PROJECT ON STUDENT'S QUERY BASED QUESTION AND ANSWERING WEB APPLICATION

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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Dhaka, Bangladesh

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APPROVAL

This Project titled "**Student's query-based questions and answering web application**", submitted by Alimul Islam, ID no:181-15-10974, Mohsin Hossain, ID no:181-15-10806 and Md. Borhan Uddin, ID no: 181-15-10740 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 02-01-2022.

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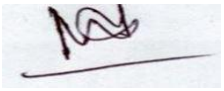

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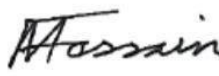

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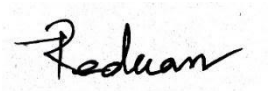

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Riazur Rahman, Sr. Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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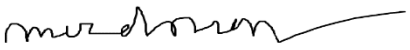

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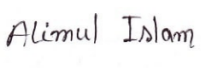

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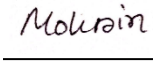

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We would like to express our heartiest gratitude to **Professor Dr. Touhid Bhuiyan**, Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Students in Universities and colleges are facing many problems to complete courses that they have taken. The problems of students regarding taken courses have been arising at a growth rate during this pandemic. We are developing a Web based Application named "**Solution Point**" for the students that allow them to query about their problems and get answered by anyone using this website. There are many benefits for being a user, some of them are: posting question about him/her problems, search existing problems, see other problems in the forum. Students will get their problems done and it will play a get role in solving the problem of student that they are facing during study.

TABLE OF CONTENTS

LIST OF FIGURES:

LIST OF TABLES

CHAPTER 1
INTRODUCTION

1.1 Project Overview

One of the biggest flaws in our education system is lack of proper contents and understandings between students and tutors. Dropout rates and low learnings are increasing as a result of dissatisfaction in their classes. DIU is taking necessary steps to overcome these problems among students. Still, Students have their problem at the end. We developed a web App named “Solution Point” to reduce this problem. This allows a student to query about his/her problem and anyone in this site will reply his/her question. User can be anonymous or valid user. This will help the students to get instant Solution of his/her problems. It will also broaden the network between students or learners.

1.2 Motivation

In our university, if students face problems in their taken courses, they have to take a schedule online or offline for their course teacher to discuss about the query or problems. And so, we decided to build a website where students can post a query or problems and anyone including students, anonymous user and everyone can search existing queries also.

1.3 Objective

The main purpose of this project is to reduce the sufferings of the students who are seeking solution of their query or problems regarding university or courses. It will save their time and gain their objectives easily.

1.4 Expected Outcome

Students can get help and get his mathematical, theoretical, personal problem's solution by posting a question or query. Students can also share his knowledge or experience by helping others via this platform. As a result, they can save their time and they'll not have to stuck in the middle of their chapter or study. The main goal of my project is to lessen the complications of the students and to get their solution on query or doubt. So, we decided to build a platform where students can collaborate and learn everything they need.

1.5 Report Layout

Chapter 1: we have discussed Introduction, Objectives, Motivation, Expected Outcome and Report layout of the project.

Chapter 2: In chapter 2, It has been discussed about Related work, scope of the problem, proposed solution, stakeholders and project schedule.

Chapter 3: Chapter 3 includes Software requirement specifications, functional requirement, non-functional requirement, software and hardware requirement.

Chapter 4: Chapter 4 talks about use case diagram, use case descriptions, activity diagram, sequence diagram and entity relationship diagram.

Chapter 5: It will cover development technology such as development tools and platforms.

Chapter 6: Chapter 6 provides user interface of our website such as home page, registration and login page, add, search and edit questions.

Chapter 7: Chapter 7 will cover about system testing.

Chapter 8: It will give information about project summary such as limitations, obstacles and achievement and scope for future development.

CHAPTER 2
BACKGROUND

2.1 Related Work

It is impossible for students at our university to post or discuss their problems or problems they encounter when they try to solve a problem. Therefore, I decided to build a system whereby Query, Answer, and individual profile sections will be provided through my system as well as a way to query existing queries in the database.

2.2 Scope of the Problem

It is quite difficult for students to discuss their problems or queries they encounter when they try to solve a problem immediately. They are facing the problem of instant help by teacher or anyone who skilled in that particular matter. It's very demotivating issue for a student.

2.3 Proposed Solution

With my proposed system, students will be able to post or visit according to their query, and answers will be provided by anyone using my system and we will also track their question list by name. To design a user friendly and responsive user interface I prefer the most commonly used JavaScript framework React.js.

2.4 Stakeholders

Three types of stakeholders in this project

1. Students
2. Anonymous user
3. System admin
4.

2.5 Project Schedule

In project management, a schedule lists milestones, activities, and deliverables, as well as their timing, usually with intended start and end dates. When the project began and when it will end, as well as the number of times each section of the project model is used, as well as the release date, is shown here. Schedules are commonly used in the project planning and project portfolio management stages of project management.

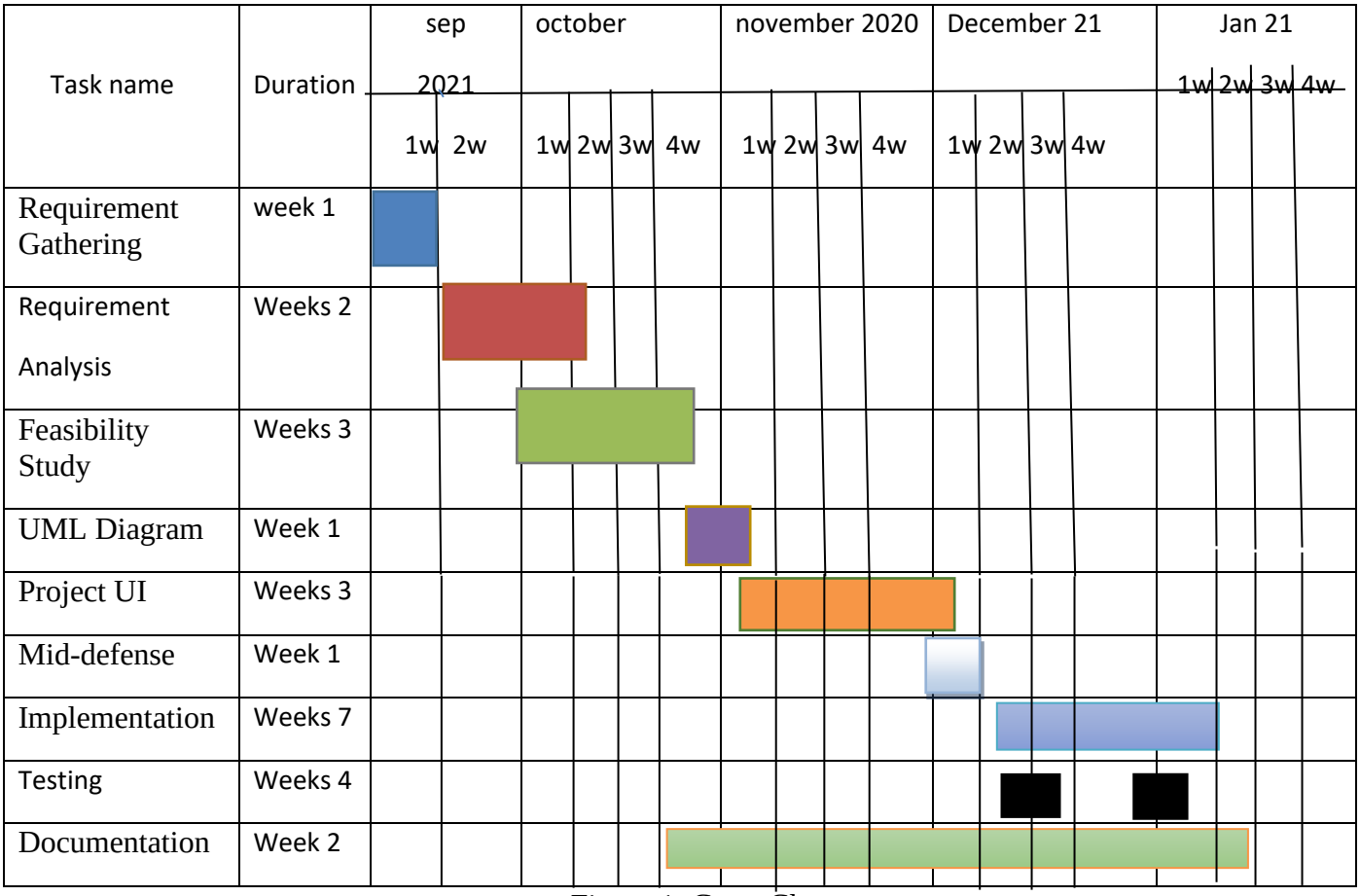

Figure 1: Gantt Chart

2.5.1 Gantt Chart

A Gantt chart is a type of bar chart that illustrates a project schedule.

2.5.2 WBS Planning for Development Phase

1. Project Plan [20 August 2021 to 20 September 2021]

2. Requirement gathering [August 2021 to 20 September 2021]

3. Analysis [27August to 25 September 2021]
    - Brainstorming
    - Observation
    - Implementation Analysis
4. Feasibility study [25 Aug 2021 to 15 Sep 2021]
5. Design [20 September 2021 to 30 November 2021]
    - System Design
    - Database Design and Implementation
    - System User Interface (UI)
6. Development [6 December 2021 to 30 December 2021]
    - User Module (candidate)
    - Administrator Module
7. Testing [30 December 2021 to 5 Jan 2022 (including two phase)]
    - Test plan
    - Test Case
    - Test Execution
8. Release Plan

Release	Version	Date
1st Release	**Beta version**	**15/12/2021**
2nd Release	**Beta version 1.0**	**15/01/2022**
3rd Release	**Version 2.0**	**26/01/2022**
4th Release	**Version 3.0**	**1/02/2022**

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Software Requirements Specification

The software requirements specification acts as an official statement of what the system developer should do. A full description of the software's functionality and performance is included in the SRS, along with its price. System Requirements Specification is a detailed description of a system to be developed. In addition to the definition of user requirements, the specifications requirements should also be included in the SRS because the documents provide a complete overview of the software. The developers of SRS can easily understand the requirements of software and know what they should implement.

3.2 Functional Requirements

- Users can register and login in the system.
- Users can register to the system.
- Users can see the Question list.
- Users can check his/her profile.
- User can post questions
- User can update his/her question.
- User can search existing query.

3.3 Non-Functional Requirements

- Users can change their passwords.
- The system's user interface is easy to understand and user friendly.
- It's a way to easy to support, change and enhance the system.

3.4 Software Requirements

- **Operating system:** windows 7 or later.
- **Browser:** Any browser

3.5 Hardware Requirements

Processor: Intel Pentium 4 or later that supports SSE3 capable.

RAM: 1GB (32bit), 2Gb(64bit)

Hard Disk: 16GB (32bit), 20GB (64 bit)

CHAPTER 4

SYSTEM ANALYSIS

4.1 USE CASE DIAGRAM

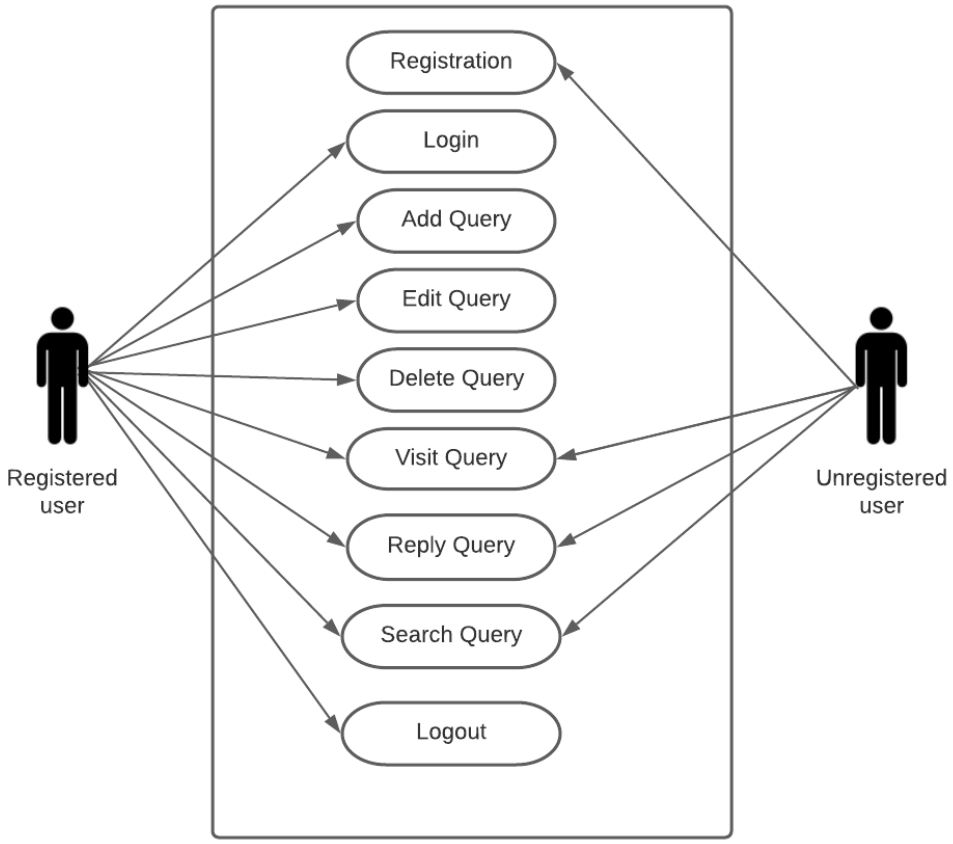

Figure 2: use case diagram for whole system

4.2 USE CASE DESCRIPTION

Table 01: Use case description of user registration

Use Case No.	01
Use Case Name	User registration
Actor	User
Trigger	A new user wants to use the system.
Brief Description:	If an individual wishes to use all of the system's features, he or she must register.
Stakeholders	Student
Precondition	Users are not registered in the system They must provide the required information
Post condition	Users have an account in the system. They can login in the system

Table 02: Use case description of user login

Use Case No.	02
Use Case Name	User Login
Actor	User
Trigger	A new user wants to login the system.
Brief Description:	Users who would like to use the system's all features must login to the system.
Stakeholders	Student
Precondition	Users are not logged in the system They must provide the required information
Post condition	They logged in in the system They can post or search query

Table 03: Use case description of post question

Use Case No.	03
Use Case Name	Post Question
Actor	Student
Trigger	Students can post their query to the Question section.
Brief Description:	Student can post their query or question according to their need.
Stakeholders	Student, Server
Precondition	Students must have to log in the system.
Post condition	User can access the system

Table 04: Use case description of edit question

Use Case No.	04
Use Case Name	Edit Question
Actor	Student
Trigger	Students can edit their query to the Question section.
Brief Description:	Student can edit their query or question according to their need.
Stakeholders	Student, Server
Precondition	students must have to log in the system.
Post condition	User can access the system

Table 05: Use case description of search question

Use Case No.	05
Use Case Name	Search Query
Actor	Student
Trigger	Student can search by keyword or question into question section.
Brief Description:	Students can search by any keyword, if the keyword matches to any question, it will be appeared to display.
Stakeholders	student
Precondition	Students should enter to the system.
Post condition	Students can see successfully the search result they searched.

4.3 ACTIVITY DIAGRAM FOR REGISTRATION

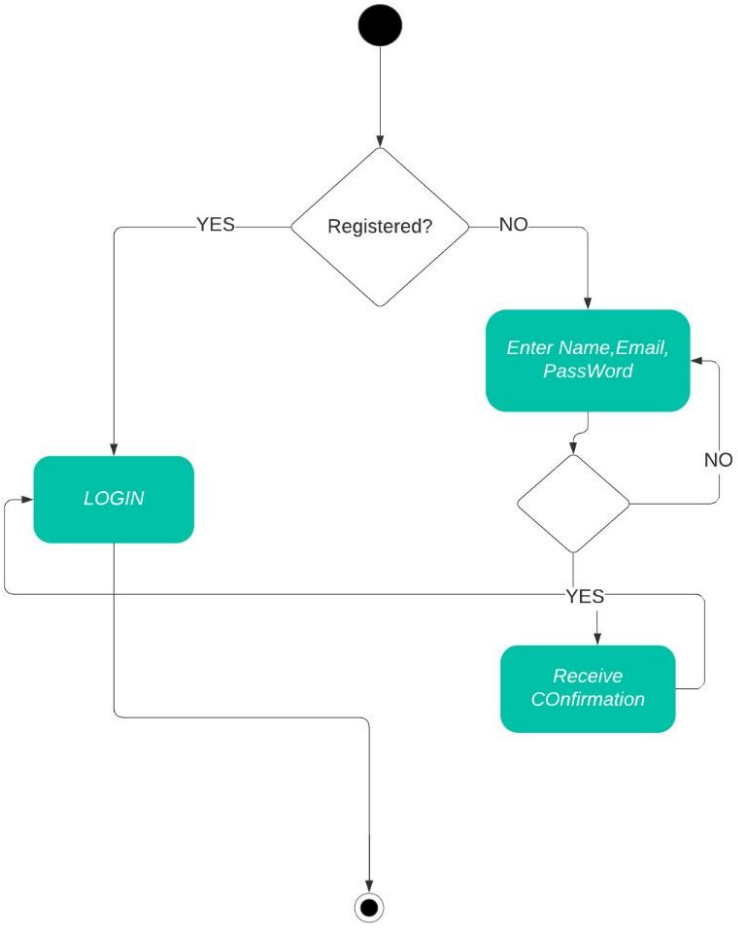

Figure 3: activity diagram for Registration

4.3.1 ACTIVITY DIAGRAM FOR LOGIN

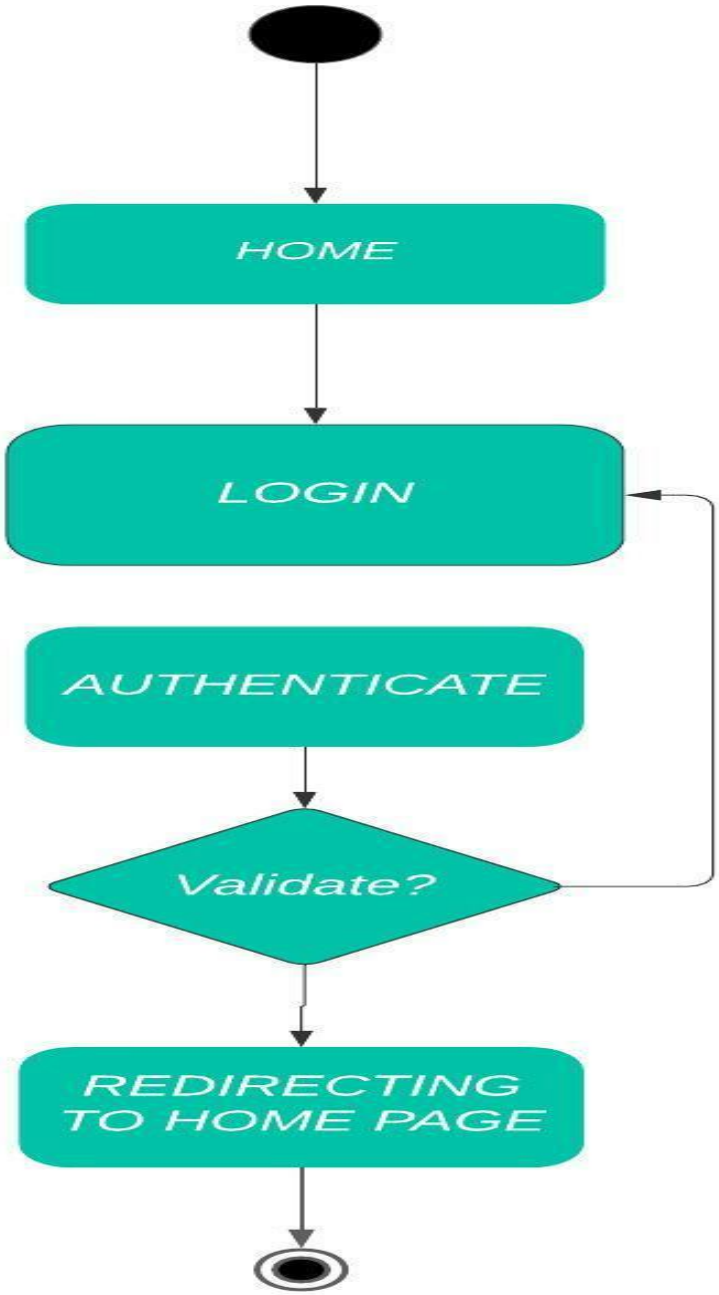

Figure 4: activity diagram for Login

4.3.2 ACTIVITY DIAGRAM FOR ADD QUESTION

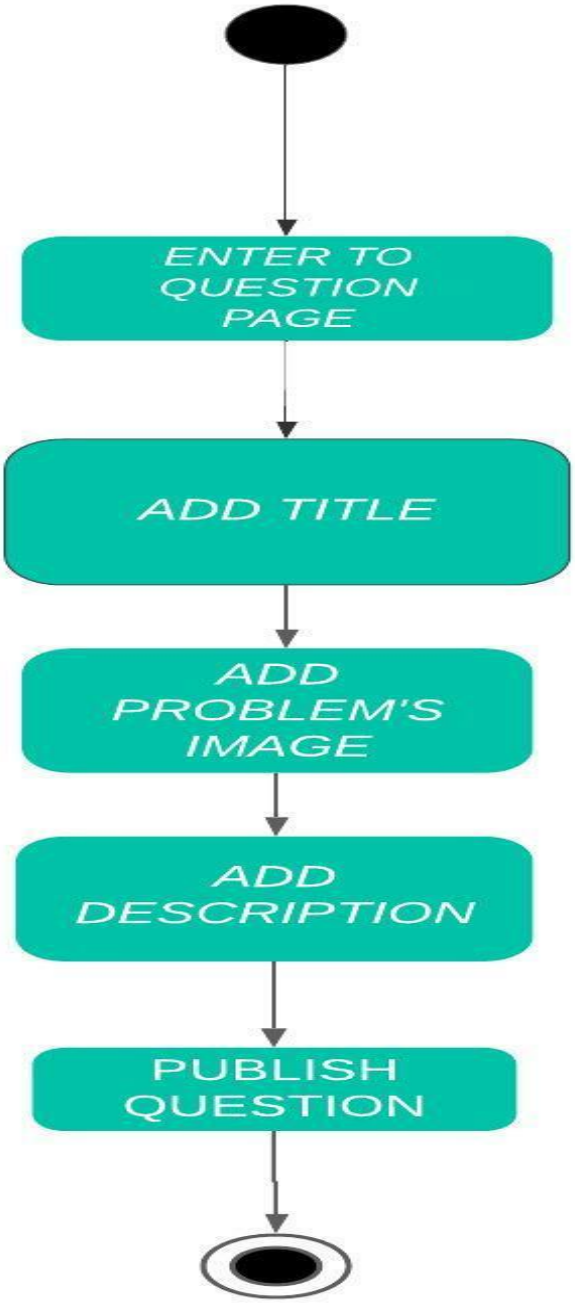

Figure 5: activity diagram for add Question

4.3.3 ACTIVITY DIAGRAM FOR EDIT AND DELETE QUESTION

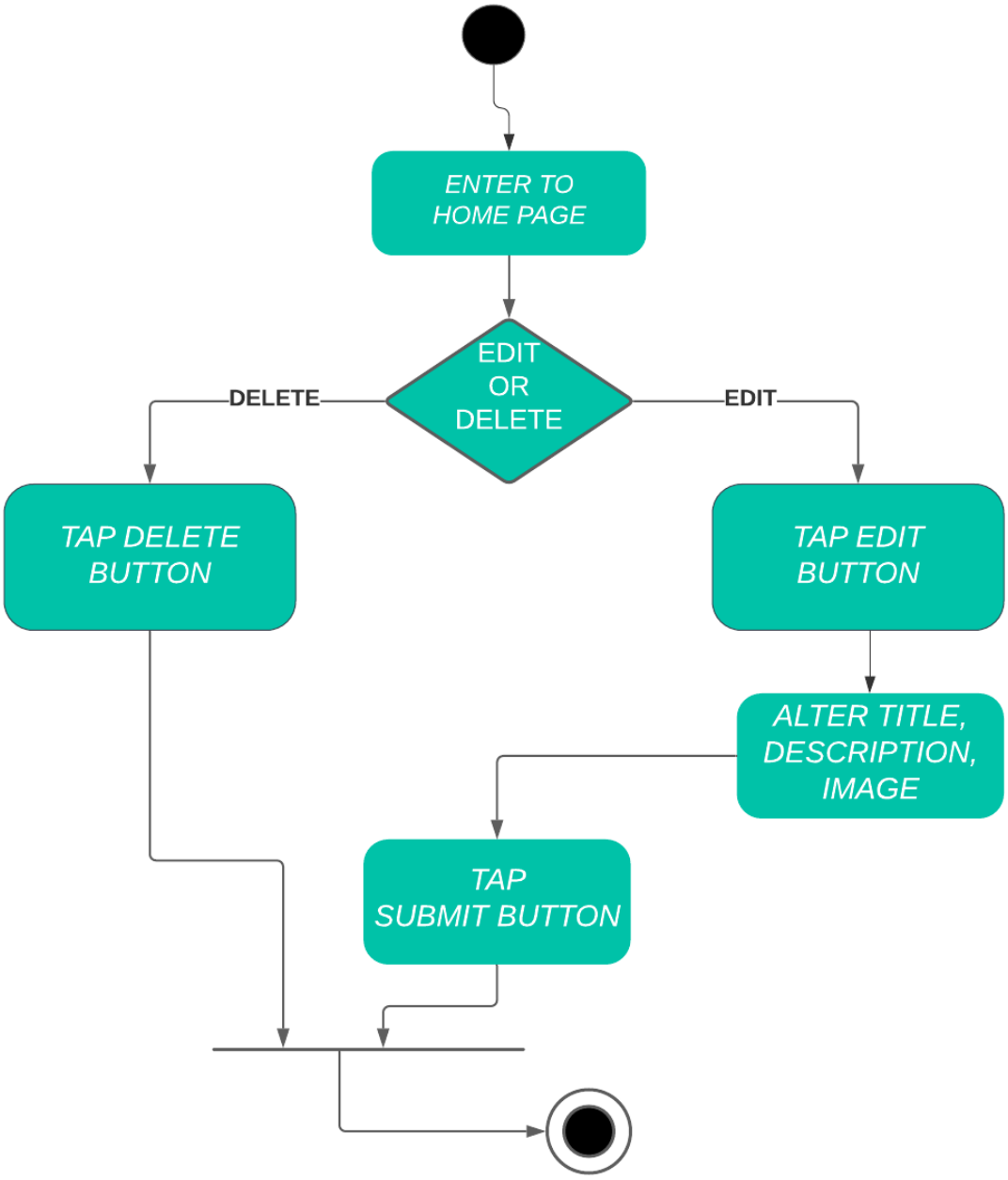

Figure 6: activity diagram for edit Question

4.3.4 ACTIVITY DIAGRAM FOR SEARCH QUESTION

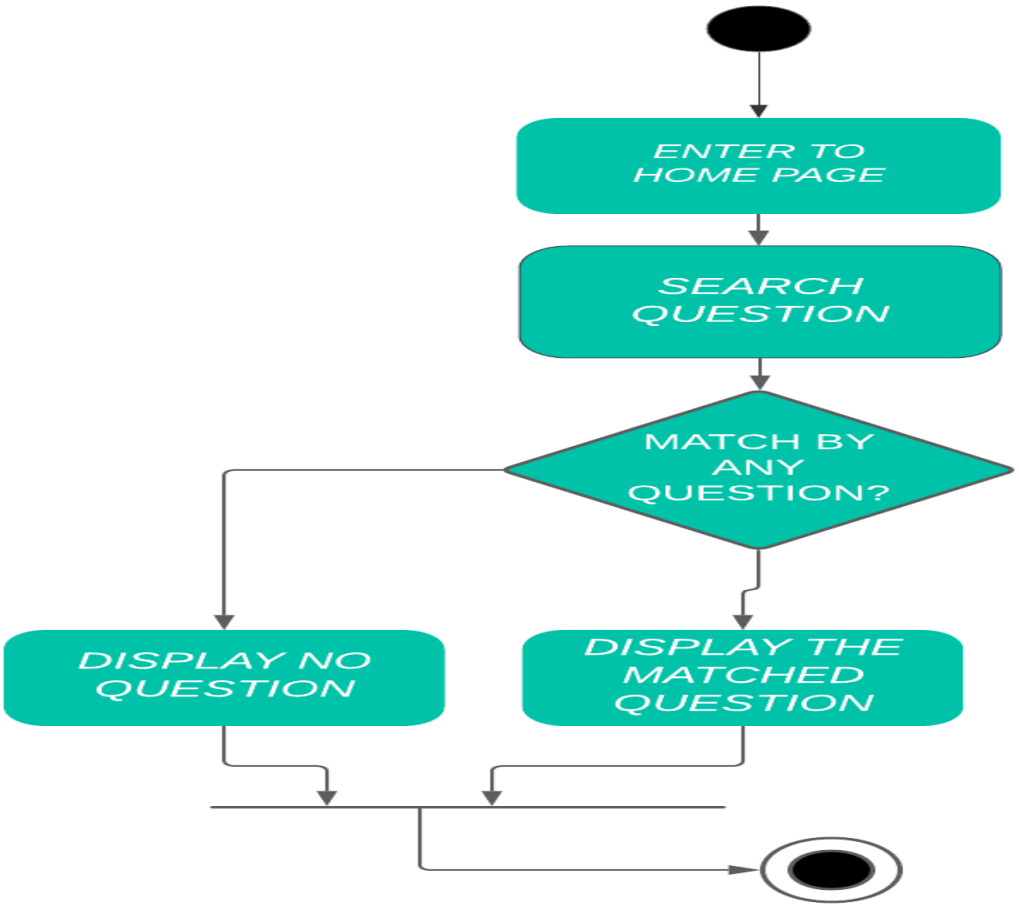

Figure 7: activity diagram for edit Question

4.4 SEQUENCE DIAGRAM FOR REGISTRATION

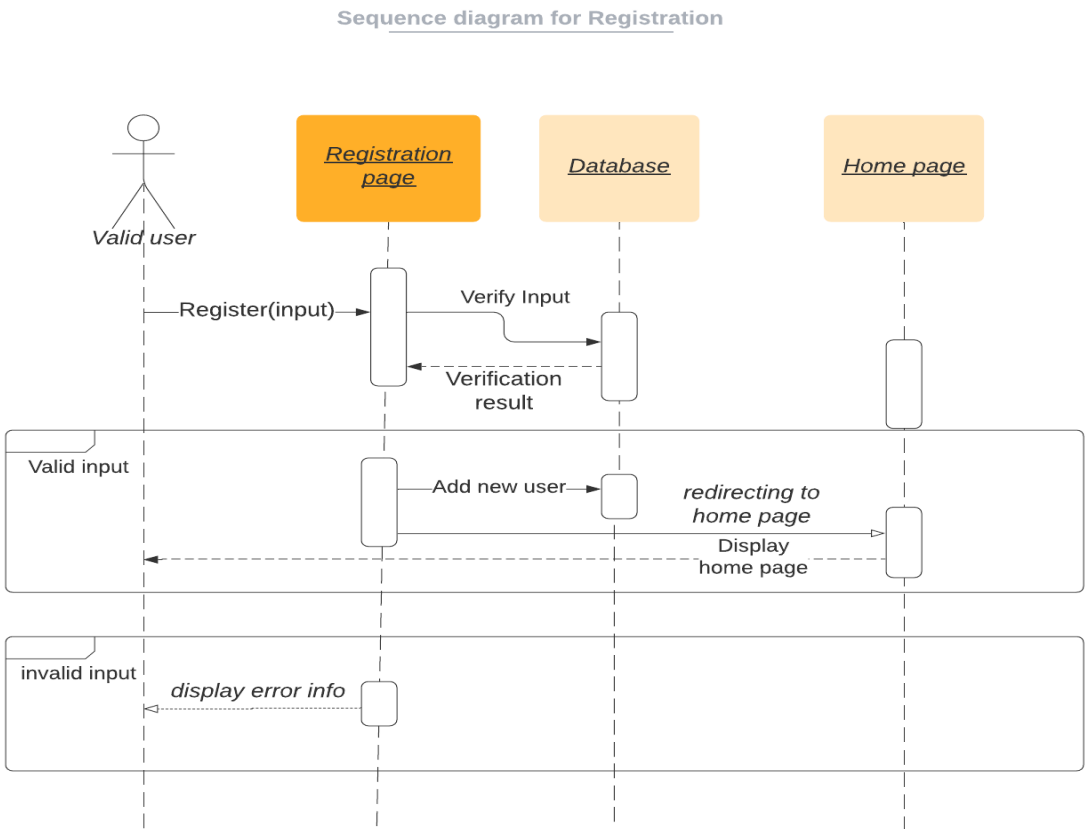

Figure 8: Sequence diagram for Registration

4.4 .1 SEQUENCE DIAGRAM FOR LOGIN

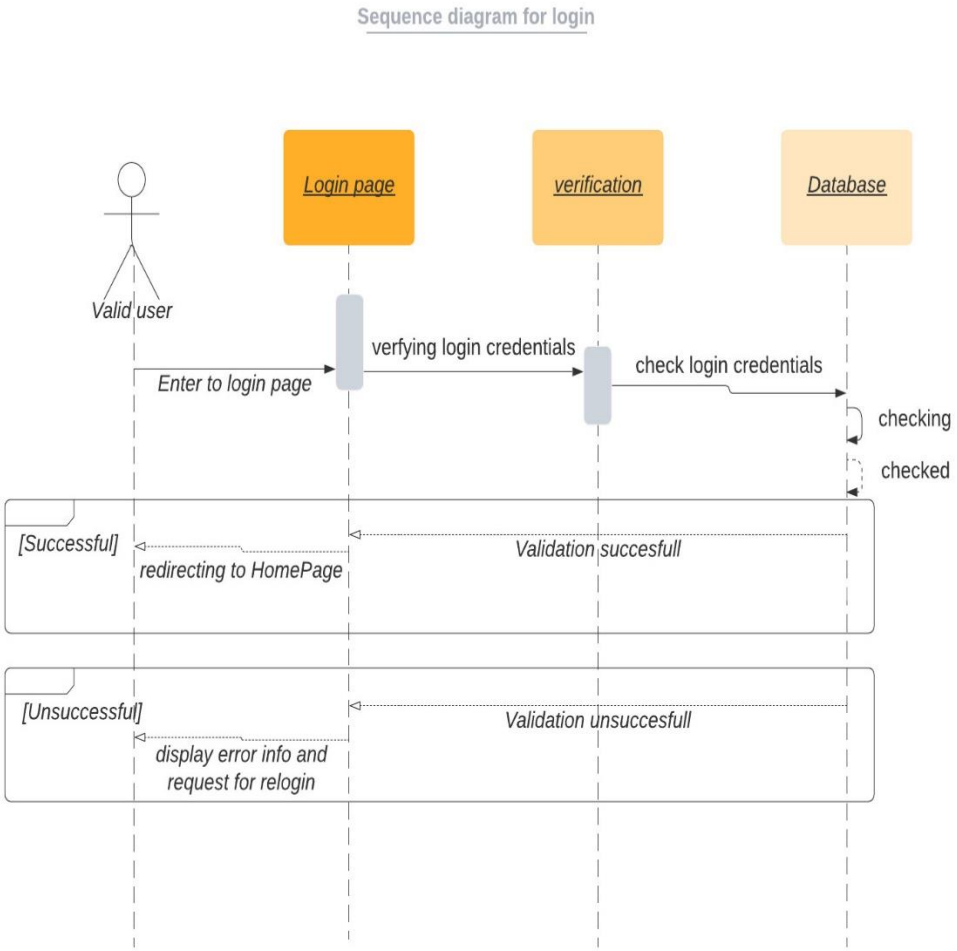

Figure 9: Sequence diagram for Login

4.4.2 SEQUENCE DIAGRAM FOR ADD QUESTION

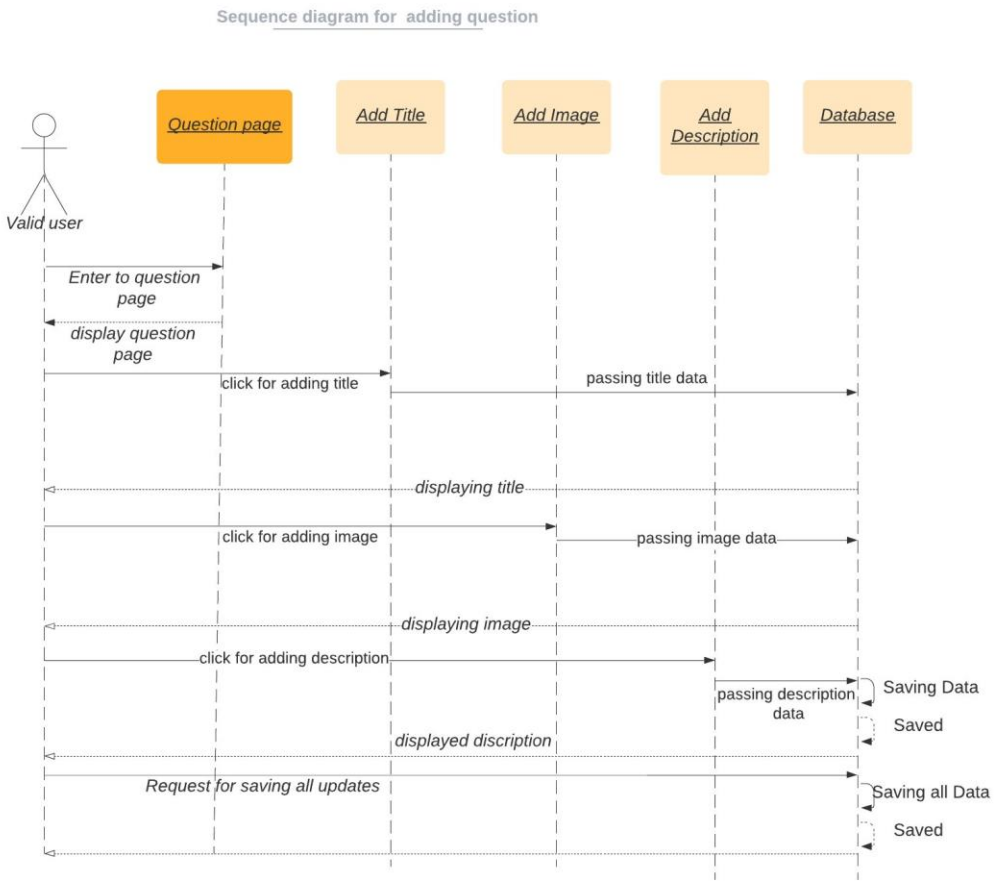

Figure 10: Sequence diagram for Adding question

4.4.3 SEQUENCE DIAGRAM FOR EDIT QUESTION

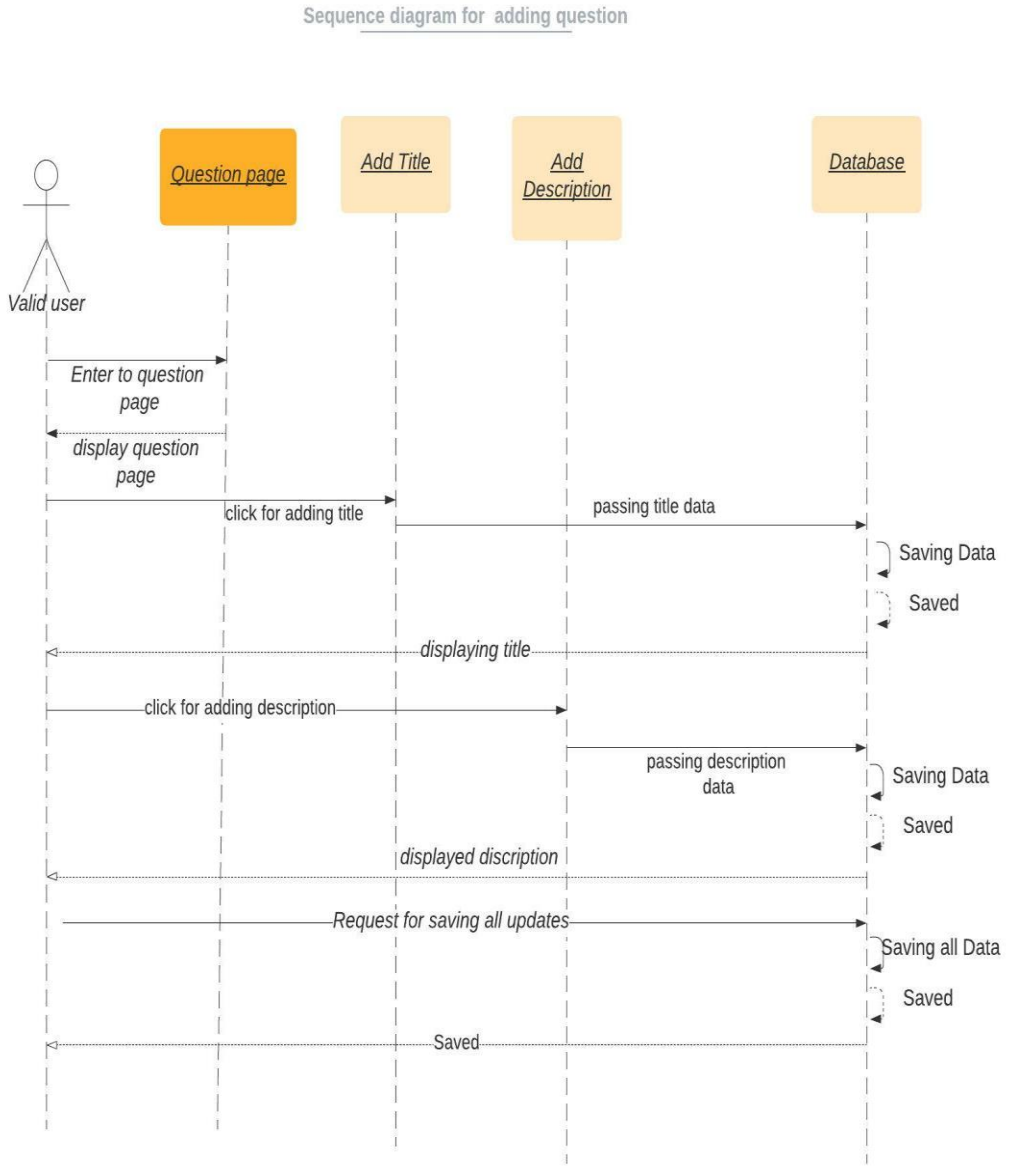

Figure 11: Sequence diagram for editing question

4.4.4 SEQUENCE DIAGRAM FOR SEARCH QUESTION

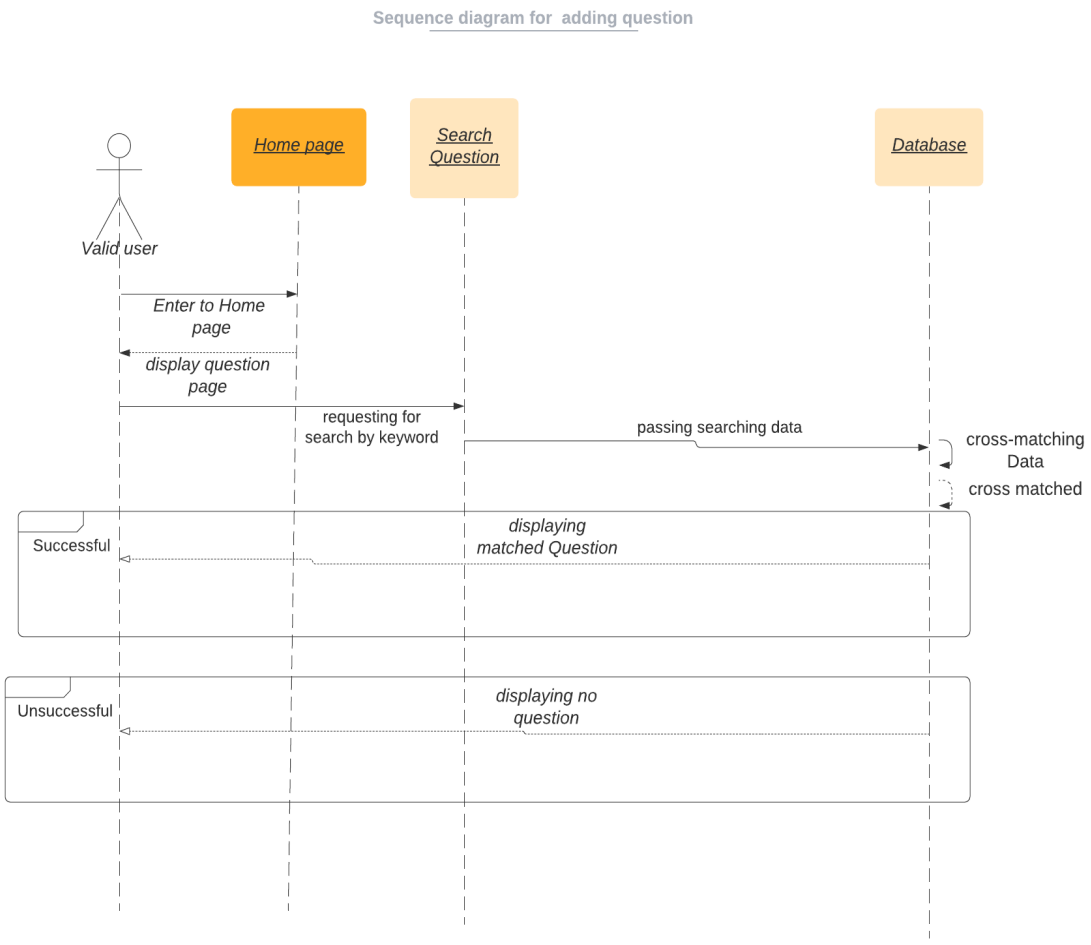

Figure 12: Sequence diagram for search question

4.5 ENTITY RELATIONSHIP DIAGRAM

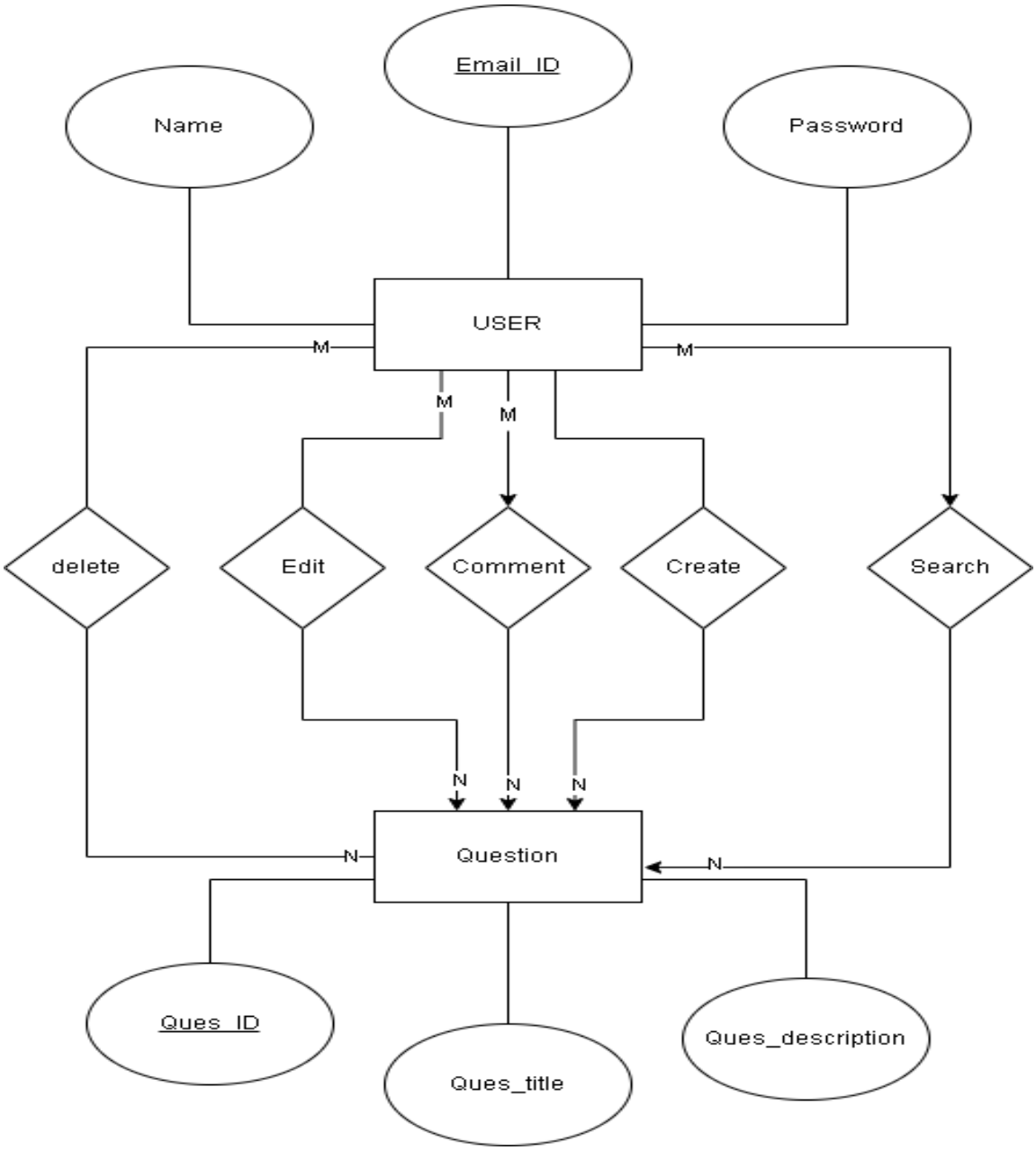

Figure 13: ER diagram for the whole system

CHAPTER 5

DEVELOPMENT TOOLS & TECHNOLOGY

5.1 Development Technology

1. HTML (Markup Language)
2. CSS (Cascading Style Sheet)
3. REACT (JS framework)
4. NODEJS (JavaScript)
5. MONGODB (DATABASE)

5.2 Development Tools and Platforms

1. Visual Code Studio (code editor)
2. Microsoft edge browser (Use as a live server)
3. CMD
4. Localhost

CHAPTER 6

USER INTERFACE

6.1 HOME PAGE

This Home page is for those who are not signed in. From there, they can view question, login and register.

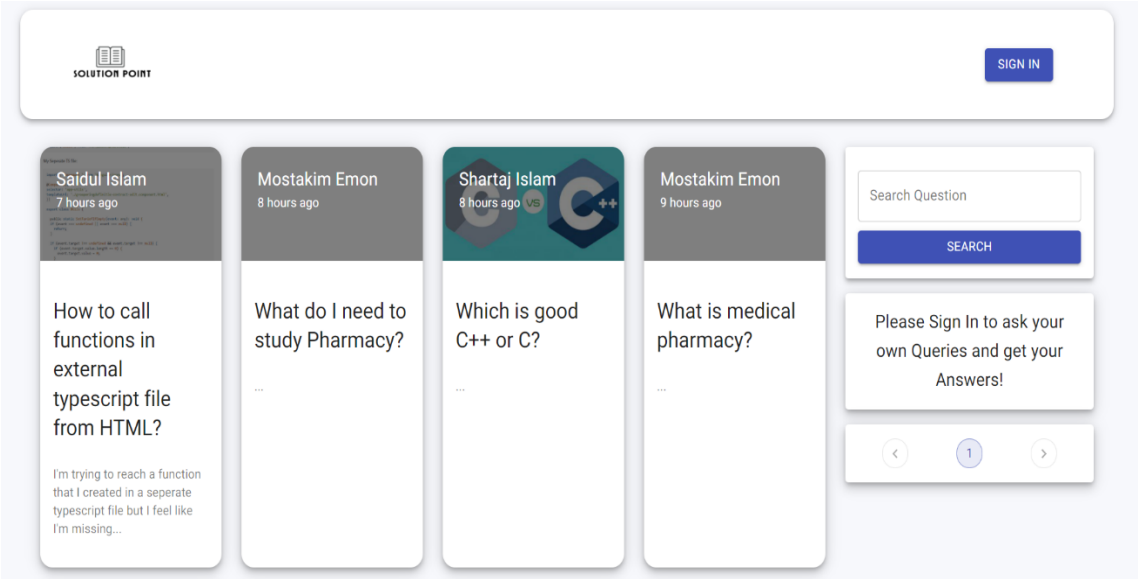

Figure 14: Home Page

6.2 Registration Page

From this page, user can register to this system using necessary credentials. They can also have a login option in case of having account.

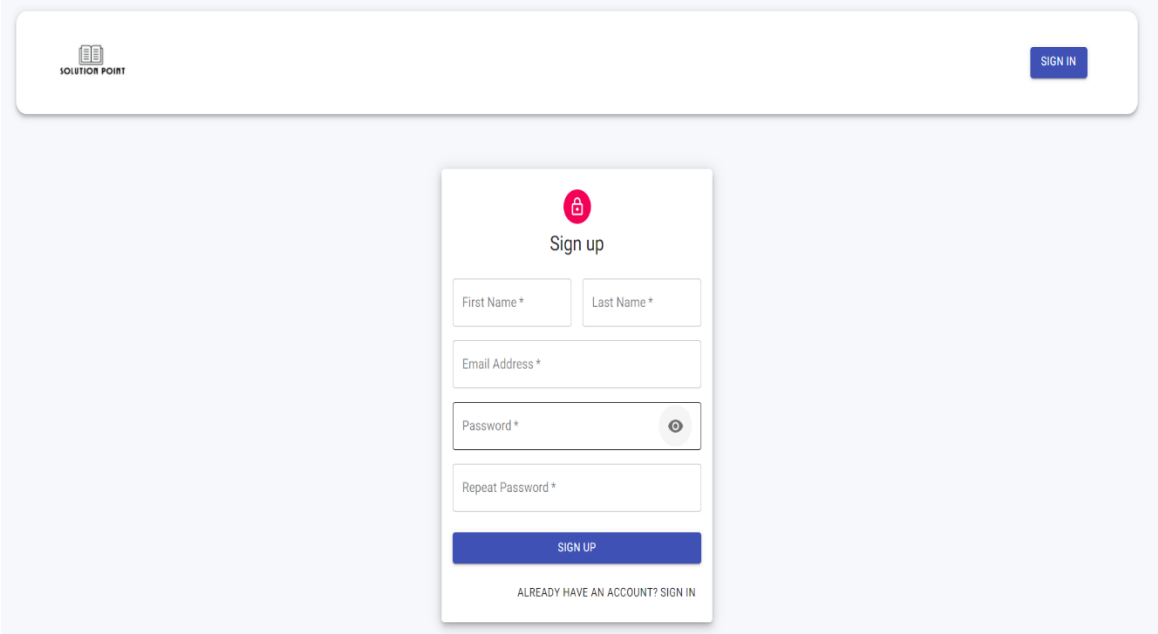

Figure 15: Registration Page

6.3 Login Page

User can login to the system using credentials.

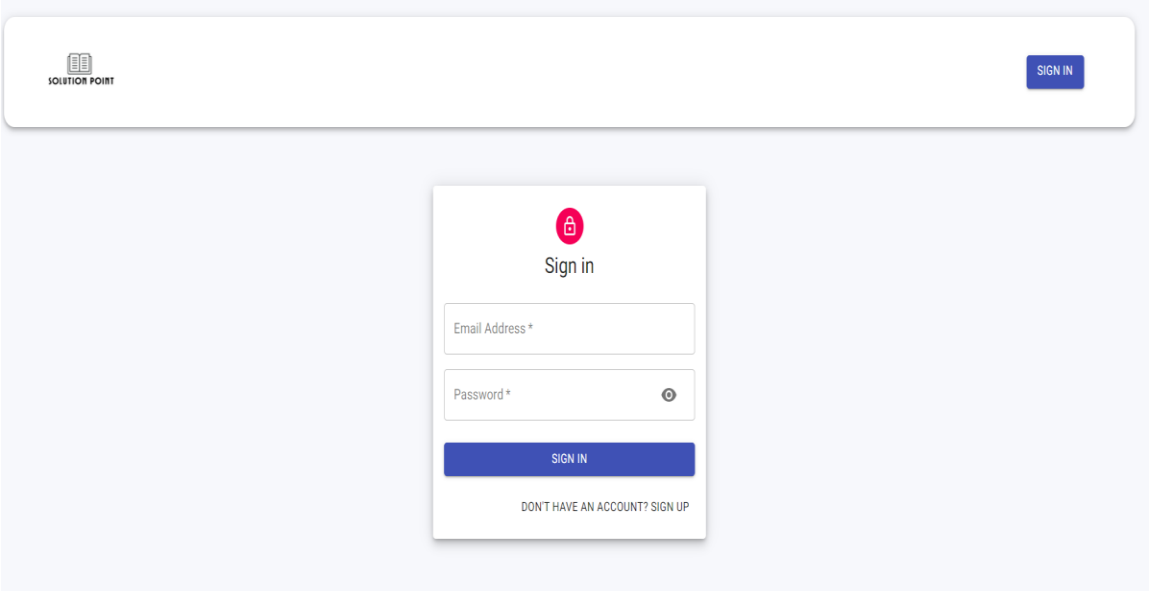

Figure 16: Login Page

6.4 Add and Search Question

User can post a query by filling out title, description as well as problem picture here, also user can search any question here.

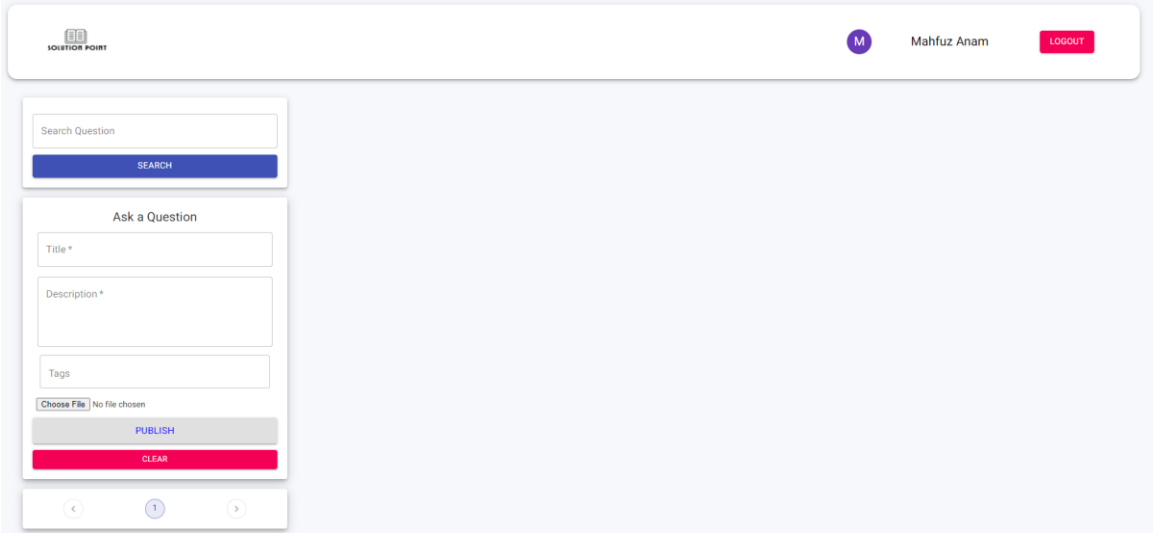

Figure 17: Add & Search Question

6.5 Edit Question

User can edit their existing question just clicking the edit Button placed beside author name (tipple dot button) or delete his/her question by tapping delete here.

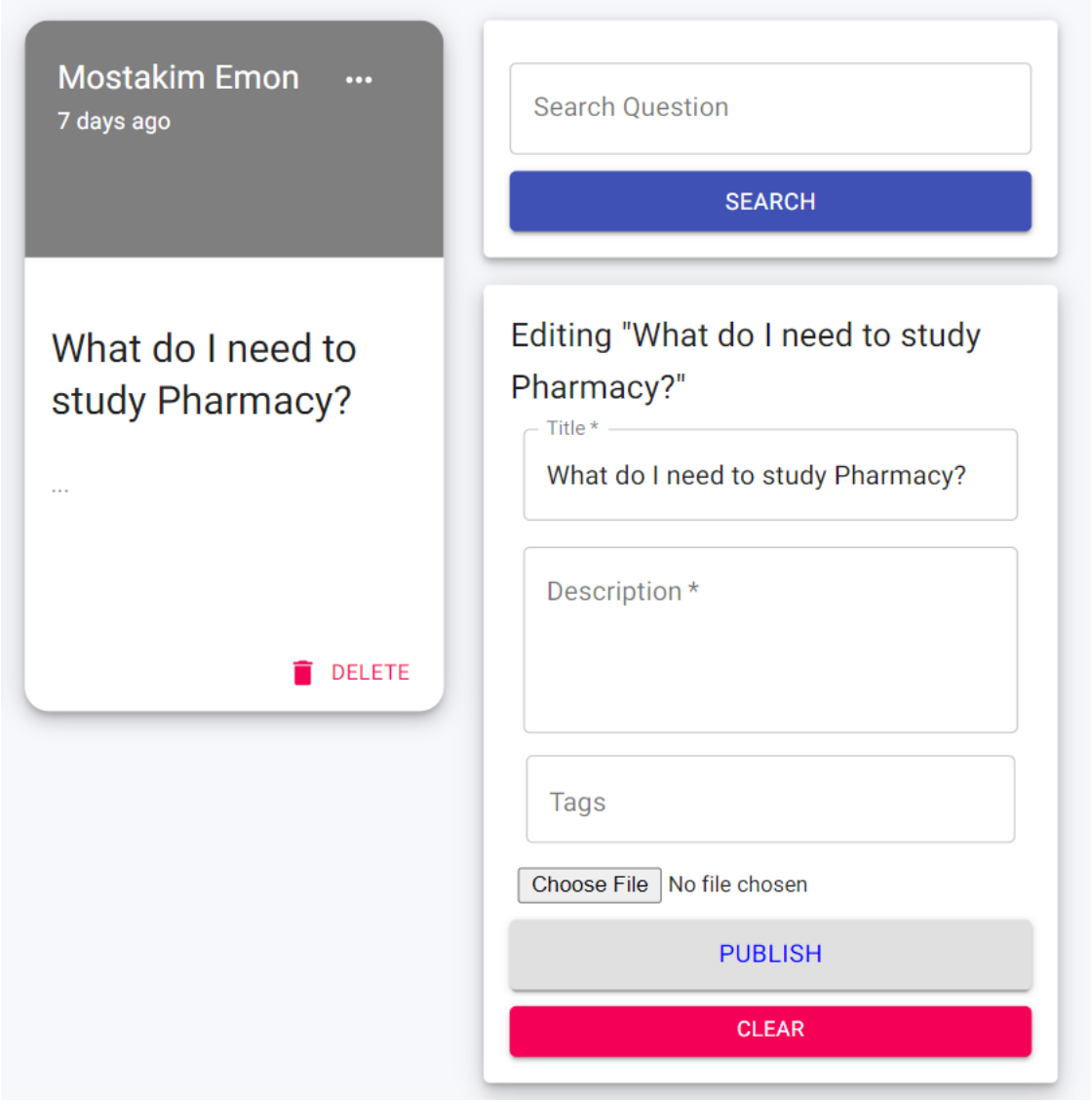

Figure 18: Edit Question

6.5 Query Details Page

User can view single query post in details by clicking on the query post.

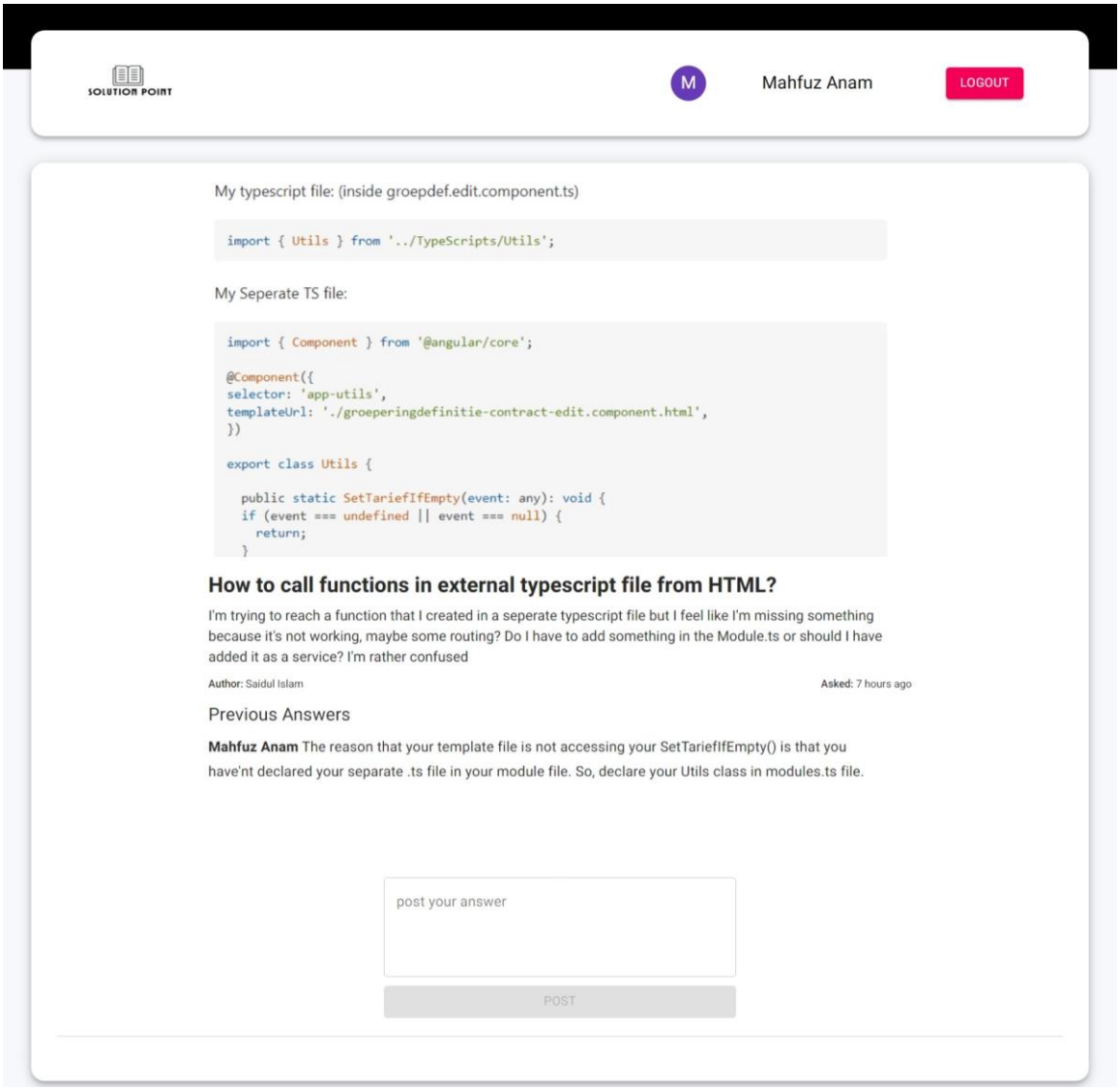

Figure 19: Query details page

CHAPTER 7

SYSTEM TESTING

7.1 INTRODUCTION TO SYSTEM TESTING:

SYSTEM TESTING is a level of testing that validates the full and integrated functionality of a software product. A system test evaluates the end-to-end specifications of a system. In most cases, the software is part of a larger computer-based system. As a result, the software interfaces with other software and hardware systems. The purpose of system testing is to exercise the complete computer system with a series of different tests.

Table 06: Test case for Registration

Test case: 01		**Test case name:** Registration		
System: Solution point		**Subsystem:** N/A		
Design by: Dreamality		**Design Date:**		
Executed by:		**Executed Date:**		
Short Description: Target of this case is that the user can register to the system.				
Precondition: User have to visit the dashboard				
Step	**Action**	**Response**	**Pass/Fail**	**Comment**
1	User data is saved to the database	System redirects the user to Login page	Pass	
Post Condition: User can login to the system				
Fail Case: If user provide a wrong information or pattern, it doesn't save the data				

Table 07: Test case for Login

Test case: 02			**Test case name:** Login	
System: Solution point			**Subsystem:** N/A	
Design by: Dreamality			**Design Date:**	
Executed by:			**Executed Date:**	
Short Description: Target of this case is that the user can login to the system.				
Precondition: User have to visit the dashboard				
Step	**Action**	**Response**	**Pass/Fail**	**Com ment**
1	User fill the login form	System redirects the user to main page	Pass	
Post Condition: User can visit the home page of the system				
Fail Case: If user provide a wrong information, they can't enter in the system				

Table 08: Test case for Post Question

Test case: 03		**Test case name:** Post Question		
System: Solution point		**Subsystem:** N/A		
Design by: Dreamality		**Design Date:**		
Executed by:		**Executed Date:**		
Short Description: Target of this case is to post a question				
Precondition: User have to put his/her query details into the form and submit it				
Step	**Action**	**Response**	**Pass/Fail**	**Comment**
1	User fill the form with details	Database will save it to the DB and show it on the dashboard section	Pass	
Post Condition: User have to login				
Fail Case: If there is no content in the Question page, nothing will show to the user.				

Table 09: Test case for Edit Question

Test case: 04		**Test case name:** Edit Question		
System: Solution point		**Subsystem:** N/A		
Design by: Dreamality		**Design Date:**		
Executed by:		**Executed Date:**		
Short Description: Target of this case is to edit a question				
Precondition: User have to put his/her query details into the form and submit it				
Step	**Action**	**Response**	**Pass/Fail**	**Comment**
1	User fill the form with details	Database will save it to the DB and show it on the dashboard section	Pass	
Post Condition: User have to login				
Fail Case: If there is no content in the Question page, nothing will change.				

Table 10: Test case for Search Question

Test case: 05		**Test case name:** Search Question		
System: Solution point		**Subsystem:** N/A		
Design by: Dreamality		**Design Date:**		
Executed by:		**Executed Date:**		
Short Description: Target of this case is to search a question				
Precondition: User have to put some keyword of his/her query post into the search bar and submit it				
Step	**Action**	**Response**	**Pass/Fail**	**Comment**
1	User fill some keyword into search bar	System will search for the keyword and show the search output on the dashboard section	Pass	
Post Condition: User have to visit the website				
Fail Case: If there is no content match to searched keyword, nothing will show to the user.				

Table 11: Test case for comment on Post

Test case: 06			**Test case name:** Comment on post	
System: Solution point			**Subsystem:** N/A	
Design by: Dreamality			**Design Date:**	
Executed by:			**Executed Date:**	
Short Description: Target of this case is to comment on question				
Precondition: User have to put some words or sentences as comment into comment section and post it				
Step	**Action**	**Response**	**Pass/Fail**	**Comment**
1	User put some comment into comment section	Database will save it to the DB and show it on the dashboard section	Pass	
Post Condition: User have to login				
Fail Case: If there is no comment posted, nothing will show to the user.				

CHAPTER 8

PROJECT SUMMARY

8.1 Limitations

- It is not yet uploaded to live server or hosted yet.
- Email Server is weak and not yet developed.
- Comment cannot be edited or replied.
- Forget password system is not yet developed.

8.2 Scope of Future Development

- Site will be uploaded to live server.
- Google authentication will be added.
- Alteration of comment will be implemented.
- Real time notification system will be added.

8.3 Obstacles and Achievement

Obstacles:

- Getting used to a new technology and environment is a challenge.
- It is extremely difficult to finish work within a short period of time.
- Code complexity is also an obstacle to implement this system.

Achievement:

- Developed the project successfully.
- Learned about new tools and technology.
- Deploying a project is an entirely new experience.
- Had a Deep knowledge about report writing.

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