSWORD
UC5	HOME/VIEW ITEMS
UC6	PURCHASE ITEMS
UC7	SELL ITEMS
UC8	FAVOURITE
UC9	GPS
UC10	CHAT

HIGH-LEVEL USE CASE

UC 1: Register

- TUCBW the new user clicking on Register to create an account.
- TUCEW user creating an account to store items in the to-do list.

UC 2: Login

- TUCBW the user clicking on Login to login into an existing account.
- TUCEW user logging into the existing account.

UC 3: Logout

- TUCBW the user clicking on Logout to log out from the account.
- TUCEW user logs out from the account.

UC 4: Forget Password

- TUCBW the user clicking on the forget option to reset the password.
- TUCEW user gets a new password to log in.

UC 5: Home/View Items

- TUCBW the user clicking on Home to view items.
- TUCEW user viewing new items.

UC 6: Purchase Items

- TUCBW the user clicks on Purchase items.
- TUCEW users buy the items.

UC 7: Sell Items

- TUCBW the user clicks on Sell items.
- TUCEW users sell the items.

UC 8: Favorite

- TUCBW the user clicks on Favorite.
- TUCEW user gets to view items on their favorite.

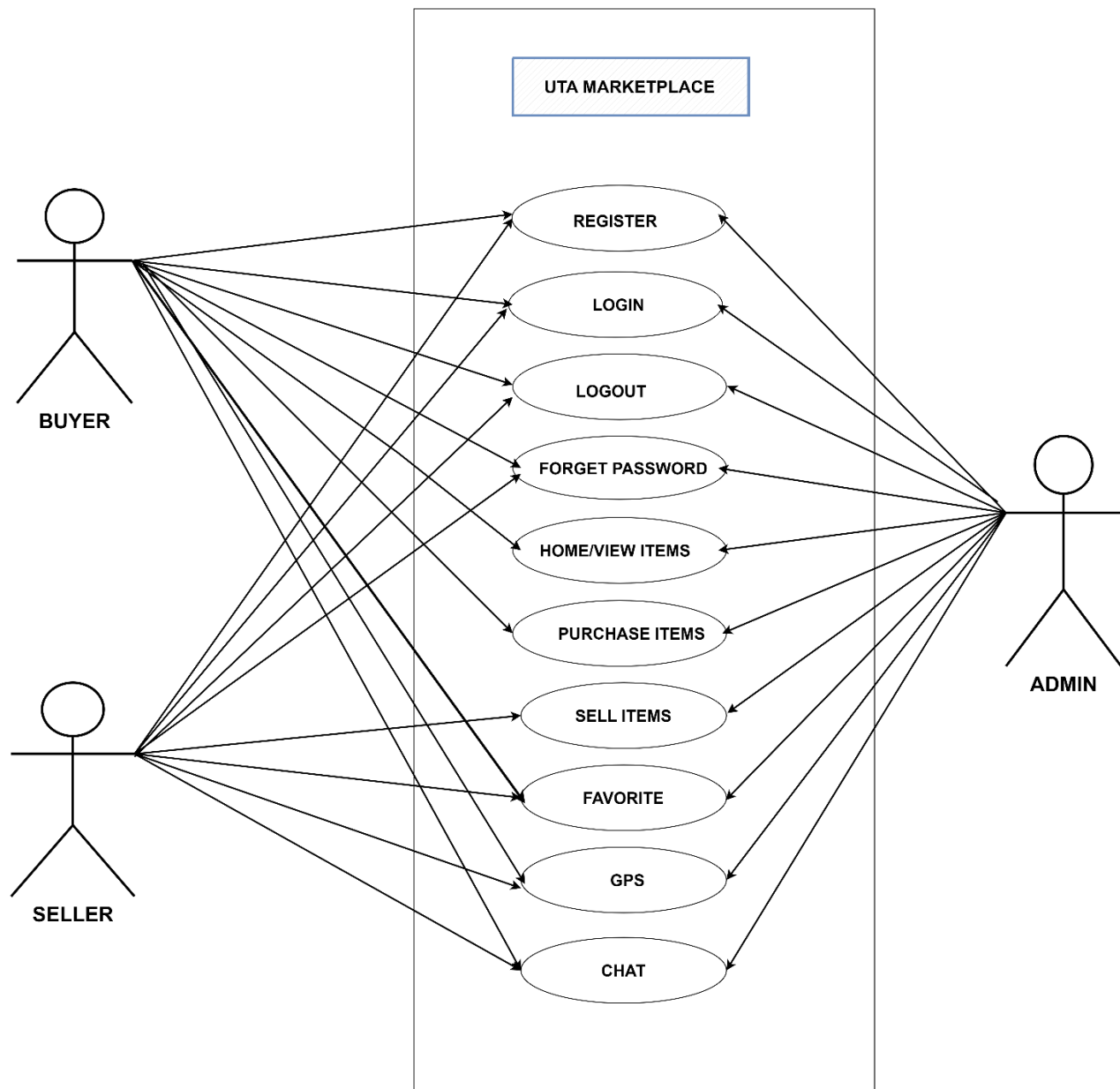
UC 9: GPS

- TUCBW the user clicks on a GPS.
- TUCEW user gets to view the location of items.

UC 10: Chat

- TUCBW the user clicks on chat.
- TUCEW the buyer and seller chat with each other.

USE CASE DIAGRAM



EXPANDED USE CASE

EUC1: REGISTER

UC1: REGISTER	
Pre-Condition: None	
Actor: User	System: UTA MARKETPLACE
	0. System displays login form screen.
1. TUCBW user clicking on the "Sign Up" button.	2. System displays the registration form to the user.
3. The user fills out the registration form and presses submit button.	4. The system displays success if registration is successful or an error message if registration fails for the user.
5. TUCEW user sees the "Successfully Registered" message and gets successfully registered to the application else will see the error message.	
Post Condition: None	

EUC2: LOGIN

UC2: LOGIN	
Pre-Condition: The user must be registered in the application.	
Actor: User	System: UTA MARKETPLACE
	0. System displays the login form screen.
1. TUCBW user fills out the login form and presses the "Login" button.	2. The system displays success if login is successful or an error message if log in fails the user.
3. TUCEW user sees a success message and gets redirected to the home screen if login is successful else will see the error message.	
Post Condition: None	

EUC3: LOGOUT

UC2: LOGOUT	
Pre-Condition: The user must be logged into the application	
Actor: User	System: UTA MARKETPLACE
	0. System displays the homepage.
1. TUCBW user clicks on the Hamburger menu (three horizontal lines) in the toolbar and clicks on the logout button.	2. The system shall end the user's session and return to the login screen with a "Logged out" message.
3. TUCEW user views login screen.	
Post Condition: The user shall see the login page.	

EUC4: FORGET PASSWORD

UC4: FORGET PASSWORD	
Pre-Condition: The user must be registered in the application.	
Actor: User	System: UTA MARKETPLACE
	0. System displays a login page.
1. TUCBW user clicks on the "Click Here" view to go visit the Reset Password screen.	2. System redirects the user to the reset password form screen.
3. The user enters the email address and clicks on Send Code button to receive the code via email.	4. System authenticates the email address, if correct, generates a unique code, and sends it to the user's email. The system now displays fields to enter generated code and new password to the user on the same screen.
5. User shall enter the code received via email and the new password in the fields shown on the Reset Password screen and Submit entries.	6. System verifies the code and displays the message "Password Updated".

5. TUCEW user views the updated password message	
Post Condition: The user shall return to a login screen.	

EUC5: HOME/VIEW

UC5: HOME/VIEW	
Pre-Condition: The user must be logged into the application	
Actor: User	System: UTA MARKETPLACE
	0. The system displays all lists on the homepage
1. TUCBW user clicks on View Items.	2. System displays the item list.
3. TUCEW user views the items list.	
Post-Condition: The user shall view the item list.	

EUC6: PURCHASE ITEMS

UC6: PURCHASE ITEMS	
Pre-Condition: The user must be logged into the application	
Actor: Buyer	System: UTA Marketplace
	0. The system displays a login page
1. The Buyer adds his email and password and clicks on the login button	2. The system verifies the details and redirects the user to the homepage.
3. The buyer explores the item from the homepage and selects any item he wants to buy	4. The system shows the details for a specific item.
5. a) Buyer can click on buy option b) Buyer can click on chat with a seller option	6. a) System will redirect to the checkout page b) System will redirect to the chat page with a specific seller.
Post Condition: Buyer shall buy the items.	

EUC7: SELL ITEMS

UC7: SELL ITEMS	
Pre-Condition: The user must be logged into the application	
Actor: Seller	System: UTA Marketplace
	0.The system displays the login page
1. Seller adds his email and password and clicks on the login button	2. The system verifies the details and redirects the user to the homepage.
3. The seller clicks on add item button	4. The system displays the list of distinct categories of items
5. Seller can choose any category	6. System will redirect the seller to enter the item details.
7. The seller will click on the sell item button	8. The system will add the item to the database and will be available for buyers to buy.
Post Condition: The Seller shall sell the items.	

EUC8: FAVORITE

UC8: FAVORITE	
Pre-Condition: The user must be logged into the application	
Actor: User	System: UTA Marketplace
	0. The system displays all lists on the homepage
1.TUCBW the user clicks on Favorite	2. System display the favorite items
3. TUCEW user gets to view items on their favorite.	
Post Condition: The user shall see the favorite page.	

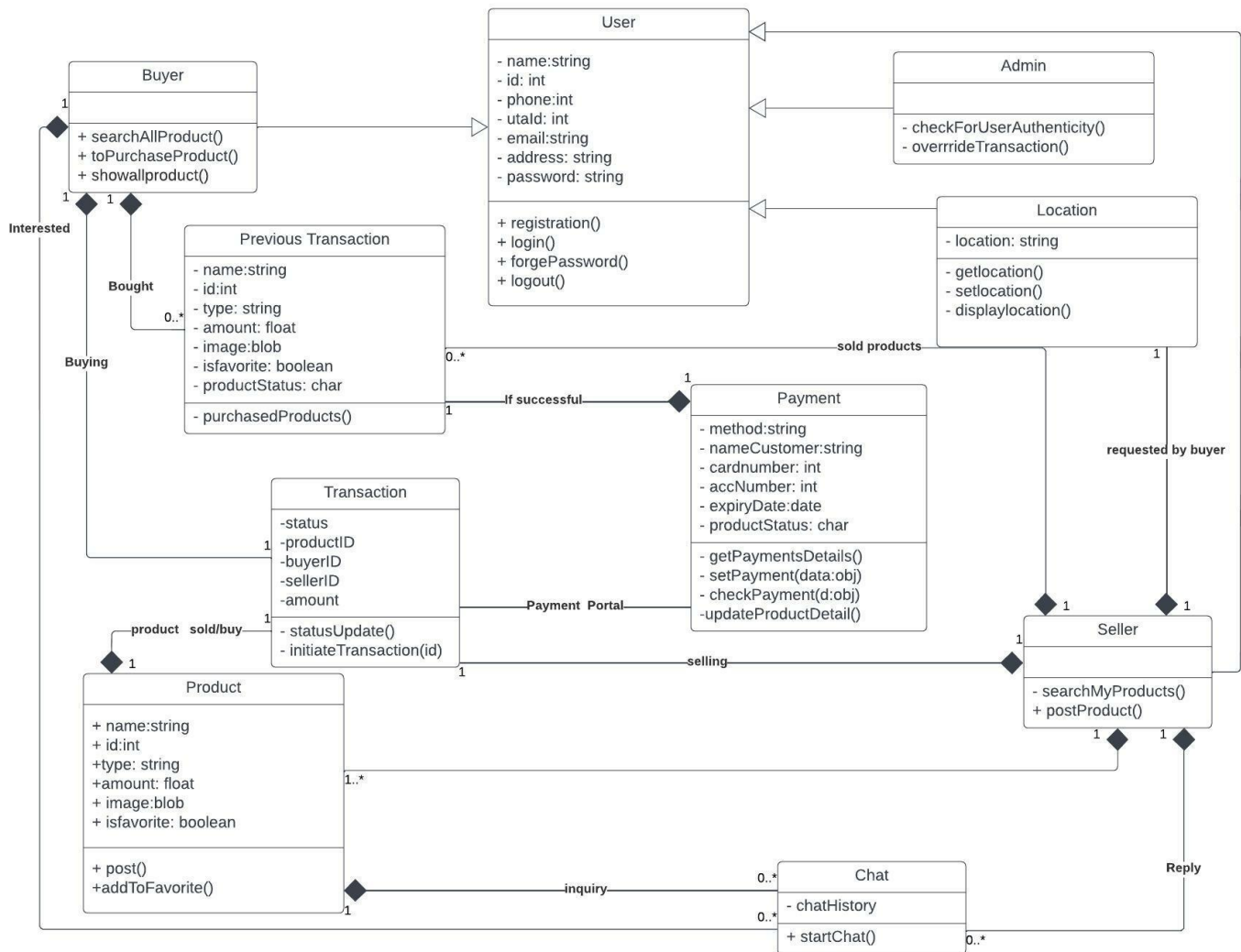
EUC9: GPS

UC9: GPS	
Pre-Condition: The user must be logged into the application	
Actor: User	System: UTA MARKETPLACE
	0. The system displays all lists on the homepage
1. TUCBW the user clicks on a GPS.	2. System displays the location of items
3. TUCEW user gets to view the location of items.	
Post Condition: The user shall see the location of items.	

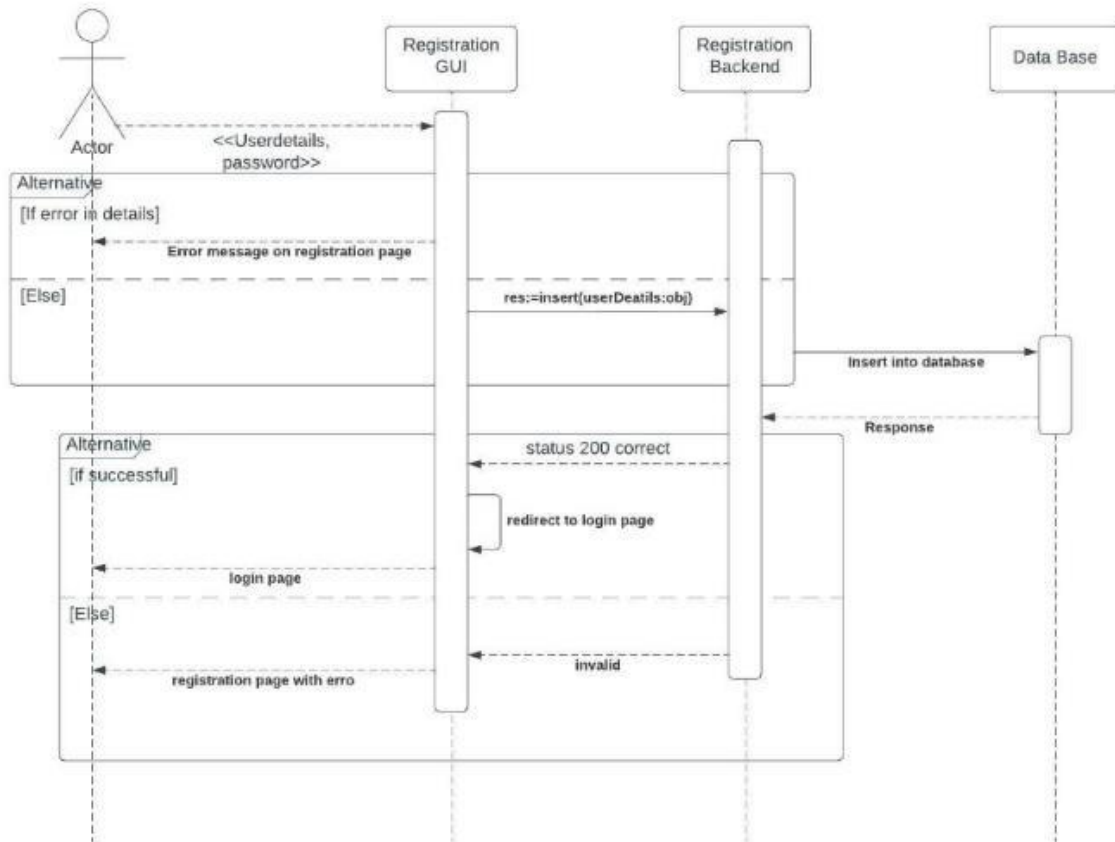
EUC10: CHAT

UC10: CHAT	
Pre-Condition: The user must be logged into the application	
Actor: User	System: UTA MARKETPLACE
	0. The system displays all lists on the homepage
1. TUCBW the user clicks on chat.	2. System displays the chat box
3. TUCEW user chats with Seller/Buyer.	
Post Condition: The buyer and seller chat with each other.	

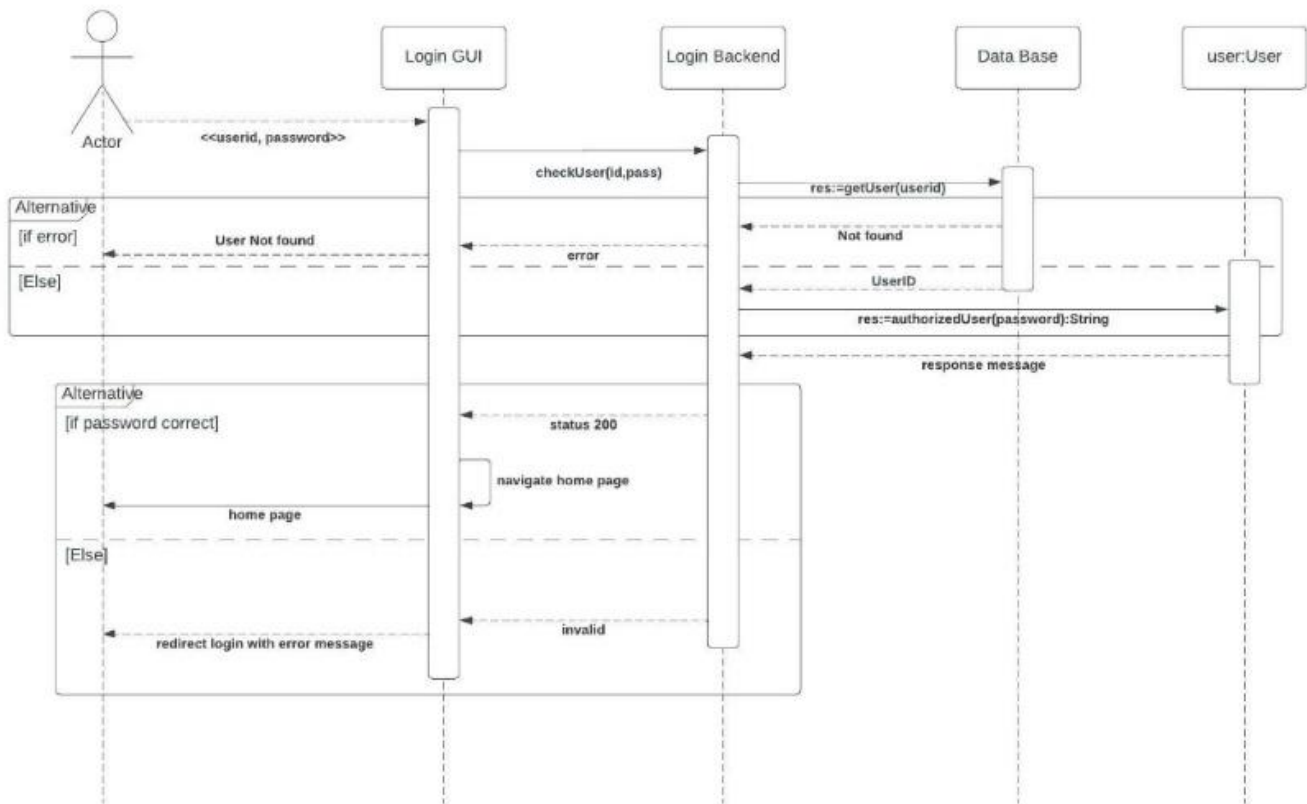
DOMAIN MODEL



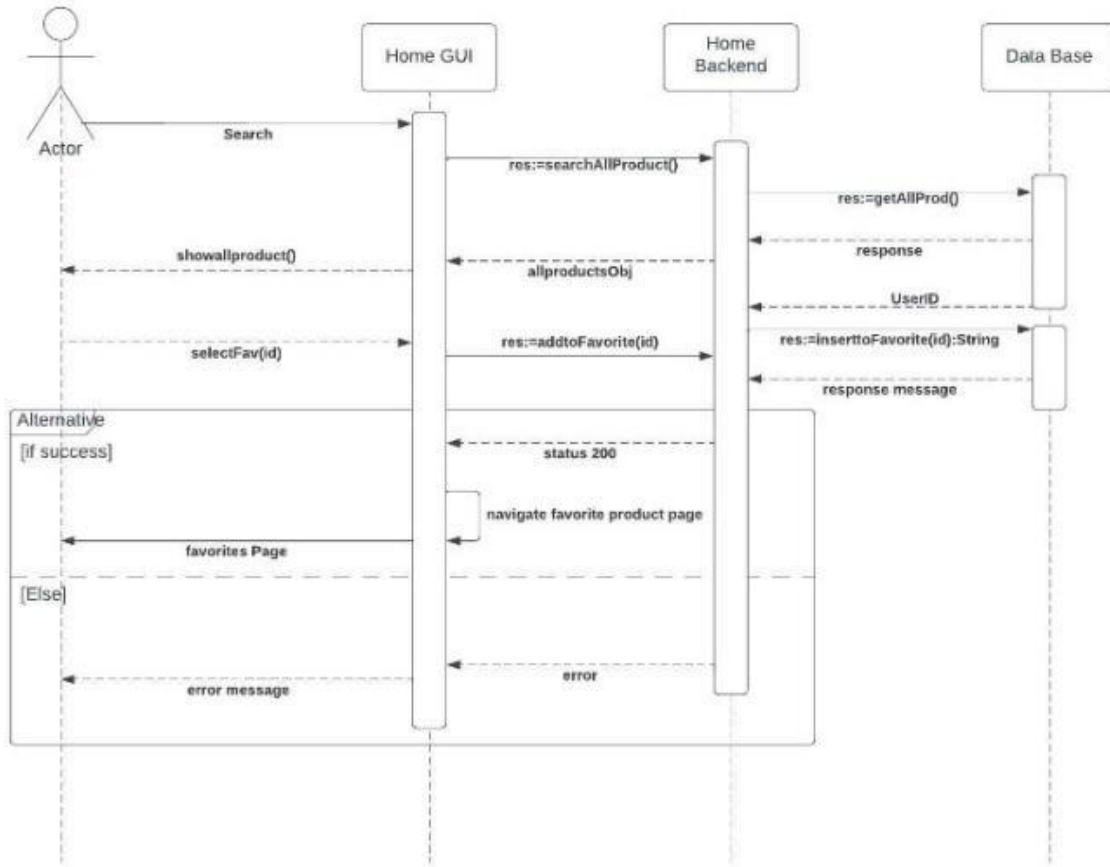
SEQUENCE DIAGRAM



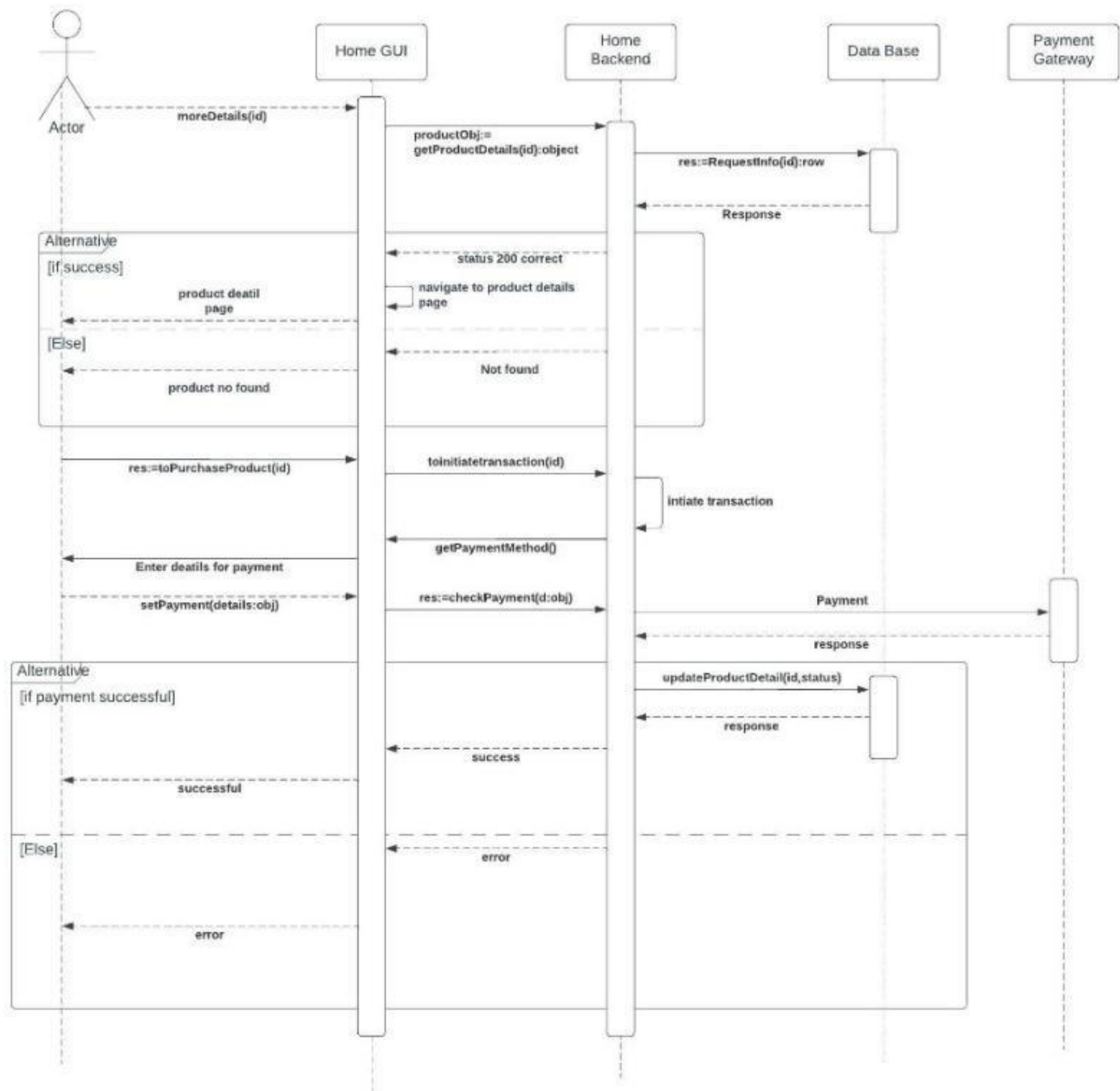
Sequence diagram for Registration scenario



Sequence diagram for Login scenario



search and favorite page sequence diagram



Sequence diagram to buy

INCREMENT MATRIX - Project Planning with Use Cases

	Priority Weight	Effort (Person-Week)	Depend On	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
UC1	5	8	None	X	X								
UC2	5	5	UC1			X	X						
UC3	3	5	UC2			X	X						
UC4	2	7	UC1				X	X	X				
UC5	4	4	UC2				X	X	X				
UC6	5	4	UC2					X	X	X			
UC7	3	3	UC2					X	X				
UC8	2	1	UC1, UC5						X	X	X		
UC9	1	7	None								X	X	
UC10	1	8	UC2									X	X

RUCTM – Requirements Use Case Traceability Matrix

Requirements	Priority	UC 1	UC 2	UC 3	UC 4	UC 5	UC 6	UC 7	UC 8	UC 9	UC 10
R1	5	X	X			X	X	X		X	
R2	5	X	X	X	X				X		X
R3	2	X	X	X			X		X		X
R4	3	X	X		X	X			X		
R5	2	X		X	X			X	X		
R6	5		X		X		X				X
R7	4	X		X		X	X			X	
R8	3	X					X	X			
R9	1		X		X	X		X		X	
R10	1			X		X		X			X
UC Priority		5	5	3	2	4	5	3	2	1	1

Team Size – 4

Reasons for Dependency:

UC1 – This is the solo Use Case with no dependency

UC2 – Dependent on UC1 as Registration is necessary for logging in to the application

UC3 – Dependent on UC2 as the user needs to be logged in to the application

UC4 – Dependent on UC1 as the user will set a password during registration and the same information will then be used to verify his credentials upon clicking Forgot Password

UC5 – Dependent on UC2 as to get to the home page of the application a user needs to be logged in

UC6 – To purchase an item through our application, the user will need to log in which in turn makes it dependent on UC2

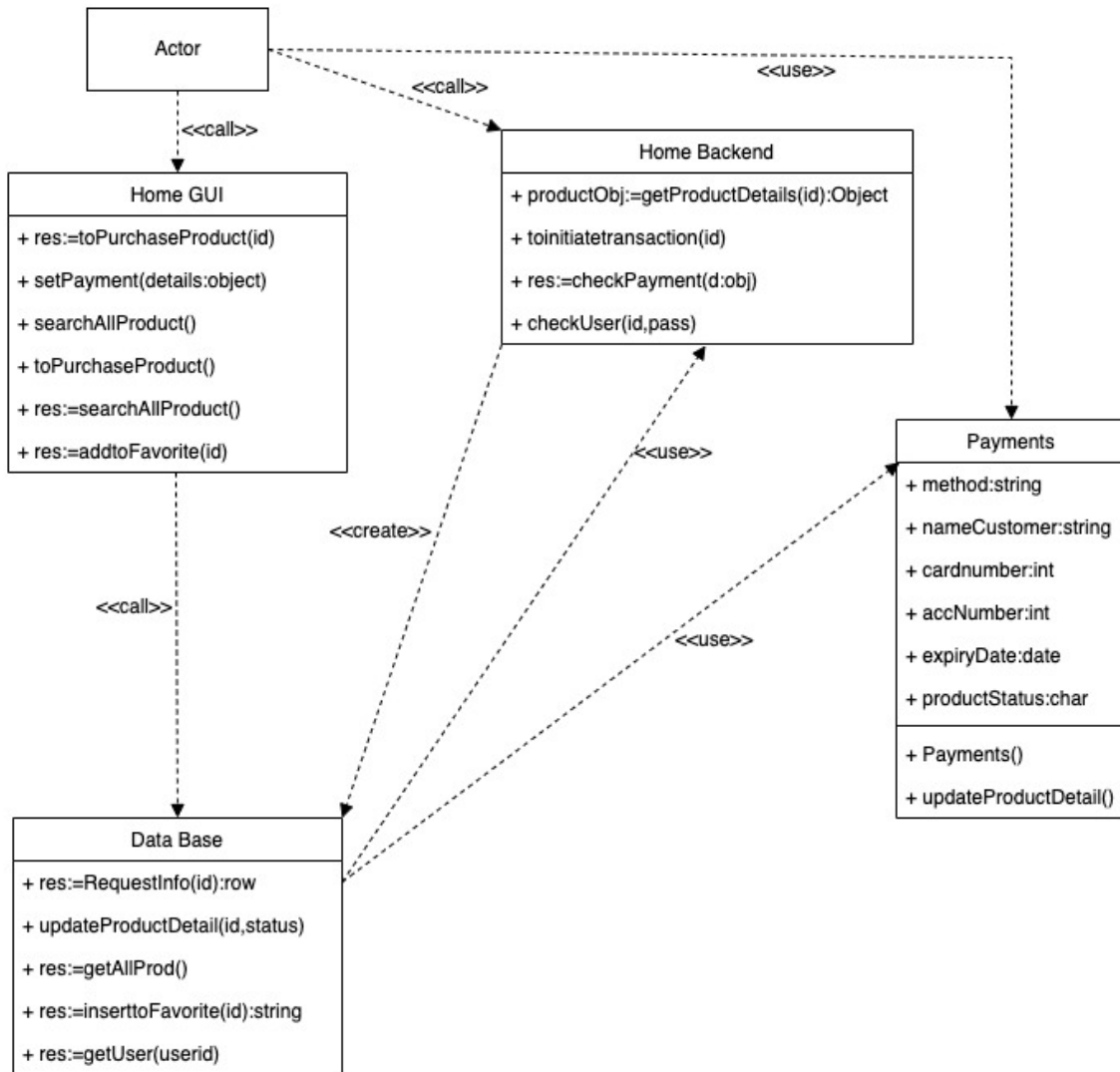
UC7 – For selling an item, the user will have to be logged in to our application. Hence dependence on UC2

UC8 – Once logged in, the user can check any item as Favorite from the home page. Therefore, this makes dependence on both UC1 and UC5

UC9 – This is the solo Use Case with no dependency

UC10 – Lastly, to access our Chat feature, a user must be logged in to the application. Thus, dependence on UC2

DESIGN CLASS DIAGRAM



TESTING

Blackbox Testing

Functional Testing

#	Description	Input	Output
1	Test for empty username	Empty username	Please enter valid username
2	Test for invalid username	Invalid username	Please enter valid username
3	Test for valid username	Valid username	Check next
4	Test for empty name	Empty name	Please enter valid name
5	Test for invalid name	Invalid name	Please enter valid name
6	Test for valid name	Valid name	Check next
7	Test for empty mobile number	Empty mobile number	Please enter mobile number
8	Test for invalid mobile number	Invalid mobile number	Please enter correct mobile number
9	Test for valid mobile number	Valid mobile number	Check next
10	Test for empty password	Empty password	Please enter password
11	Test for valid password	Valid password	Please enter valid password
12	Test for confirm password	Confirm password	if password = confirm password then Register successful Redirect to login page

Table-1: Specification of test cases for Register

#	Description	Input	Output
1	Test for empty username	Empty username	Please enter valid username and password
2	Test for invalid username	Invalid username	Please enter valid username and password
3	Test for valid username and empty password	Valid username and empty password	Please enter password
4	Test for valid username and wrong password	Valid username and wrong password	Please enter correct password
5	Test for valid username and correct password	Valid username and correct password	Login successful Redirect to home page

Table-2: Specification of test cases for Login

UNIT TESTING:

We tested the code and unit test phases of the software lifecycle on the basis of objectives:

- Each field entry must function correctly.
- Pages should be opened on redirecting from a specific page.
- There should be no delay in the entry screen, messages, or responses.

Features to be tested

- Verify that the format of entries is correct
- No duplicate entries are allowed
- Every link should take the user to the correct page.

INTEGRATION TESTING:

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

ACCEPTANCE TESTING:

Acceptance testing ensures that the system meets all the functional requirements. So upon testing we found that all the functional requirements are passes and no defects were encountered.

#	Description	Input	Output
1	Test for dynamic list of items on home screen	Open home page	List of items to be sold
2	Test for selecting specific category of item	Select a category	List of items of specific category to be sold

Table-3: Specification of test cases for Home/view items

Decision Table

Conditions	Rule 1	Rule 2	Rule 3	Rule 4
Username (T/F)	F	T	F	T
Password (T/F)	F	F	T	T
Output (E/H)	E	E	E	H
Action				
Homepage				Execute
Login error	Execute	Execute	Execute	
Table-4: Decision table for login				

Legend

- **T - Make sure your login and password are correct.**
- **F - Incorrect login or password**
- **E - An error message appears.**
- **H - The home screen appears.**

USER INTERFACE PROTOTYPES

REGISTER



SIGN-UP



Enter e-mail

Enter Name

Enter Mobile No.

Enter Password

Confirm Password

SIGN-UP

Already a User? Login

LOGIN



Enter e-mail

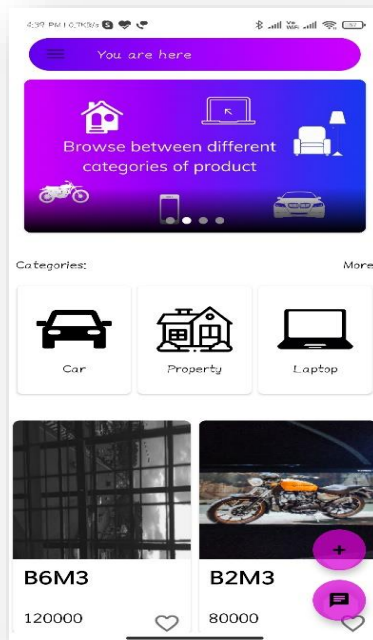
Enter Password

LOGIN

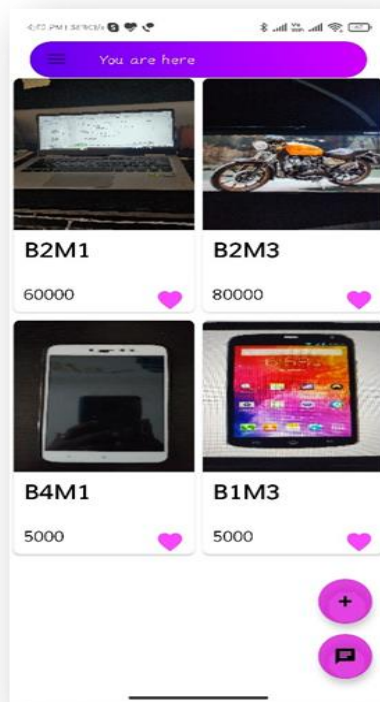
[Forgot Password](#)

[New User? Sign-Up](#)

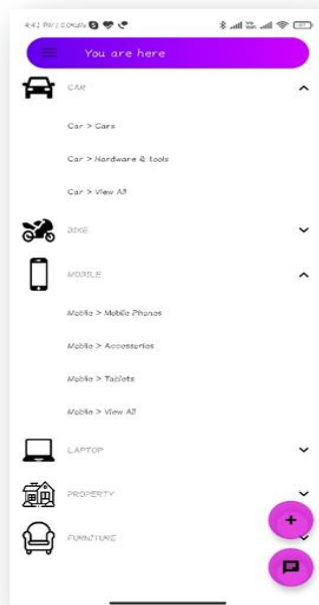
HOME SCREEN



FAVORITE



CATEGORY NAVIGATION



CHANGE PASSWORD NAVIGATION

4:42 PM • 100% battery

5G • 100% battery

You are here

Enter Current Password

Enter New Password

Confirm New Password

CHANGE

+

CHAT BOX

