AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

Department: Computer Science and Engineering

Faculty of Science and Technology(FST)

Fall 2020-21

Section – C

Group: E

Project Title: Medicine Fair (An Online Medical Store)

A Software Engineering project submitted by
TEAM MAGNETO

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The project will be Evaluated for the following Course Outcomes

CO3: Choose appropriate software engineering model in a software development environment		Total Marks
Project Background Analysis (problem, needs, goal, benefits, etc.)	[5Marks]	
Appropriate Process Model Selection and Argumentation with Evidence	[5Marks]	
Completeness, Spelling, Grammar and Organization of the Answer	[5Marks]	
CO4: Explain the roles and their responsibilities in the software project management activities		Total Marks
Content Knowledge (e.g. System Requirements, System Design)	[5Marks]	
Project Role identification and Responsibilities descriptions	[5Marks]	
Presentation Delivery and Defense	[5Marks]	

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PROBLEM BACKGROUND ANALYSIS

BACKGROUND

The application is about shipping the medicines from all over the world and to the people in our country. As a third world developing country, we are facing a lot more challenges than the rest of the world, due to COVID-19 pandemic outbreak. The consumers are preferring to purchase medicine online due to covid-19 lockdown. Governments are taking all essential steps for protecting lives by imposing lockdowns, testing, segregation, and treatment. At the same time also restricting outdoor movement except for supplying and procuring essential goods and services. The role of e-commerce in both wholesale and retail trade is continuously growing. According to industry insiders, e-commerce companies have witnessed about 20-30 per cent spike in orders as customers are avoiding visiting crowded places. In this situation, the utmost need for medication delivered in everyone's doorstep, is more than ever. With this obligatory lockdown, delivered medicine is no more a luxury, it is now an absolute necessity. Our objective is to make sure that nobody in any corner of our country has to be deprived of emergency medical supplies.

There are some medicines which can only be found in a few fixed countries. The current scenario of our country is if one wants a particular medicine from abroad, he must have to go and get the medicine for a limited time period all by himself. By thus a huge amount of not only money but also time and energy is wasted. In this current situation, it is quite impossible.

SOLUTION TO THE PROBLEM

The problem of the crisis of regular and rare unavailable medicine from all over the world can be solved using a simple shipping system to buy medicines online. E-pharmacy as the lifeline for cities under lockdown to fight against the pandemic. So, we are thinking about making an application system in which we will make the rare and expensive medicines available anytime from all over the world. As we want to solve this problem, we need to create a system which will save our time & money and provide medicine as soon as possible. The goal of our application is to make a way that can provide rare medicine available anytime.

So, the benefits of the application are -

- Save a huge amount of time, energy and money.
- Make the wanted unavailable medicines available anytime.

FEATURES AND REQUIREMENTS

Functional Requirements

1. User Registration

1.1 The software will provide an interface for the user to login. Beside the login button there will be an option for new user registration or sign up option.

1.2 When the sign-up option is pressed then the user will be taken to a new page where there will be a form that needs to be filled.

1.3 The user will need to provide his or her official name, a recovery email address, mobile number, address and NID number. As well as 2 unique credentials that are the username and password for that user account.

1.4 Immediately the system will generate random verification code and send it to the user's email address. Users will need to verify that number while logging for the first time.

Priority Level: HIGH
PRECONDITION - Users must have a valid email address and provide authentic personal information.

2. Login Interface

2.1 The software will provide an interface for the user to login to the system using their username and password.

2.2 After a successful login attempt the user will be taken to the home page of his or her account.

2.3 Upon 3 wrong attempts of login the user shall be blocked for any further login attempts for next 30 minutes.

2.4 If the user requests a password change request for the reason forgetting password then random verification code will be generated and sent to the

user's email address by the system to verify the login session and then the system will prompt for the new password.

Priority Level: HIGH
PRECONDITION - User must have a valid user ID and password.

3. Search Medicine

3.1 This feature will allow the user to search the medicine that the user wants to ship.

3.2 After successful login attempts the user can browse the medicine database of the website. If the user needs a specific medicine then they can easily use the search box to find that particular medicine.

3.3 Upon entering the name of the medicine into the search box and pressing the search button the user will be shown that medicine if its available. Otherwise the system will show related medicine that may have the same chemical element as of that medicine.

Priority Level: MEDIUM
PRECONDITION - Users must have a valid name for the medicine.

4. Medicine status (available or not)

4.1 This feature will give an indication to the user whether the medicine in the queue is available or not.

4.2 If the medicine is available then the feature will request the user to provide the quantity. Based on the quantity the user will then show the price and delivery date in the following page. Then it will allow the user to confirm the shipping.

4.3 If the medicine is unavailable then the feature will request the user if the user still wants to order the medicine. After confirming, the feature will request to provide the quantity. Based on the quantity the user will then show the price and delivery date. Then it will allow the user to confirm the shipping.

Priority Level: HIGH
PRECONDITION - Users must have searched for a particular medicine.

5. Payment Gateway

5.1 The user can pay through online banking, credit card, debit card, visa card, bkash, Nagad, rocket or make the payment on cash on delivery. It will simply provide various ways of payment to the user.

5.2 Customers will also need to provide an address where the product will be shipped as well as the receivers contact number.

5.3 Afterwards the customer will get a randomly generated code onto the mobile number in order to verify an authentic order from a valid customer. The customer needs to input it onto the payment gateway interface and verify the order.

Priority Level: HIGH
PRECONDITION - Users must have some items in their cart.

6. Delivery Status

6.1 This feature will allow the user to see the current status of the product to be shipped. It might still be at the inventory or under a regional delivery company.

6.2 The product might be at the courier office form where the customer will need to pick it up as the product may not support home delivery.

6.3 In case of home delivery after the customer enters the customer verification code of the product into the system software then the delivery status will be “delivered”.

Priority Level: MEDIUM
PRECONDITION - An order should be placed earlier.
Cross-references: 7.1 (Customer confirmation code)

7. Customer confirmation code

7.1 This feature will prompt the user to provide a confirmation code for successful purchase. A verification code is placed onto the receipt that the customer needs to enter to his account in order for successful purchase verification.

Priority Level: MEDIUM
PRECONDITION - Users must have ordered some package from the company.

8. Report Issue (Provide Feedback)

8.1 It is an essential as well as a very important feature of any software application. Basically, the developers get direct and authentic feedback from the customers. What issues they are facing, what are the positive sides of the system software, its strengths and flaws or shortcomings. Depending on the feedback the company can decide how to modify or extend the current set of features for better user experience.

Priority Level: HIGH
PRECONDITION - Users must have purchased some items from the company.

Non-Functional Requirements

Usability: A trained user shall be able to submit a complete request for an appointment selected from a vendor catalog and also can order medicine in an average of four and a maximum of six minutes.

Flexibility: A maintenance programmer who has at least six months of experience supporting this application shall be able to make a new copy output available to the feature, including code modifications and testing, with no more than one hour.

Robustness: If the editor fails before the user saves the file, the editor shall be able to recover all changes made in the file being edited up to one minute prior to the failure the next time the same user starts the program.

Performance: Every page shall load within 5 seconds or less over 1 Mbps connection.

Project Requirements

Schedule: We have 18 tasks, but we completed 14 tasks. We are total 4 person work each day to complete.

Risk*:* Risk of our project is whether it can meet customers satisfaction and fulfill the requirements. Also, cost is another risk. We can be sure that our project can be done by the budget. Another thing is uncertain that our project

will be easy to change, adapt and enhance. Last one is schedule risk whether we can finish it within our deadline.

MIND MAP DESIGN

DIAGRAM:

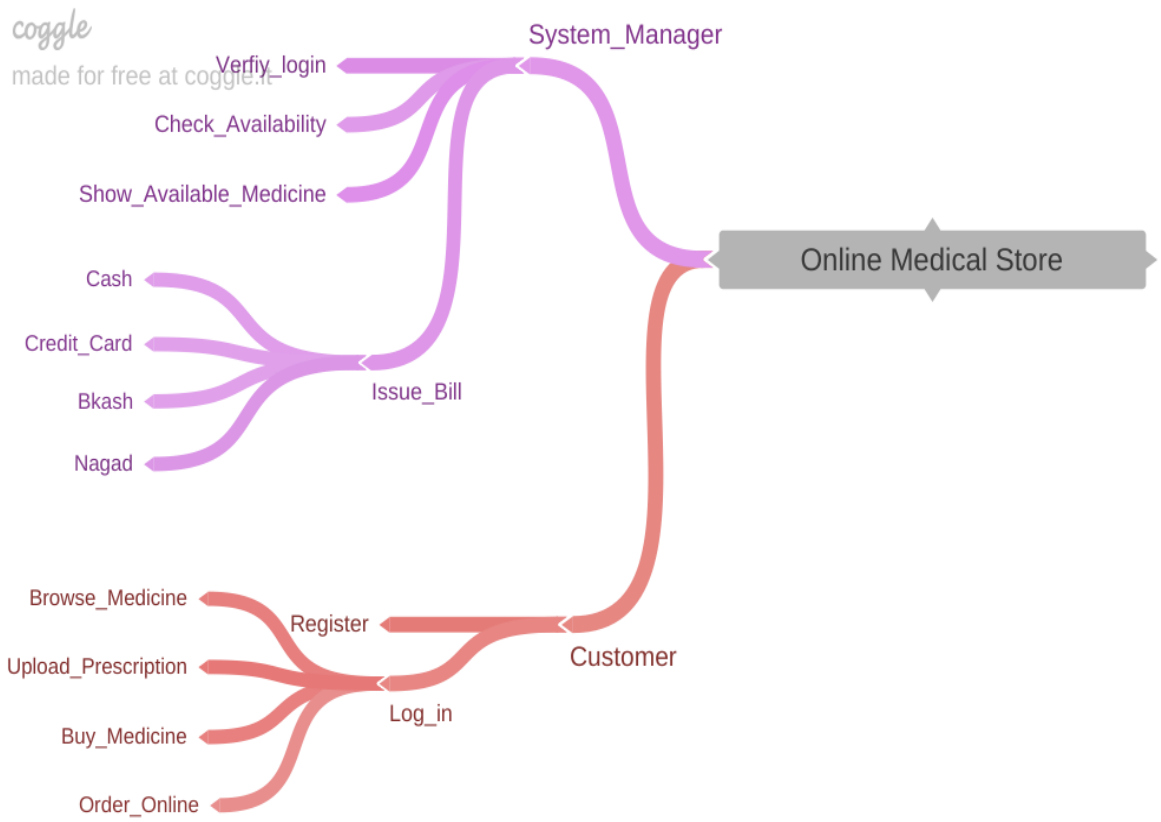


Figure: Mind Map

UML DIAGRAMS

OVERVIEW: The use case starts when the customer opens the software. The system requests the user to log into the system or to register a new account with some basic info. After the user log in to the system, the system requests to set the user name and password. Then the system verifies the information. If the verification succeeded, the customer is granted access to the customer's account panel. The customer can choose to buy medicine from here or other operations available here. The customer enters the desired medicine or uploads the doctor's prescription for processing of purchase. The system checks the amount of the product, whether it's available or not then assigns it to the user's account for check out. The customer selects a particular payment method from the available payment options. After successful payment the products are assigned to the customer for delivery.

USE-CASE DIAGRAM:

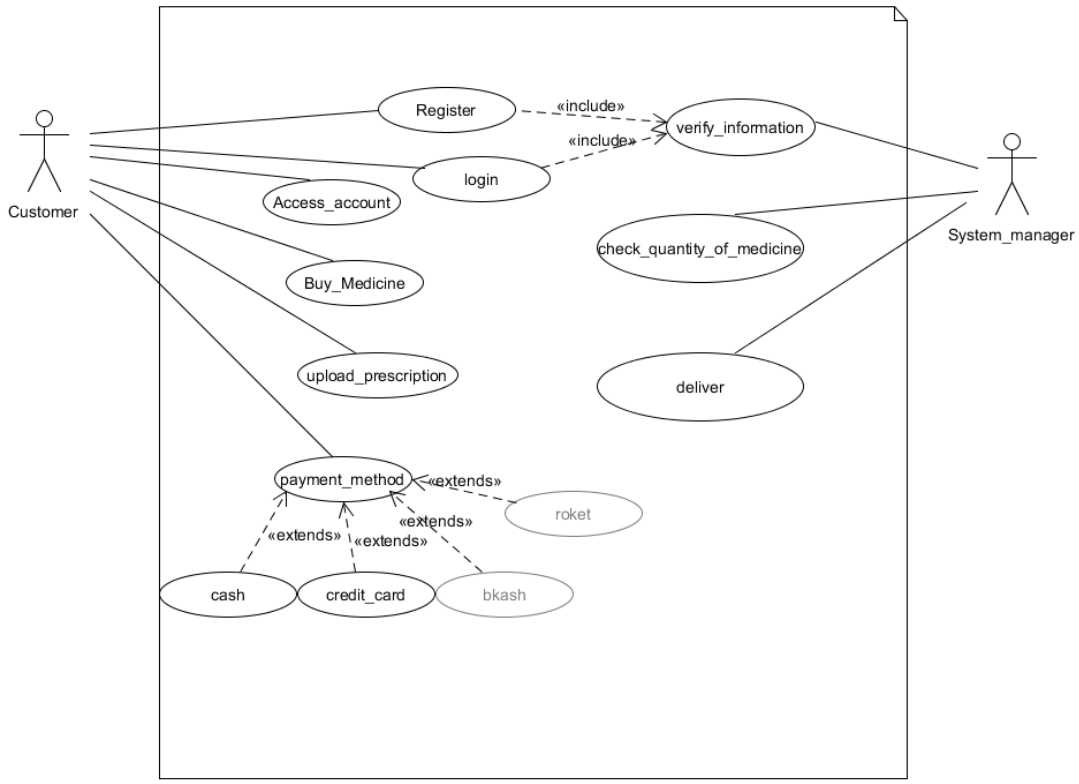


Figure: Use Case Diagram

SOFTWARE PROCESS MODEL

Process Model - Agile

"Plan-driven methods work best when developers can determine the requirements in advance and when the requirements remain relatively stable, with change rates on the order of one percent per month." - Barry Boehm

- Agility is the ability to create and respond to change in order to profit in a turbulent business environment

- Agile is the subset of iterative and evolutionary methods

Iterative Products

- Each iteration is a self-contained, mini-project with activities that span requirements analysis, design, implementation, and test.

- Leads to an iteration release (which may be only an internal release) that integrates all software across the team and is a growing and evolving subset of the final system.

- The purpose of having short iterations is so that feedback from iteration N and earlier,
  and any other new information, can lead to refinement and requirements adaptation for iteration N + 1.

The Concept of Time Box

- The predetermined iteration length serves as a timebox for the team.
- Scope (set of tasks) is chosen for each iteration to fill the iteration length.
- Rather than increase the iteration length to fit the chosen scope, the scope is reduced to fit the iteration length.

Agile method info -

Agile methods are considered

- Lightweight (do not concentrate on the whole s/w development at once)
- People-based rather than Plan-based

Several agile methods

- No single agile method
- Different agile methods can be combined in s/w development (Hybrid)

No single definition. Agile Manifesto closest to a definition

- Set of principles
- Developed by Agile Alliance

Agile Assumption

It is difficult to predict in advance which software

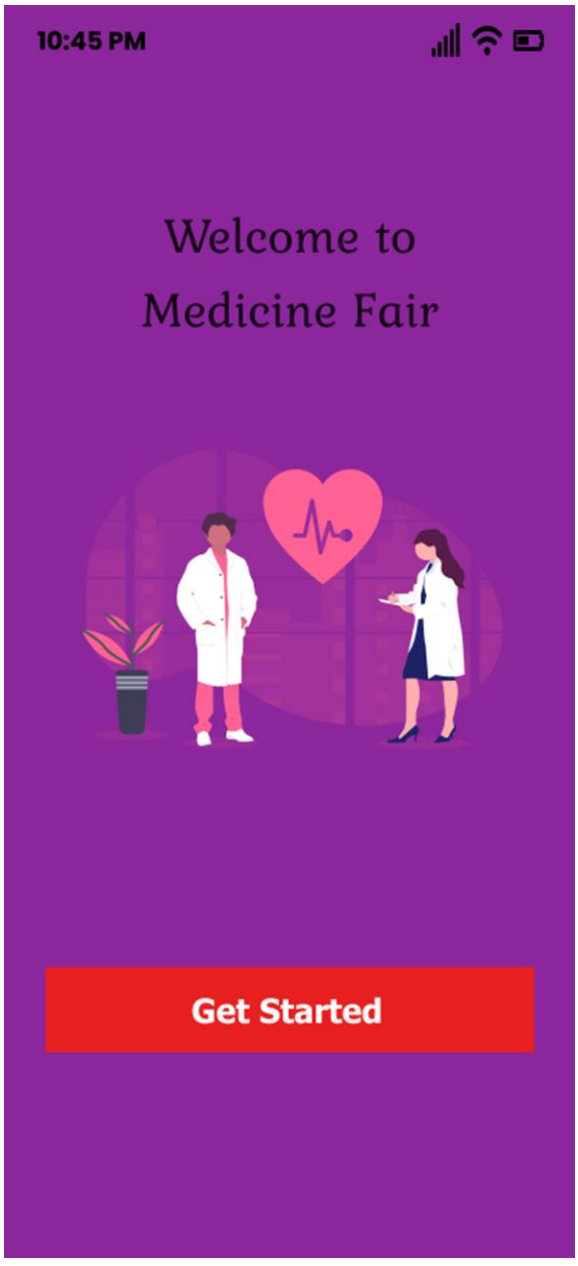
- Requirements will persist and which will change
- It is equally difficult to predict how customer priorities will change as the project proceeds
- Design and construction are interleaved in many types of software. That is, both activities should be performed tightly so that design models are proven as they are created. It is difficult to predict how much design is necessary before construction is used to prove the design.

Analysis, design, construction, and testing are not as predictable (from a planning point of view) as we might like.

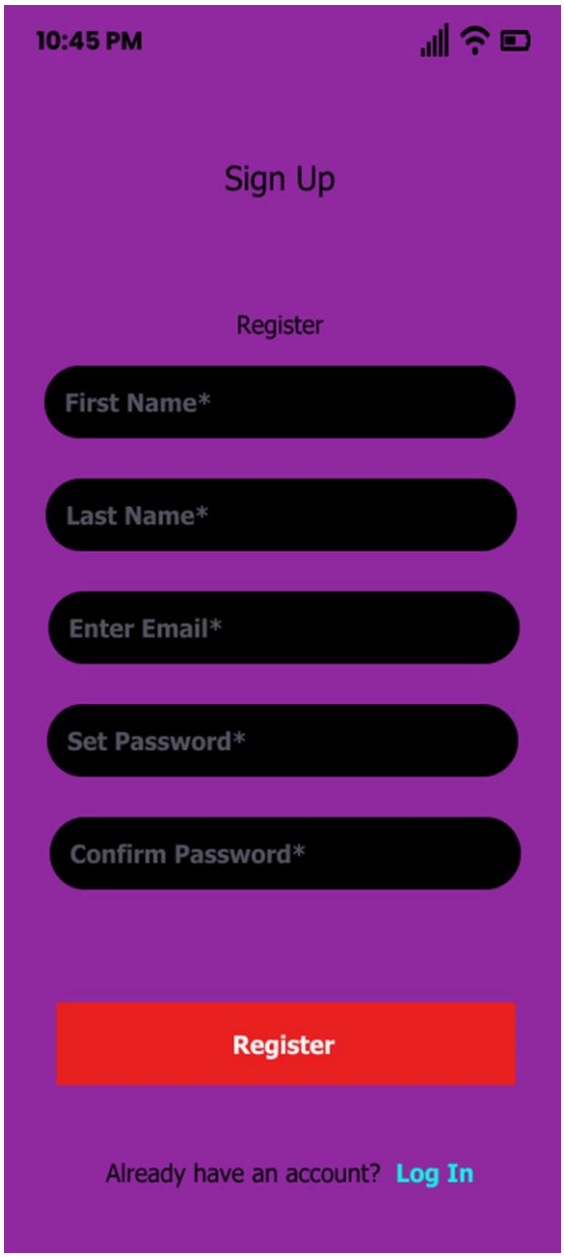
INTERFACES

ILLUSTRATIVE DESIGN

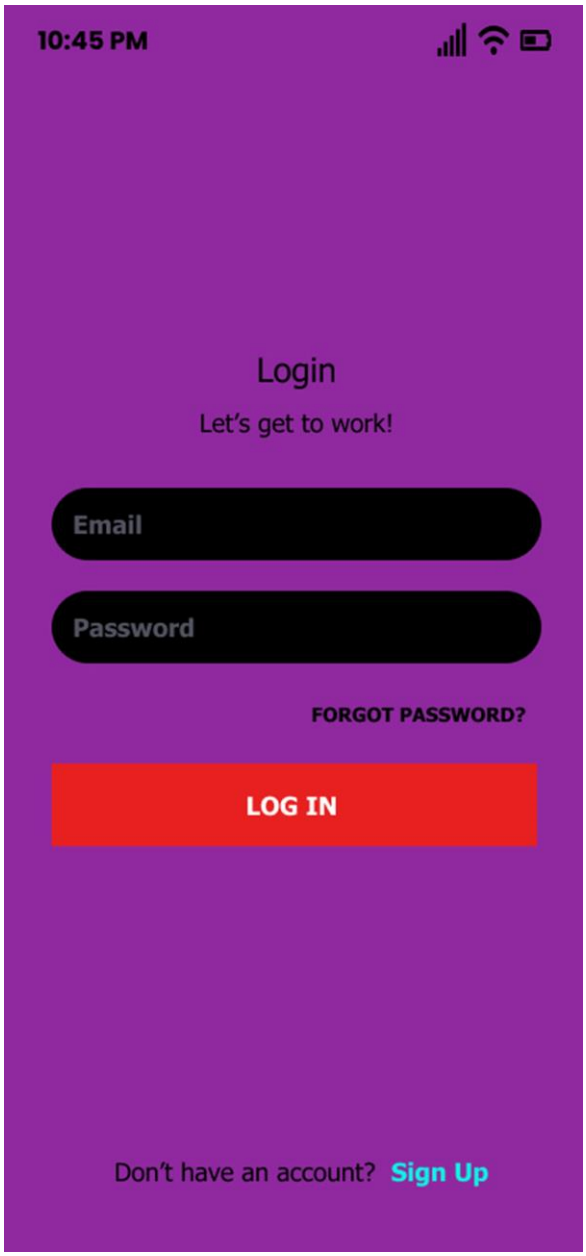
1. **Welcome Page**



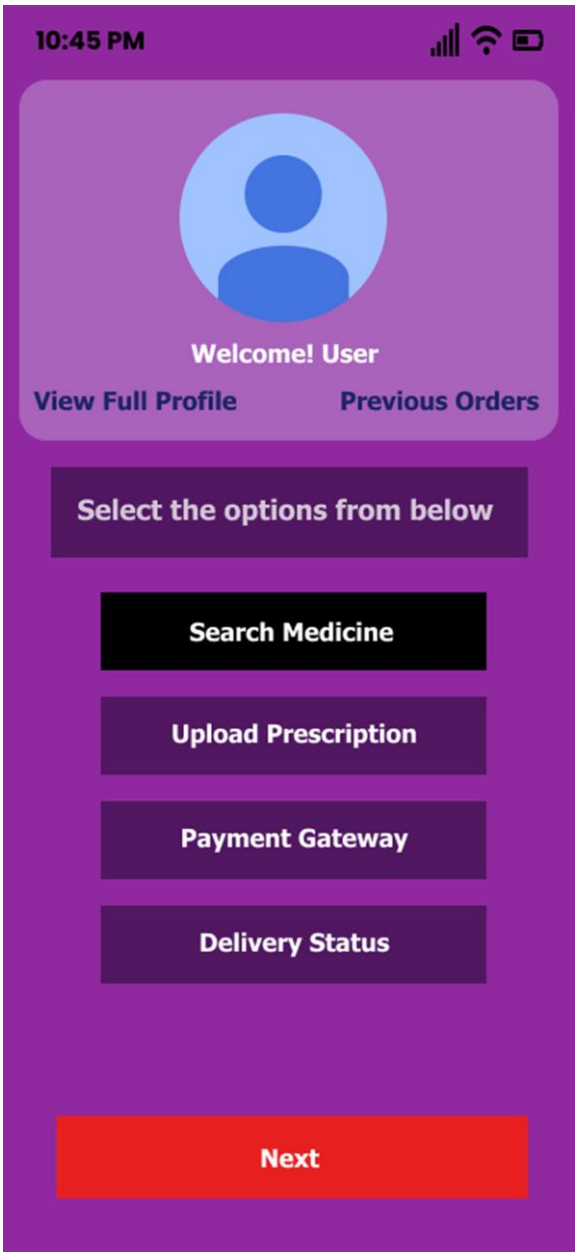
2. Sign Up Page



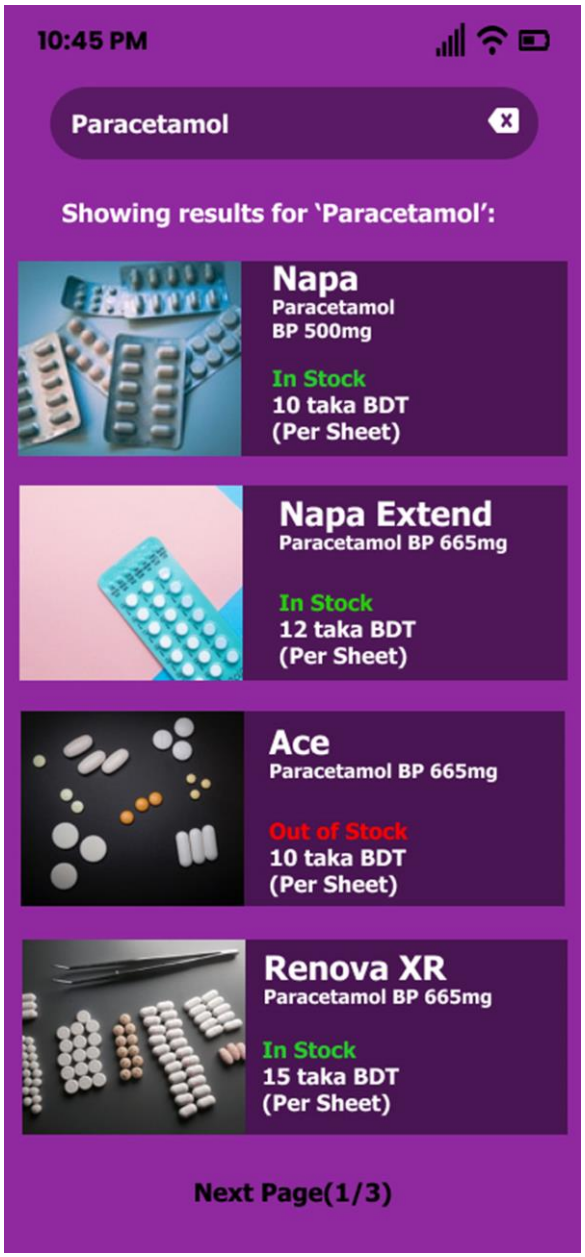
3. Login Page



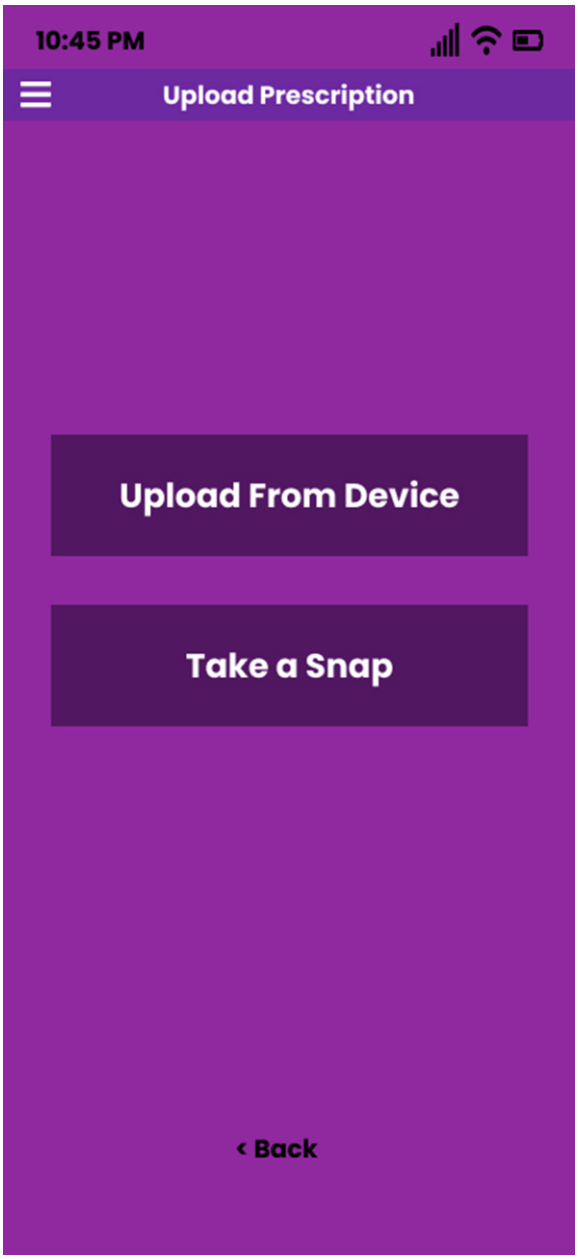
4. Home Page



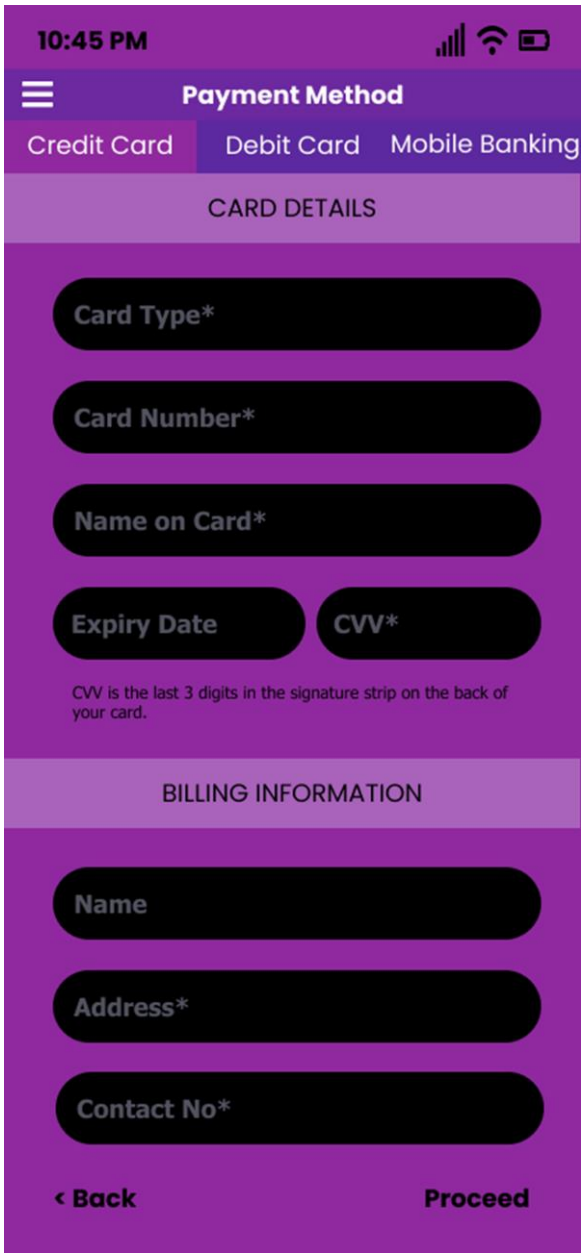
5. Search Option



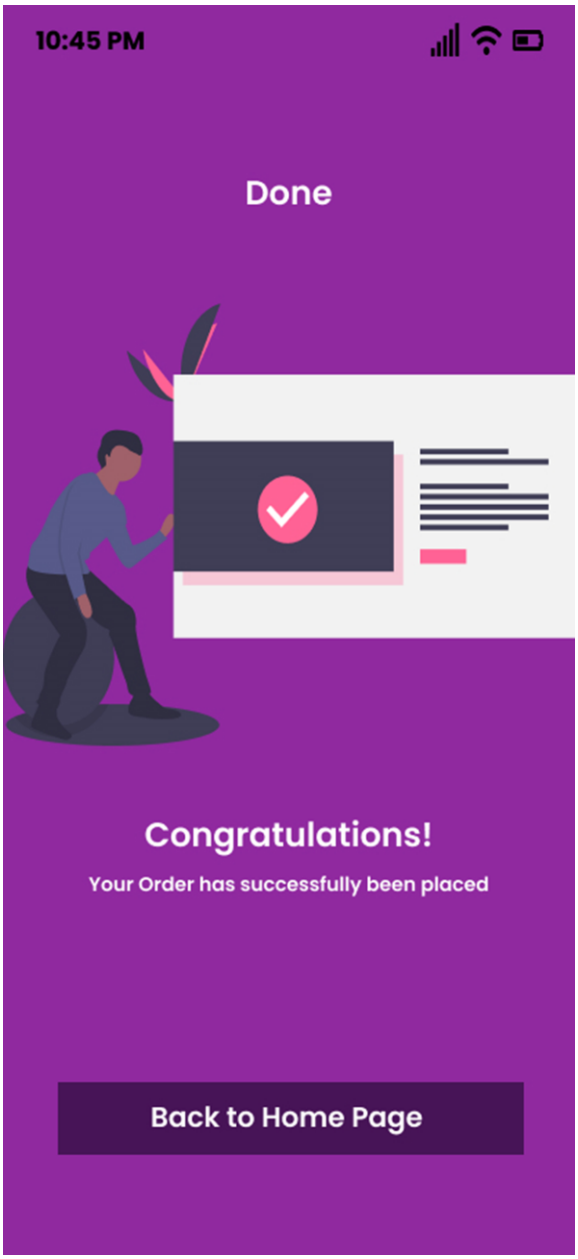
6. Upload Prescription



7. Payment Gateway



8. Confirmation



TESTING

PROJECT TEST PLANNING

Making a test plan has multiple benefits. Prime reason for test planning is it ensures software quality. The question is what is "What is Software Quality?" evokes many different answers. Quality is a complex concept—it means different things to different people, and it is highly context dependent. Software Quality (as IEEE Std 610): The degree to which a component, system or process meets specified requirements and/or user/customer needs and expectations [4]. Other benefits can be:

- Help people outside the test team such as developers, business managers, customers understand the details of testing.
- Test plan guides our thinking. It is like a rule book, which needs to be followed.
- Important aspects like test estimation, test scope, Test strategy are documented in test plan. so it can be reviewed by Management Team and re-used for other projects.

As per IEEE 829 test plan can be created by following this rules:

- Analyze the product
- Design the Test Strategy
- Define the Test Objectives
- Define Test Criteria
- Resource Planning
- Plan Test Environment
- Schedule & Estimation
- Determine Test Deliverables

Performing various techniques for testing using the testing tool: unit testing, integration testing, Blackbox testing, Whitebox testing, etc.

Procedure:

1. A particular system was selected. Mobile in this case. (Web/Desktop/Mobile/Device)
2. Various modules of the system were identified so that they can be tested stand alone.
3. Test cases were prepared of testing the selected elements of your identified software.
4. The test was performed according to the generated test case and a bug report was produced which will helpful for the system developer to modify the system for improve system's quality.

TEST CASES

1. User Registration

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_1			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): HIGH			Test Executed by: RITU BASAK	
Module Name: User Registration			Test Execution date: 8.12.2020	
Test Title: Verify user identity.				
Description: Test Registration page. If existing, verify if signing up with valid email and password and see if it works.				
Precondition (If any): User must have entered valid email address.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Open the App. 2. Click sign up. 3. Enter valid information. 4. Check email for OTP. 5. Submit the OTP.	Email: abc@gmail.com Password: 1234 OTP:1186	User should be registered.		
Post Condition: User is registered.				

2. User Login

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_2			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): HIGH			Test Executed by: RITU BASAK	
Module Name: User Login Session			Test Execution date: 8.12.2020	
Test Title: Verify login				
Description: Test login page. See if, user login with valid username and password and it works.				
Precondition (If any): User must enter the email and password which was registered.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the App. 2.Enter username. 3. Enter password. 4. Click login.	Username: example10 Password: 1234	User should be able to login to the system.		
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

3. Search Medicine

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_3			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RAHMAN, MD.SHAKIBUR	
Module Name: Search medicine			Test Execution date: 8.12.2020	
Test Title: Verify searching for medicine				
Description: Test searching options and results				
Precondition (If any): Users must enter a valid medicine name or type.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the search bar. 2. Type valid name of a medicine. 3. Click "Search" button.	Paracetamol	Napa, Napa Extend, Ace, Renova XR, Fast plus		
Post Condition: Search results has been shown.				

4. Medicine Status

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_4			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): HIGH			Test Executed by: RAHMAN, MD.SHAKIBUR	
Module Name: Medicine status			Test Execution date: 8.12.2020	
Test Title: Verify the availability of medicine				
Description: Searched medicine is available or not				
Precondition (If any): Users must have searched for a valid medicine.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the search bar. 2. Type valid name of a medicine. 3. Click "Search" button. 4. Tap on one medicine to check.	Napa Extend	In Stock		
Post Condition: User can add that to cart if available.				

5. Upload Prescription

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_5			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): HIGH			Test Executed by: ANJUMAN ARA	
Module Name: Upload Prescription			Test Execution date: 8.12.2020	
Test Title: Test the Uploading Option				
Description: Uploading prescription is successful or not				
Precondition (If any): Successful login to the system				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click on the "Upload Prescription" option. 2. Select weather to "upload from device" or "Take a snap".	Upload a File from Device	Prescription Uploaded.		
Post Condition: User should get a schedule shortly for consulting with a doctor.				

6. Payment Method

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_6			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): HIGH			Test Executed by: ANJUMAN ARA	
Module Name: Payment Method			Test Execution date: 8.12.2020	
Test Title: Verify user payment options.				
Description: Test the payment option and the information taken from the user				
Precondition (If any): Users must select a particular payment option and input the valid card information as required.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login to the system. 2. Search valid name of a medicine. 3. Select Medicine. 4. Select a payment method. 5. Input valid card information.	Valid card or other payment information selected.	Product should be placed for delivery.		
Post Condition: Product is ready for delivery.				

7. Customer Confirmation Code

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_7			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: ANJUMAN ARA	
Module Name: Customer Confirmation Code			Test Execution date: 8.12.2020	
Test Title: Verify Customer Confirmation Code				
Description: Test Customer confirmation code for specific order				
Precondition (If any): Order should be placed				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Login to the system. 2. Search for the medicine. 3. Select a particular medicine. 4. If available click on "Purchase Product". 5. Select a payment option and proceed.	Code: 78354	Purchase verification successful		
Post Condition: User waits for delivery.				

8. Delivery Status

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: T_8			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RAHMAN, MD.SHAKIBUR	
Module Name: Delivery Status			Test Execution date: 8.12.2020	
Test Title: Verify delivery status				
Description: Test any particular order is set to delivered or not				
Precondition (If any): An order should be placed earlier with a particular payment method.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click "Delivery Status". 2. Select a specific order. 3. Check delivery status there.	Ccc:1864	Delivery is on the way.		
Post Condition: Product should be delivered.				

9. Availability

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_1			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: SHIL, DIPONKOR CHANDRA	
Module Name: Availability			Test Execution date: 8.12.2020	
Test Title: Response time of the system.				
Description: At different time system will get different number of hits. According to that an available percentage(at least 99.8%) has been set varying weekdays and weekends. It also includes time shift.				
Preconditions: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Go the application at different time on different days.	N/A	According to condition, system should response properly.		
Post condition: N/A				

10. Performance

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_2			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: SHIL, DIPONKOR CHANDRA	
Module Name: Performance			Test Execution date: 8.12.2020	
Test Title: Performance of the system based on some activities of the system.				
Description: At different action, system should response properly according to expected time. This includes the parts like authentication time, download time, searching time, and validation time.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Measuring time on the action of authentication, download, search, validation.	N/A	According to expected time, system should response properly.		
Post Condition: N/A				

11. Efficiency

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_3			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: SHIL, DIPONKOR CHANDRA	
Module Name: Efficiency			Test Execution date: 8.12.2020	
Test Title: Increasing system efficiency and giving user a smooth experience with the help of a methodology.				
Description: According to user's internet speed, system will automatically reduce/increase images quality to give user a smooth experience.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Reduce/Increase the quality of system images	N/A	According to user internet speed, system should response at its best.		
Post Condition: N/A				

12. Reusability

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_4			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: ANJUMAN ARA	
Module Name: Reusability			Test Execution date: 8.12.2020	
Test Title: Reuse predefined actions or functions in the system.				
Description: Some functions like Search options, OTP validation has several usability in the system. So, without adding different functions for the same action, we can reuse the predefined function. That will lower the load on the application.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Use of one code in many module.	N/A	According to the analogy of reusability, the system should response properly.		
Post Condition: N/A				

13. Integrity

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_5			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RITU BASAK	
Module Name: Integrity			Test Execution date: 8.12.2020	
Test Title: To ensure the security of the system as well as the users.				
Description: For security purpose system have to ensure the all kinds of security of the users.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. System will be able to prevent unauthorized access. 2. Only permitted privileges will be able to access user transaction histories. 3. Payment transactions procedure will be handled in special security.	N/A	1. Be ensured, system is able to prevent all kinds of unauthorized access. 2. Be ensured that, there should be only admin or administrative team will see the transaction histories. 3. System should give more security about payment and make sure that all kind of payment should be done without any kind of insecurity issues.		
Post Condition: N/A				

14. Interoperability

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_6			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RAHMAN, MD.SHAKIBUR	
Module Name: Interoperability			Test Execution date: 8.12.2020	
Test Title: To ensure the data exchanging function between card and the system.				
Description: Verify that the data exchanging happening perfectly between card and the system.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Symmetric communication between system and payment methods will be establish when a transaction is occurred.	N/A	1. System use the different payment method that are made by some other companies. So we have to ensure the proper work of it.		
Post Condition: N/A				

15. Maintainability

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_7			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RAHMAN, MD.SHAKIBUR	
Module Name: Maintainability			Test Execution date: 8.12.2020	
Test Title: To test maintenance time is between 40 min to 1 hour and how easily our Application can be modified.				
Description: Maintainability depends on how easily system can be understood, changed, tested and correct a defect in our application in a short amount of time.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. System contains light-weights UI and functions which gives a maintenance programmer to modify easily.	N/A	1. System can easily modified, understood, changed and tested		
Post Condition: N/A				

16. Robustness

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_8			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: SHIL, DIPONKOR CHANDRA	
Module Name: Robustness			Test Execution date: 8.12.2020	
Test Title: Auto save data in case of any accidental shutdown of the application.				
Description: All the information and activities will be auto save to prevent fail tolerance of the system.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Auto save information for further reuse	N/A	1. Last edits and progresses are found after accidental shutdown of the application.		
Post Condition: N/A				

17. Usability

Project Name: Medicine Fair			Test Designed by: SHIL, DIPONKOR CHANDRA	
Test Case ID: NFRT_9			Test Designed date: 8.12.2020	
Test Priority (Low, Medium, High): MEDIUM			Test Executed by: RITU BASAK	
Module Name: Usability			Test Execution date: 8.12.2020	
Test Title: To test user friendliness of the system.				
Description: Verify the system is user friendly or not.				
Precondition (If any): N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the app. 2. Search for Medicine. 3. Check the availability and the price. 4. Upload Prescription for consulting a doctor. 5. Order online. 6. Select a payment method. 7. Get confirmation.	Check all the functionality of the application is working smoothly or not.	User experience should be a pleasurable one. We should expect to get average rating above 4.5 out of 5.		
Post Condition: N/A				

WBS AND EFFORT ESTIMATION

WORK BREAKDOWN STRUCTURE

Objective: Perform project management activities: effort estimation, WBS, activity planning, resource allocation.

Tools/ Apparatus: Microsoft project.

Procedure:

1. Identify all the micro tasks related to project management and categorize them within the WBS structure
2. Perform detailed effort estimation correspond with the WBS and schedule
3. Draw a network diagram of the identified tasks from WBS based on the precedence of each tasks you've identified.

STRUCTURE

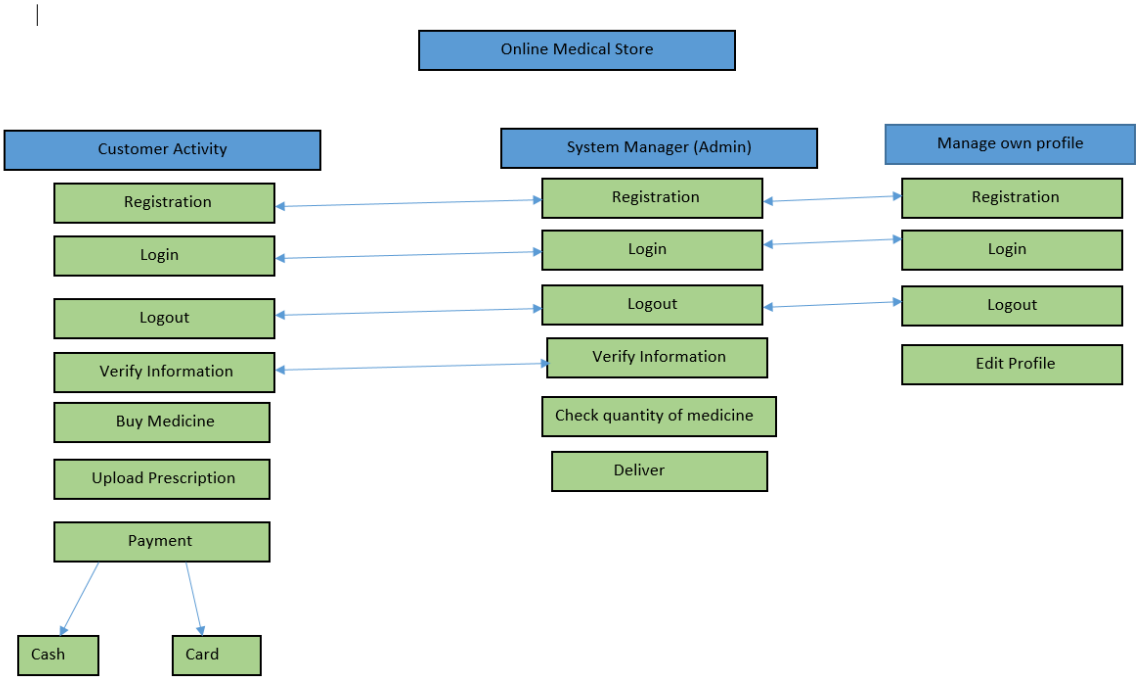
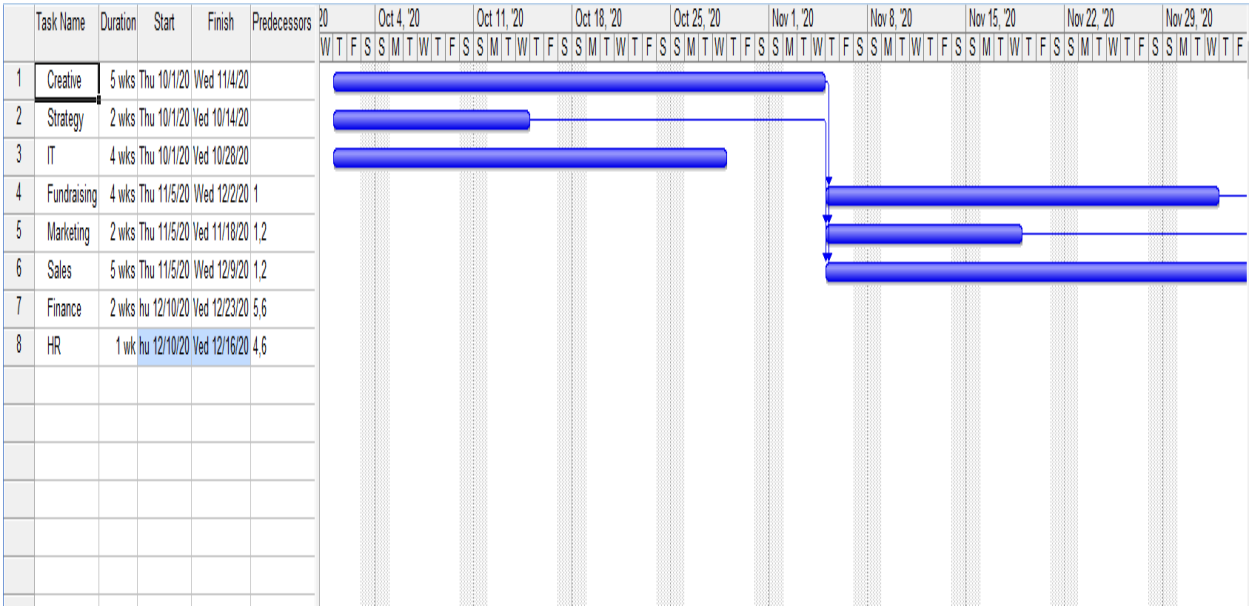


Figure: Work Breakdown Structure

ACTIVITY EFFORT ESTIMATION

In order to establish how long our project will take, what is the schedule, and when is the completion date for our project? We need to think very carefully about the durations of each of the individual tasks or activities. For instance, in the case of the startup project example, we might come up with the following estimated duration in weeks for each one of our tasks. We assume that creative might take us five weeks. Strategy will take us two weeks to develop. The IT might take four weeks to put in place. Fundraising is a long activity that will take us four weeks. Marketing will take us five, sales will take us two weeks. And hopefully, with finance and HR, we will be done within two and one weeks.



	Task Name	Duration	Start	Finish	Predecessors
1	Creative	5 wks	Thu 10/1/20	Wed 11/4/20	
2	Strategy	2 wks	Thu 10/1/20	Ved 10/14/20	
3	IT	4 wks	Thu 10/1/20	Ved 10/28/20	
4	Fundraising	4 wks	Thu 11/5/20	Wed 12/2/20	1
5	Marketing	2 wks	Thu 11/5/20	Ved 11/18/20	1,2
6	Sales	5 wks	Thu 11/5/20	Wed 12/9/20	1,2
7	Finance	2 wks	hu 12/10/20	Ved 12/23/20	5,6
8	HR	1 wk	hu 12/10/20	Ved 12/16/20	4,6

Figure: Project Activities

But while thinking about these durations and coming up with these weekly estimates is not an easy task. It takes a lot of practice, and there are a lot of problems and a lot of difficulties when we come to think about our estimates. Few of them are discussed here.

PROBLEMS IN EFFORT ESTIMATION

Parkinson's Law (Over Estimation): One of the most notorious struggles that individuals have when they think about how long a task will take in a project is something called Parkinson's Law, made publicly known by work by Cyril Parkinson in the 1950s. The Parkinson's law tells us that if we plan for an activity to take a certain amount of weeks, be sure that the work will fill up that entire duration. If we give somebody four weeks to complete their task, they will take the entire four weeks to complete their task.

Student's Syndrome (Over Estimation): It says that if someone give you four weeks to complete a task, you are like to not even start working on that task until the very last minute. And therefore, even if we think that a task might only take two days, but we give you two weeks to do it, you will actually only work towards the end of that duration. Again, it makes it harder for us to really get a good sense of how long a certain piece of work might need or might require when we plan up front.

High Confidence (Under or Over Estimation): Sometimes, individuals are notorious for being overconfident. And, if you ask them how long something will take them, they are likely to be very sure of themselves. And actually, report something is probably longer or shorter than it will turn out to be in reality.

Anchoring and Confirmation (Under or Over Estimation): other biases that individuals suffer from are anchoring and confirmation. I'll say the task take you two or three weeks and If I ask you how long a task will take? Here, I anchored you around those numbers. And, it is not likely that you suddenly tell me, oh, actually you're way off, it's going to take me eight, eight weeks to complete. And so, by having a conversation, we sometimes anchor ourselves and we sometimes like to confirm historical patterns. And so, if we estimated a task in the past to take on two weeks, we might report that going forward.

REFERENCES

[1] Roger Pressman. 2009. Software Engineering: A Practitioner's Approach (7th. ed.). McGraw-Hill, Inc., USA.

[2] Wong, K. (2015).*Software Processes and Agile Practices*. University of Alberta.

[3] Pressman, R.S (2005). *Software Engineering: A Practitioner's Approach.*

[4] Lab Manual