PRASA - AN ALUMNI INTERACT PLATFORM

A PROJECT REPORT

Submitted

in the partial fulfillment of the requirements for

the award of the degree of

BACHELOR OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

COLLEGE OF ENGINEERING *(Autonomous)*

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
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With Gratitude,

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ABSTRACT

College is a unique and once-in-a-lifetime experience. It acts as a turning point to decide what to become in life. Students are often perplexed in having decisions related to their careers. Supportive interactions with peers can influence overall career development. Students who are currently in college might need some valuable suggestions to pursue their careers of interest. Graduates are a source of inspiration for the students. Especially the suggestions from their seniors and Alumni of college will help students in a better way.

The idea is to build a platform that facilitates students to interact with the Alumni and have some suggestions from them. This platform allows students to stay connected to their Alumni. This platform also provides an opportunity for students to interact with alumni for career guidance and let students know about the experiences of alumni in their field of work.

This proposed system contains a feature for posting questions by students in a particular category. The questions asked can be viewed in that particular category. Any user can answer the question if he/she feels to do so. A question can have multiple answers with a name tag of the answered person. There is a search feature where the previously asked questions can be searched. The results with the related questions and answers will be displayed to the user. Only valid users, that is the people who belong to the JNTUA college can register to this platform.

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1. INTRODUCTION

1.1 Motivation

College is a unique and often once-in-a-lifetime experience. Supportive interactions with peers can influence overall career development. Students who are currently in college might need some valuable suggestions to pursue their careers of interest. Graduates are a source of inspiration for the students at their alma mater.

The growing significance of websites for various organizations is well known. So, the idea is to build a platform where the students in the college can interact with our alumni and ask their doubts regarding their careers, higher studies, our JNTUA college, scholarships, and many more.

1.2 Problem Statement

Students still in the college pursuing their degree want to connect with the passed-out alma mater and learn from their experiences and the alumni too may be willing to share their experiences but just can't find the accurate platform to be able to communicate with the students.

1.3 Objective

- To create a profile for the students and alumni.
- To get the required questions from students.
- To make the questions visible to alumni.
- To allow alumni to submit their views over the query and be able to give the perfect answer.
- To enable students to view the answers for different similar queries.
- To enable students to search for similar queries that have been asked so far.
- To differentiate the questions over categories.

1.4 Scope of the Project

The **Alumni Interact** website can be accessed by anyone who wishes to know about the queries. They can access the website through their login credentials if they belong to the college. The alumni can log in through the website and see the queries raised. The students can log in through the website and see the similar queries raised and answers to them. The project can be deployed, and it is a quick start. It can be handed over to the students still in college and more features can be added to the web application.

CHAPTER - II

2. LITERATURE SURVEY

2.1 Introduction

A web application is an application program that is usually stored on a remote server, and users can access it using software known as a web browser. It is a type of computer program that usually runs with the help of a web browser and uses many web technologies to perform various tasks on the internet.

A web application can be developed for several uses, which can be used by anyone like it can be used as an individual or as a whole organization for several reasons. In general, a web application can contain online shops (or we can also say e-commerce shops), webmail, calculators, social media platforms, etc. There is also some kind of web application that usually requires a special kind of web browser to access them. We cannot access those kinds of web applications by using regular web-browsers.

However, most of the web applications available on the internet can be accessed using a standard web browser. If we talk about the web application in general, a web application usually uses a combination of server-side scripts such as PHP, and ASP, for handling the information/ data storage and retrieval of the data.

Some of them also use client-side scripts such as JavaScript, and HTML to represent the data/information in front of the users, and some of the web applications are also using both server-side and client-side at the same time.

It allows the users to communicate with the organization or companies by using the online form, online forums, shopping carts, content management system, and much more. Apart from that web applications also allow their users to create documents, share them, or share the data/ information.

By using the web application, users can collaborate on the same projects during the event when they are not available in the same geographical location.

2.2 Existing System

At present all the queries that are raised are asked over Facebook or Instagram pages. Or if they know any senior or alumni, they'll approach them personally which

is not available for every student. It is also difficult to get information regarding ongoing activities in the college. It also takes more time to get the information for the query.

2.3 Proposed System

The proposed system is to make an online web application where these queries are grouped to get the answers from the alumni. The alumni can also be able to interact with the students still in college.

CHAPTER - III

3. SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Introduction

The software requirements specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioural description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

Software Requirement Specification (SRS) is the starting point of the software development activity. It is a complete description of the behaviour of a system which is to be developed. The SRS document enlists all requirements for project development. It minimizes the time and effort required by developers to achieve desired goals and also minimizes the development cost.

3.2 User Requirements

There are two users for this system, students and alumni.

Requirements for Students are:

A student can browse through the website with good Internet Connectivity. The **Alumni Interact** web application is a responsive webpage so the student can access it even through mobile phones in a smooth manner.

Requirements for Alumni are:

An alumni member can sign up using his/ her email and the registration number provided to him/ her while in college. He/ she can log in with the email address later. For registration, besides email address and password, an alumni member needs to provide the batch he/ she belongs to. Good internet connectivity, a system, and a browser are needed.

3.3 Functional Requirements

A functional requirement describes the service that the software must offer. It describes a software system or its component. A function is nothing but inputs to the software system, its behaviour, and outputs.

Functional Requirements of our proposed system include:

1. **Create a profile:**

   A profile is created for the student and alumni as soon as they sign up in the web application with the date and time mentioned and we allow them to log in with their credentials by authenticating them with the registration number in our database as this application is exclusively for JNTUA College.

2. **Ask a question:**

   As soon as the user login, the web application allows them to ask a question by mentioning the category of the question. If the user is not sure about the category, the 'others' can be used. The question should be in a diplomatic way.

3. **Submit answer:**

   Alumni can be able to view the questions by clicking the categories they are interested in and are proficient in and answer the question with the relative information.

4. **Search for the question:**

   A student can be able to search for the question from the search bar on the home page and can view the results on the home page itself. If the user finds "no results", the user can post the same query in the question section.

5. **Categories:**

   The queries are segregated into different categories such as Career, Higher Studies, about JNTUA College, Scholarships, and others.

6. **Contact:**

   If the user finds experiences any difficulties while logging in or signing up, the user can contact the admin panel as provided on the contact page.

3.4 Non - Functional Requirements

A non-functional requirement is a specification that describes the system's operational capabilities and constraints that enhance its functionality.

Non-Functional Requirements of our proposed system include:

A. **Reliability:**

   Reliability shows how long the system can work without any technical issues leading to the failure of the operation. Our system includes users engaged. Every student and every alumnus of JNTUA can be able to use the web application.

B. **Security:**

   Our system has its security by not revealing the details of students and alumni. Illegal access to other information is prevented. And the system doesn't encourage outsiders of the college to log in and use the web application.

C. **User-Friendly Interface:**

   Buttons, icons, search bars everything must be functional, easy to navigate, and simple to use for an average learner.

D. **Contact support:**

   If the user gets into trouble logging in/ signing in, he/ she can contact the admin panel and can be assured of a quicker response.

3.5 Software Requirements

- Operating System : Windows 7/8/10, MAC, Android etc.
- Database : MySQL
- Programming Languages : HTML, CSS, JavaScript, PHP
- Tools : Atom, Visual Studio Code, Chrome

3.6 Hardware Requirements

- RAM size : 4 GB
- Hard Disk capacity : 1 GB

CHAPTER - IV

4. DESIGN

4.1 Introduction

The project design is the central component in the project life cycle and its preparation is a complex task. This phase focuses on the detailed implementation of web application design. The **Alumni Interact** web application is to make an online web portal for JNTUA College so that every student can get information regarding their queries, students can easily communicate with alumni from anywhere. In system design, two phases are important one is a logical and physical phase.

During the logical design phase, the analyst describes inputs (sources), outputs (destinations), databases (data stores), and procedures (data flows) all in a format that meets the user requirements. The analyst also specifies the user needs at a level that virtually determines the information flow into and out of the system and the data resources. Here the logical design is done through activity diagrams and sequence diagrams.

The physical design is followed by coding. The physical design produces the working system by defining the design specifications. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data through call and display it on screen.

4.2 UML Diagrams

Unified Modelling Language (UML) is a general-purpose modelling language. It describes the boundary, structure, and behaviour of the system and the objects within it. UML is not a programming language, but some tools can be used to generate code in various languages using UML diagrams. UML has a direct relation to object-oriented analysis and design.

It is a standard language for specifying, visualization, constructing, and documenting the artifacts of software systems, as well as for business modelling and other non-software systems. It represents the collection of best engineering practices that have proven successful in the modelling of large and complex systems. It uses mostly graphical notations to express the design of software projects.

4.2.1 Use case Diagrams

A Use case diagram is a dynamic or behaviour diagram in UML. Use case diagrams to model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform. Use case diagrams to specify how the system interacts with actors without worrying about the details of how the functionality is implemented.

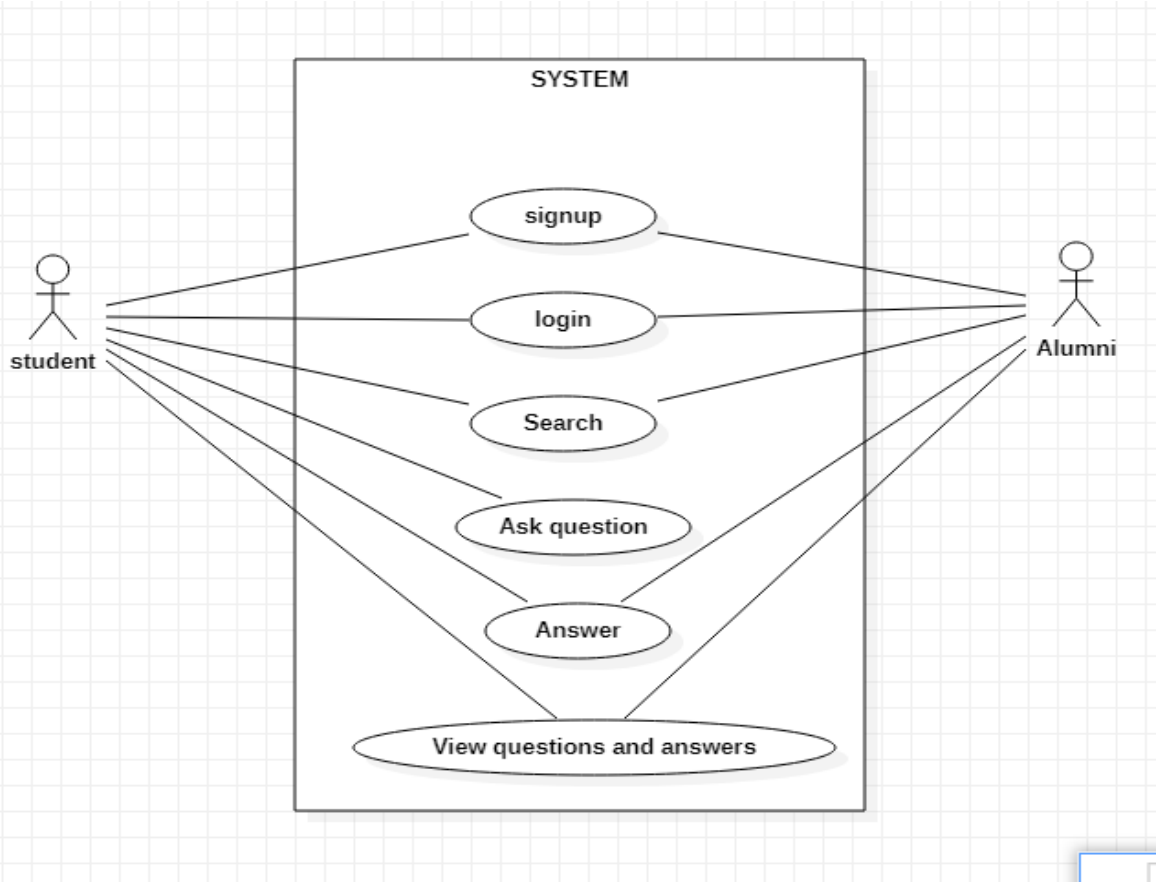

Fig 1: System use case diagram

4.2.2 Activity Diagram:

In UML, the activity diagram is used to demonstrate the flow of control within the system rather than the implementation. It models concurrent and sequential activities. The activity diagram helps in envisioning the workflow from one activity to another. It emphasized the condition of flow and the order in which it occurs. The flow can be sequential, branched, or concurrent, and to deal with such kinds of flows, the activity diagram has come up with a fork, join, etc.

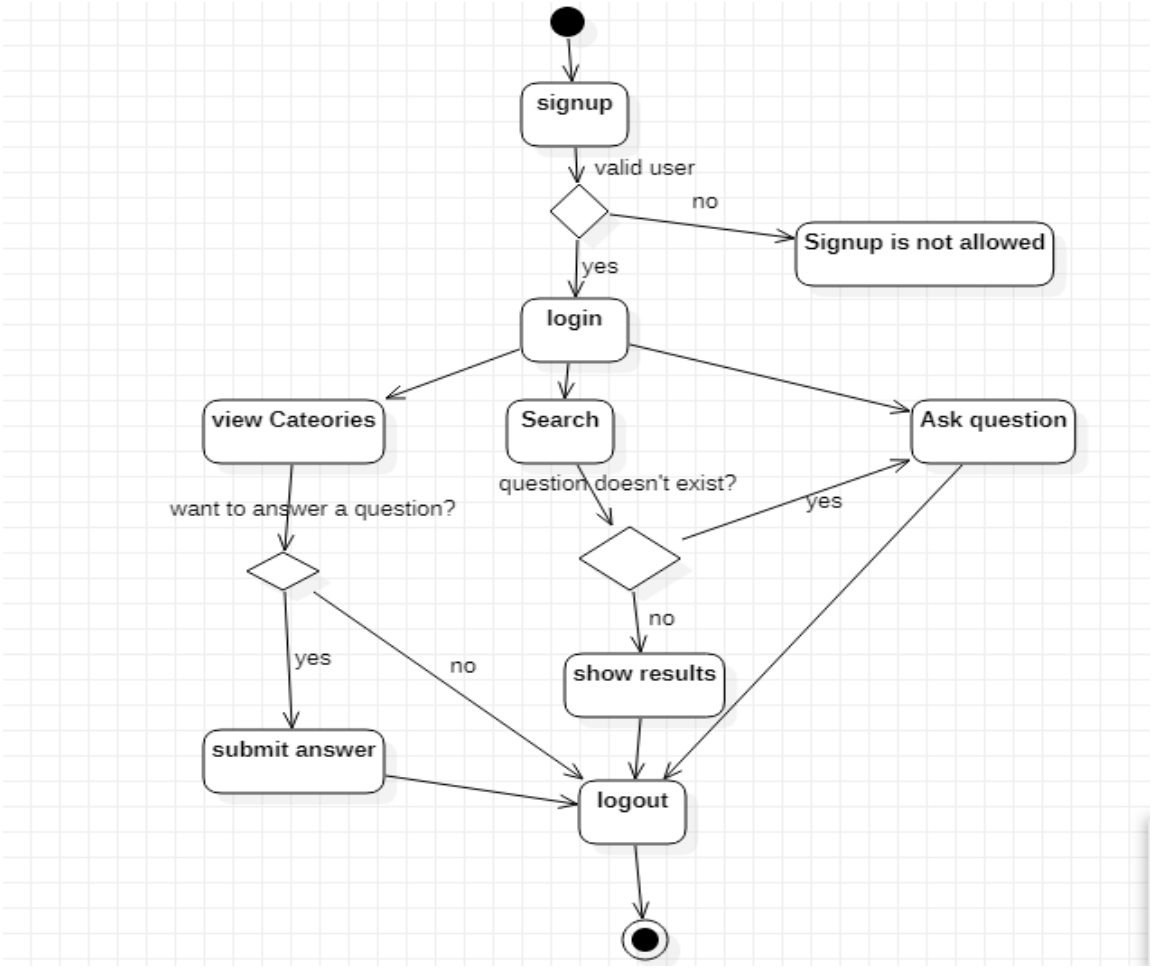

Fig 2: Activity diagram of the whole system

4.2.3 Data Flow Diagram:

A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various subprocesses the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships.

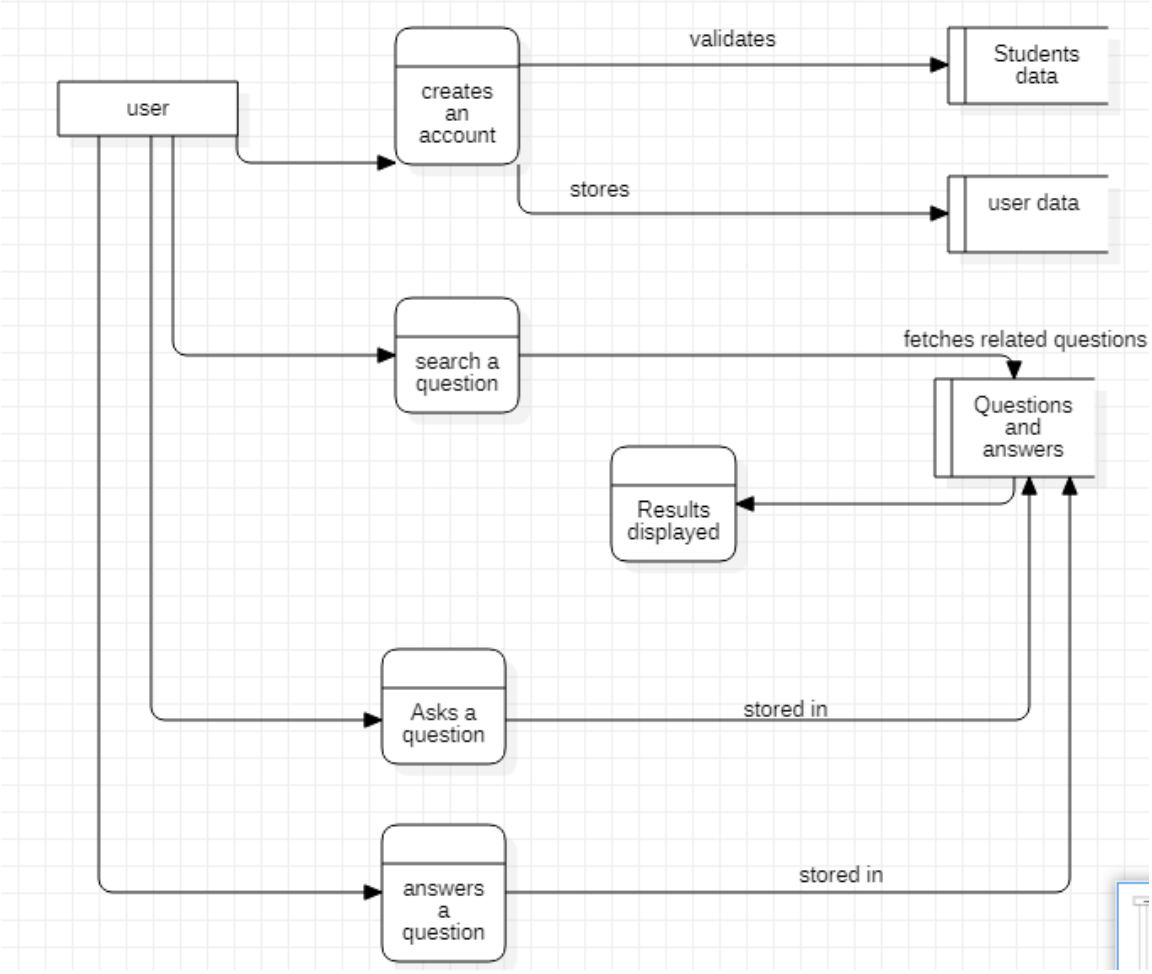

Fig 3: Dataflow diagram

4.2.4 Sequence Diagram:

The purpose of a sequence diagram is to model high-level interaction among active objects within a system. To model interaction among objects inside a collaboration realizing a use case. It either models generic interactions or certain instances of interaction. A sequence diagram simply depicts the interaction between objects in sequential order i.e., the order in which these interactions take place.

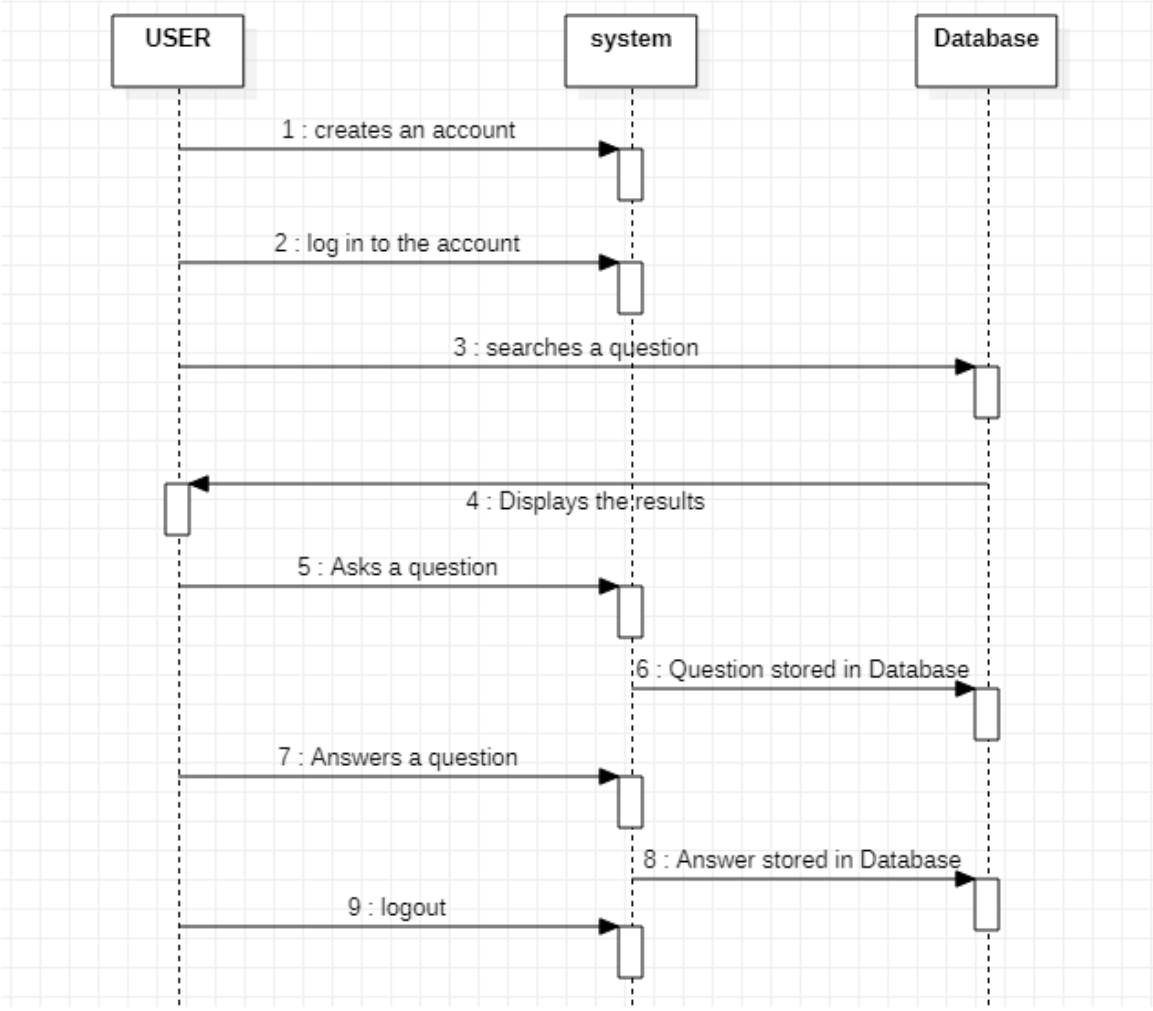

Fig 4: Sequence diagram

4.3 Module design and organization:

The modules of this project are:

1. Home
2. Categories
3. Ask Question
4. Sign Up
5. Login
6. Contact
7. Profile
8. Logout

1. Home Page:

The home page consists of a search bar, where users can enter questions. It consists of various buttons like categories, ask questions, signup, and login which redirect to the respective pages.

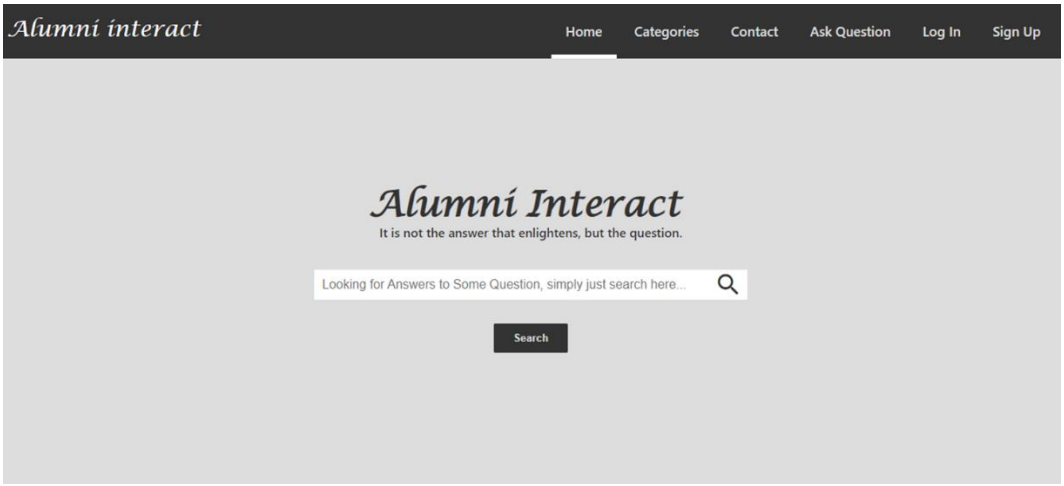

Fig 5: Home Page

A. Search for the question

We can search for the questions that already exist in the database.

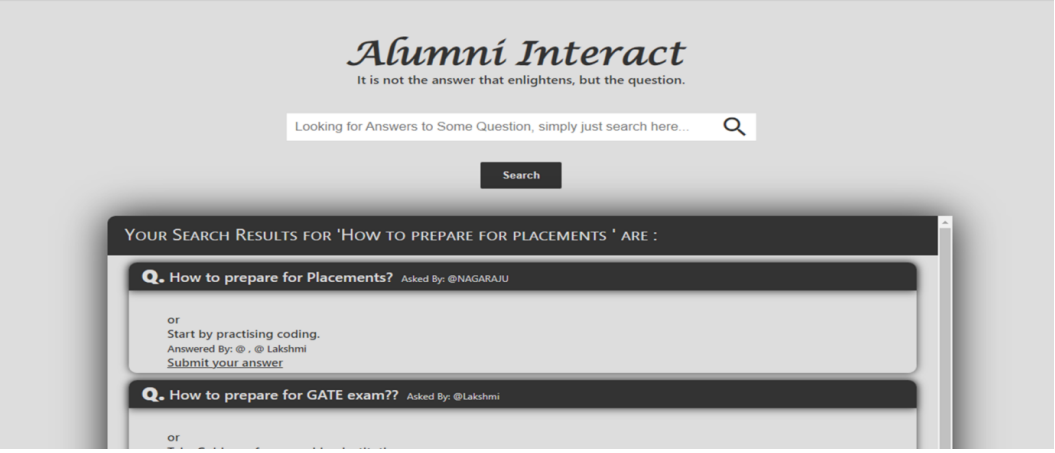

Fig 6: Search Results

B. Search Error

If the question box is submitted without entering anything, we'll get a pop-up message asking us to enter something.

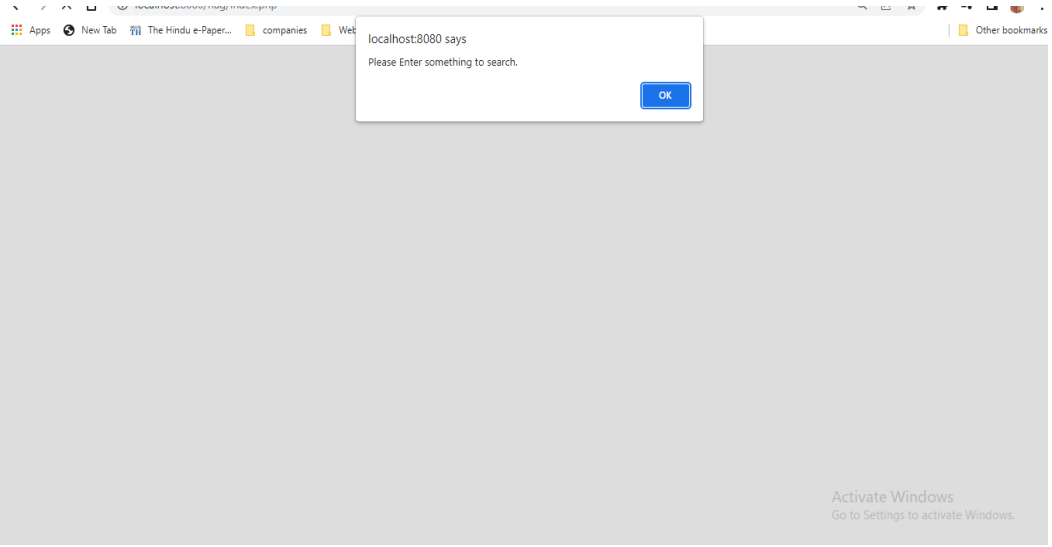

Fig 7: Search Error

2. Categories:

This page/module consists of various categories(buttons). The category type can be seen by hovering the mouse over it. There are five categories present. They are:

A. Career
B. About JNTUA college
C. Higher education
D. Scholarships
E. Others

By clicking these categories, one can be able to view all the questions and answers of that category.

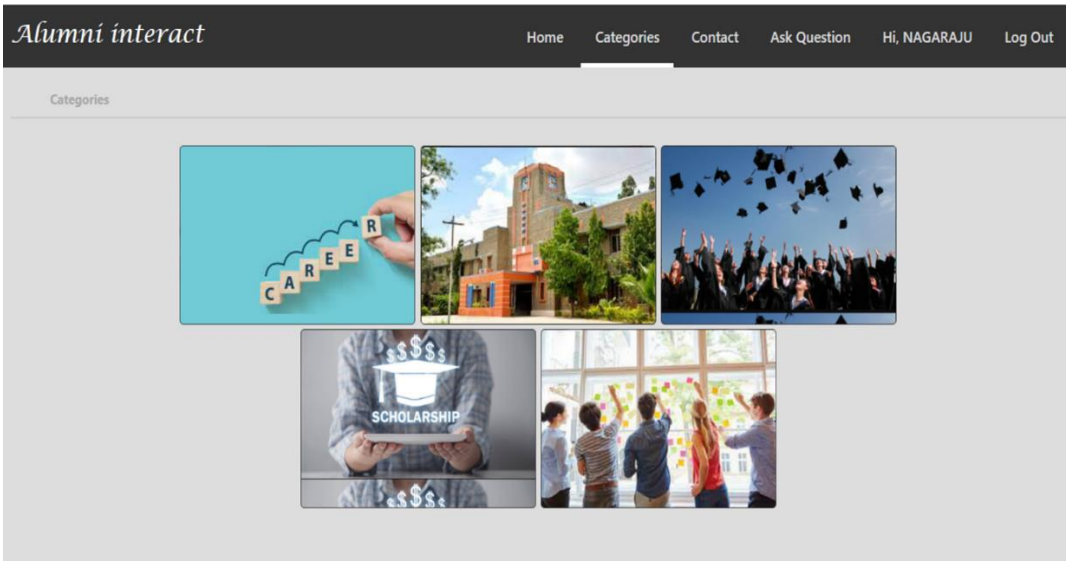

Fig 8: Categories page

On hovering over the images, the respective category name can be seen like ‘higher studies category’ as seen in below picture:

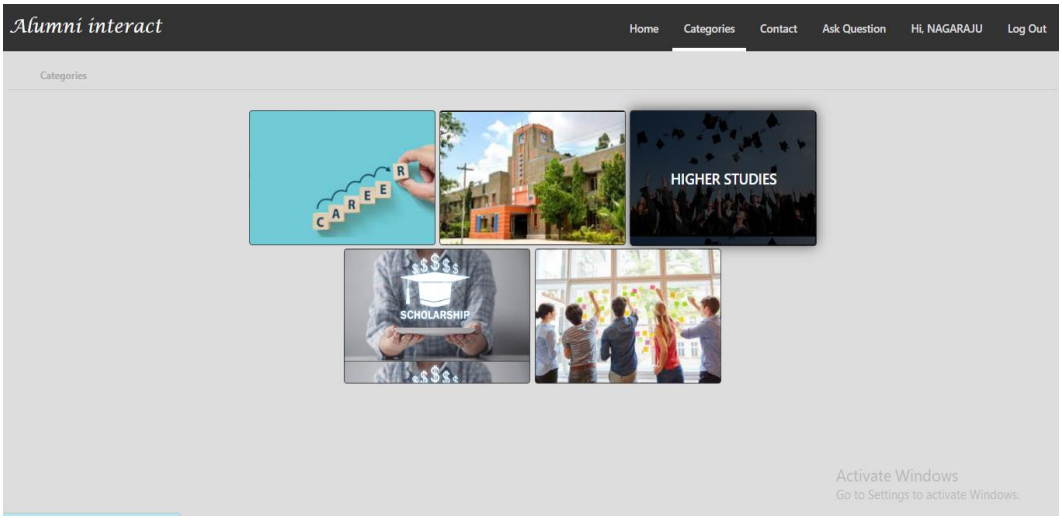

Fig 9: Hovering over Categories

On selecting the category, the questions under that particular category will appear.

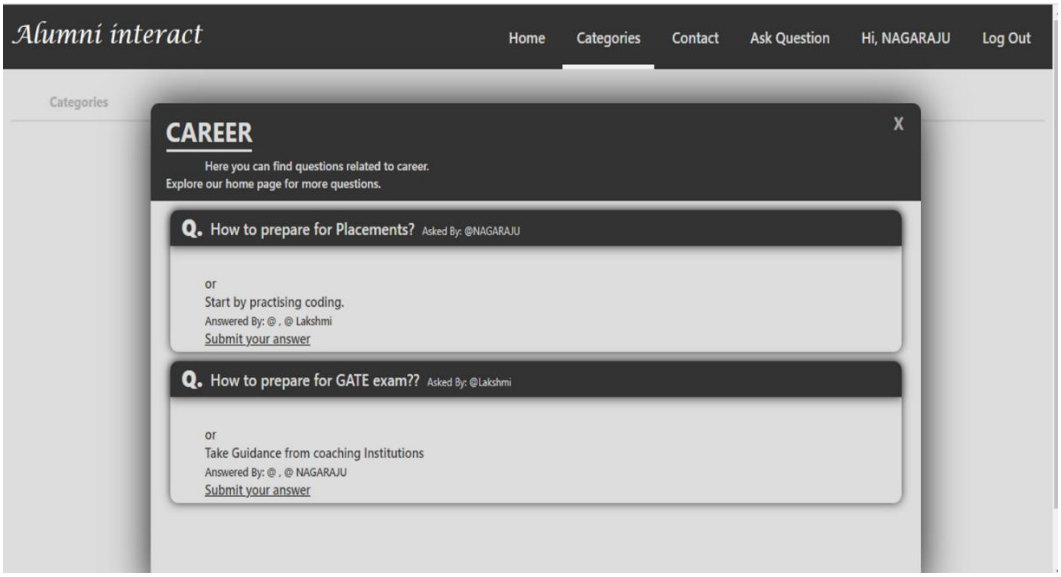

Fig 10: Questions in a Particular Category

3. Ask Question:

Here the users can be able to submit their questions by mentioning the category. If the category is unknown or miscellaneous, the category can be chosen as ‘others’.

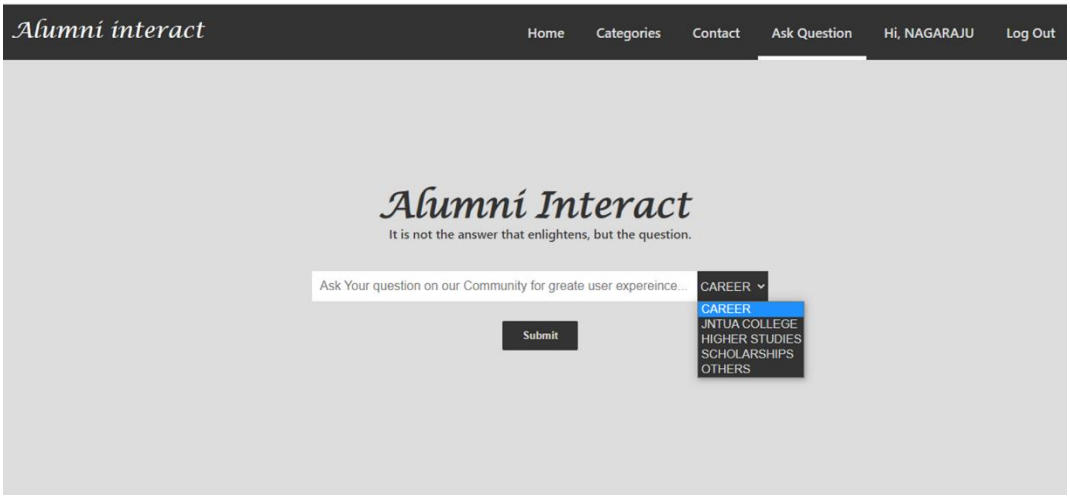

Fig 11: Ask Question Page

A. Question already exists:

If the user asks a question which is already been asked before and is in the database, a dialogue box pops up which says “Question was already asked! Search it on Home Page”.

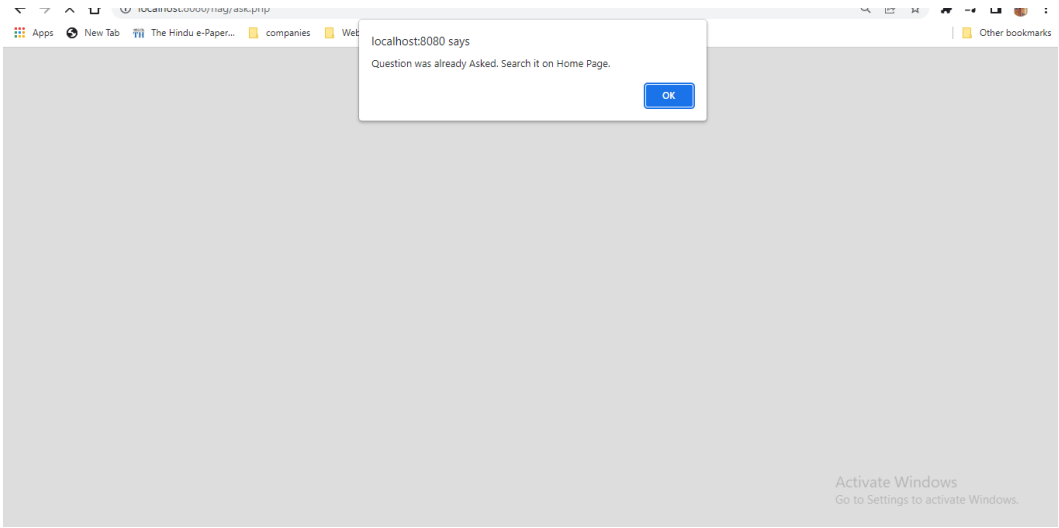

Fig 12: Question Already Exists

B. Blank question cannot be submitted:

If the user tries to submit without entering any question a dialogue box pops up which says, 'Blank question cannot be submitted'.

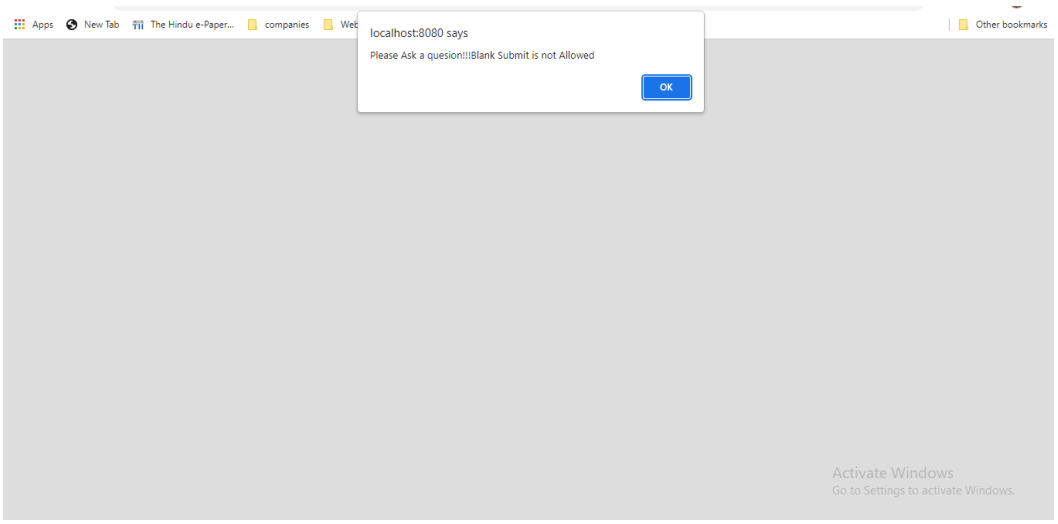

Fig 13: Blank Question not accepted

C. Thank You, Page:

Once the question is submitted, the "Thank you page' will appear as shown below:

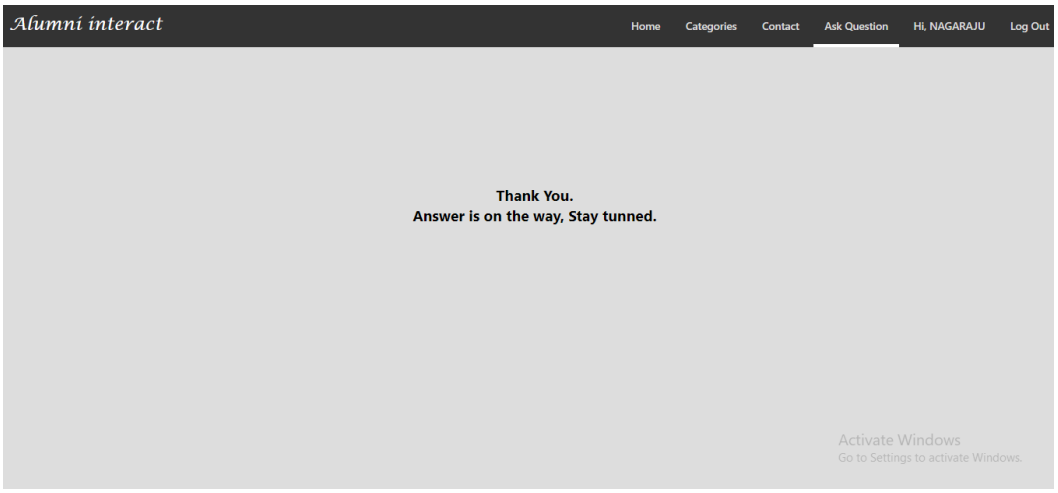

Fig 14: Thank you page

4. Sign Up:

The placeholders are as shown in the below figure while signing up.

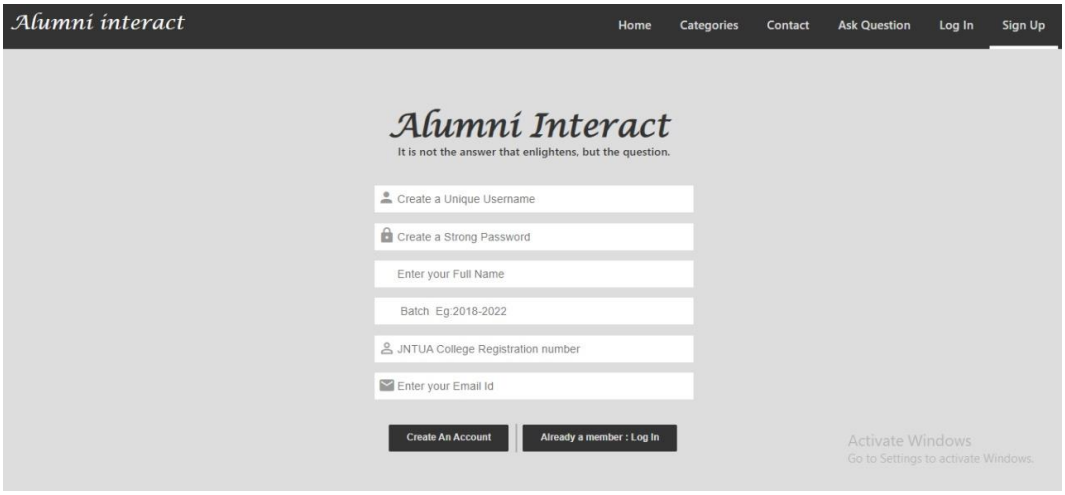

Fig 15: Signup page

A. Not Eligible to sign up:

If the registration number is incorrect, a dialogue box will pop up that shows the entered registration number is incorrect.

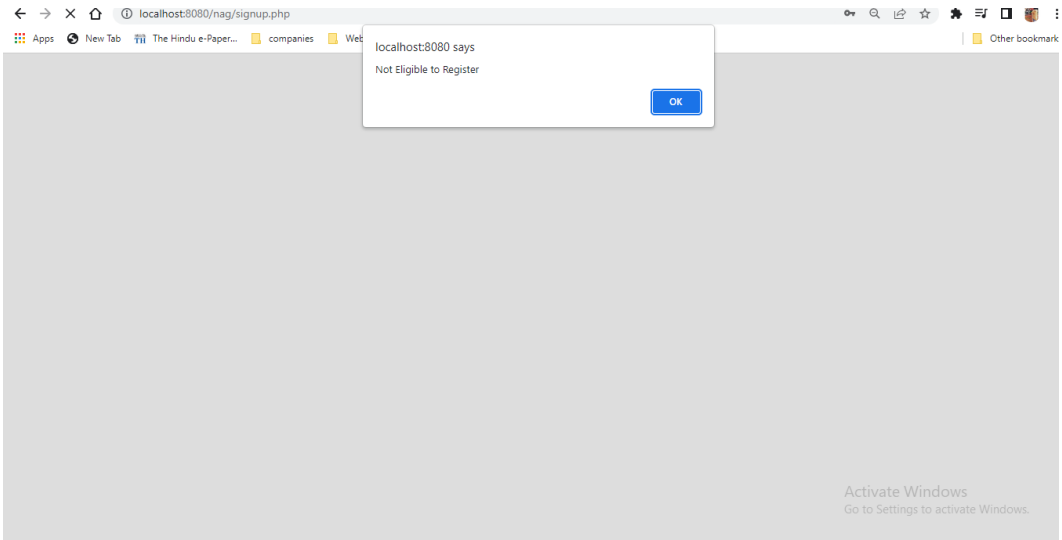

Fig 16: User validation

5. Login:

If the user already has an account, the user can click on "**Already a member: Login**" or can click on the **login** in the navbar.

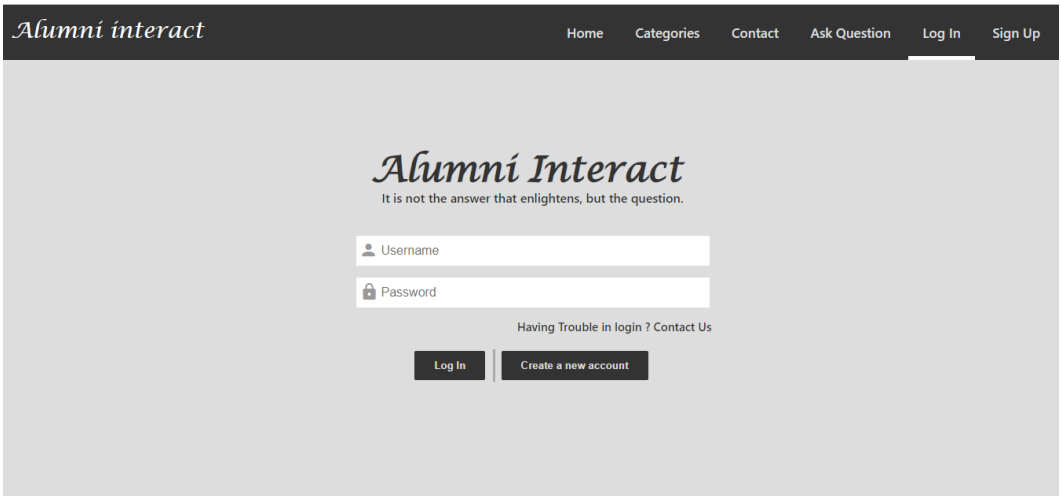

Fig 17: Login page

A. Credentials incorrect:

If the entered credentials are incorrect a warning pop-up will be displayed.

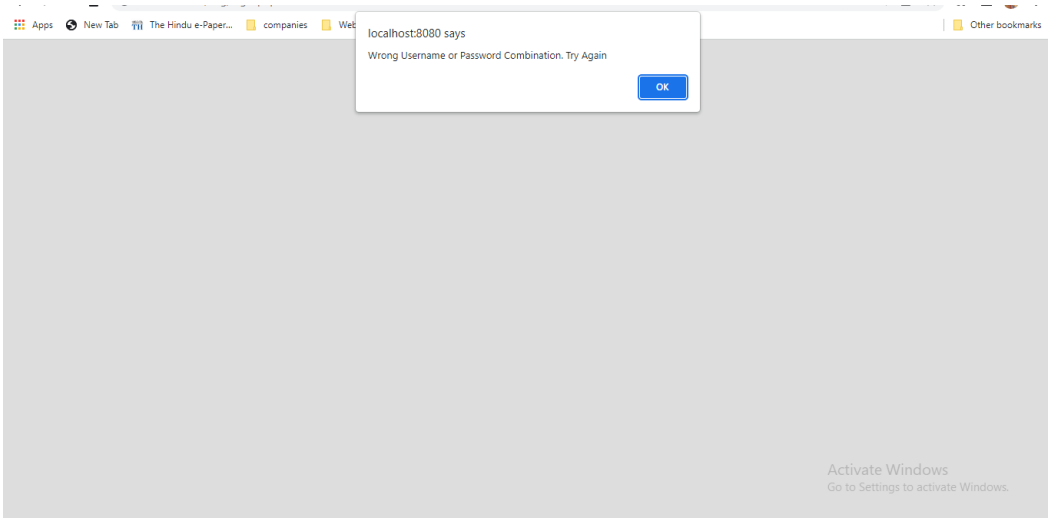

Fig 18: Invalid Credentials entered

6. Contact:

For further queries regarding the login/signup issues, the user needs to contact the admin panel.

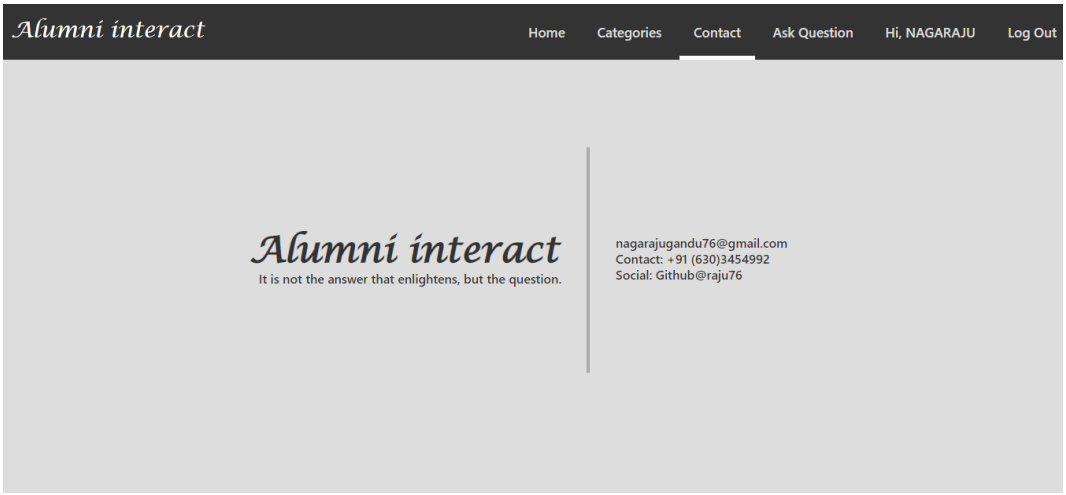

Fig 19: Contact page

7. Profile:

The profile is created as soon as the user joins the application with the date and time and any edits are prohibited i.e., the user cannot change the username, email, or registration number.

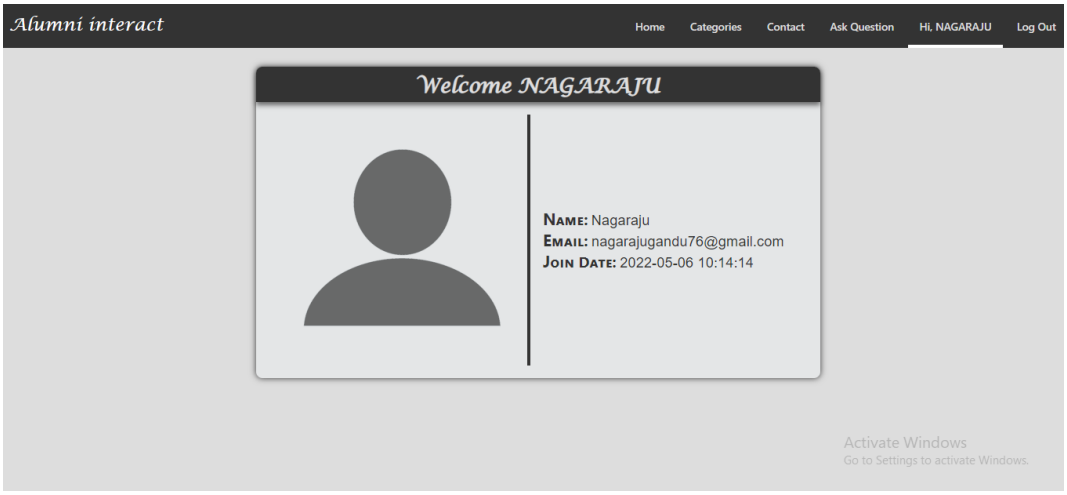

Fig 20: Profile page

8. Logout:

After successful completion of the session, the user can log out by clicking it on the top right corner. The user will be then redirected to the home page.

CHAPTER - V

5. IMPLEMENTATION

5.1 Introduction

Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operates the system. The validity and proper functionality of all the modules of the system are assured during the process of implementation. It is the process of assuring that the information system is operational and then allowing the user to take over its operation for use and evaluation.

5.2 Methods of Implementation and Results

There are six minor steps followed for implementing this system:

1. Planning

Planning is crucial for the successful implementation of a social media (alumni interact) platform. We set up a communication plan between our members before implementing this system. We considered some key points which help in the implementation of this system. What is the objective of our platform, what are the configurations needed for our platform, what are the external integrations needed, and what are the maintenance steps needed for the system?

2. Configuration

There are many assets considered for this platform such as networks, operating systems, data stores and servers. Not configuring these assets will degrade the performance of this platform. Configuring is one of the important steps in implementation.

Below are some of the configurations needed for our platform:

- Information stored in user profiles.
- Security permissions for each role.

- Metadata tags used for search and selection.

3. Integration

Most social media platforms can integrate with other solutions, making it easy to update and access critical information. Here are some of the common integrations for our web application:

- Integrating user accounts with the application.
- Keywords that navigate the user to those classified questions.
- Dividing the questions into categories.
- Integrating questions and the answers that question will get.
- Entering the word “or” in-between every answer.

4. Testing

Testing checks the entire alumni interact web application to ensure it’s working properly, with no errors or bugs. A good start is to prepare a list of all actions that various users perform with this system. Need to identify the input and expected output of the system by forming various test cases. Debug the bugs if any. Errors and Bugs are loopholes in the system which degrade the performance of the system.

CHAPTER - VI

6. TESTING & VALIDATION

6.1 Introduction

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design, and coding. Testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. Testing is the set of activities that can be planned and conducted systematically. The underlying motivation of program testing is to affirm software quality with methods that can economically and effectively apply to both strategic to both large and small-scale systems.

6.2 Design of Test Cases and Scenarios

The Chapter which is presented below deals with various tests that have been made to the developed software to detect the failures it may have. Along with this chapter, there will be carried out of test: **Unit tests, Integration tests and Selenium testing.**

1. Unit Testing

Unit testing is a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. It is concerned with the functional correctness of the standalone modules. The main aim is to isolate each unit of the system to identify, analyse and fix the detects.

Sometimes software developers attempt to save time by doing minimal unit testing. This is a myth because skipping unit testing leads to higher defect fixing costs during System testing, Integration testing and even Beta testing after the

application is completed. Proper unit testing was done during the development stage saving both time and money in the end.

Here are key reasons to perform unit testing:

1. Unit tests fix bugs early in the development cycle and save costs.
2. It helps understand the developers' code base and enables them to make changes quickly.
3. Good unit tests serve as project documentation.
4. Unit tests help with code re-use.

S.NO	Scenarios	Expected Result	Actual Result	Status
1.	Sign Up for the web application	Registered successfully.	Registered successfully.	success
2.	Login to the web application	Logged in successfully.	Logged in successfully.	success
3.	Search for the question	Search results appear successfully.	Search results appear successfully.	success
4.	View categories	Questions related to the category appear successfully.	Questions related to the category appear successfully.	success
5.	Ask a question	The question has been posted.	The question has been posted.	success
6.	Answering a question	The answer to the query is submitted.	The answer to the query is submitted.	success

Table 1.0: Unit Testing Modules

2. Integration Testing

Integration testing is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units. Test drivers and test stubs are

used to assist in integration testing. Integration testing ensures that software and subsystems work together as a whole. It tests the interface of all modules properly when integrated.

3. Functional Testing

Selenium is a portable framework for testing web applications. Selenium provides a playback tool for authoring functional tests without the need to learn a test scripting language (Selenium IDE). It also provides a test domain-specific language to write tests in several popular programming languages, including C#, Groovy, Java, Perl, PHP, Ruby, and Scala.

Selenium is an open-source, test automation tool that has become an important automation tool in the software quality assurance world. This selenium testing tool consists of a different set of tools which include Selenium Web Driver, Selenium RC, Selenium IDE, and Selenium Grid, all of which have different features. Here we are using Selenium IDE. Selenium IDE is a simple record and playback kind of tool which is available as an add-on to the browser.

Below are some of the test cases for which functional testing is performed using Selenium:

1. **Sign Up**

   A user can sign up for the web application by entering his/her email address, registration number provided in the college and the batch he/she belongs to. Below is the functional test for signing up. All test cases have been passed successfully.

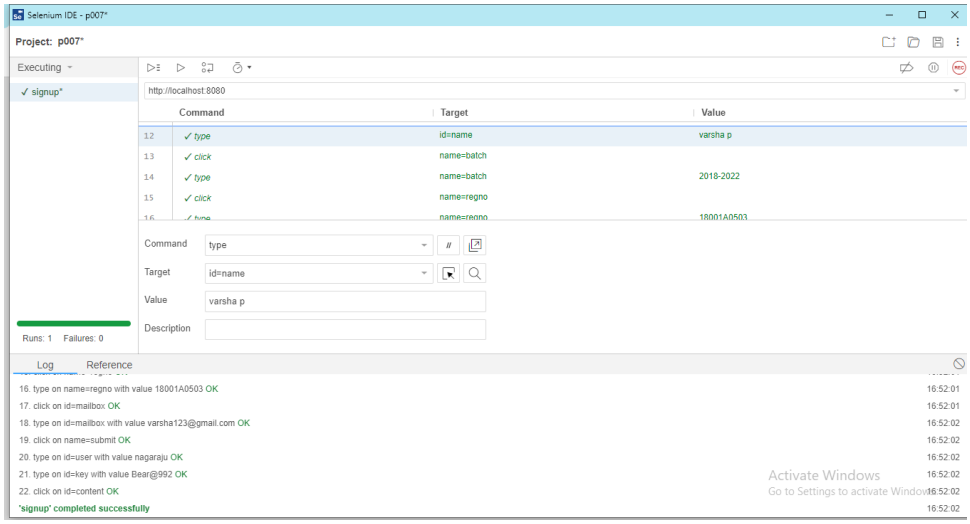

Fig 21: Sign Up - Test Case

2. Log in to the web application

A user can enter the credentials used while signing up and log in to the portal. Below is the functional test for logging in. All test cases have been passed successfully.

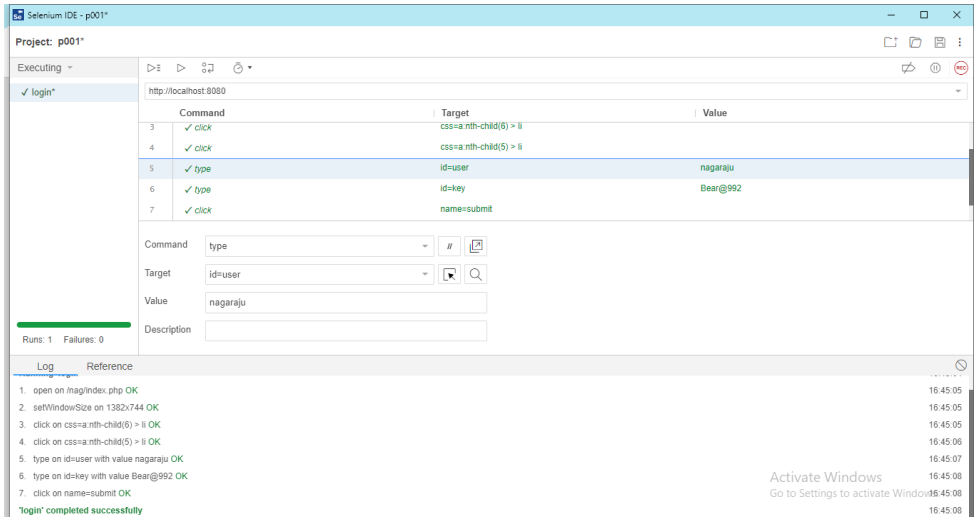

Fig 22: Log in to the system - Test Case

3. **Search for the question**

A user can search for the question already asked previously on the home page in the search bar. The results will be displayed by the keyword entered. Below is the selenium test case for viewing course details. All test cases have been passed successfully.

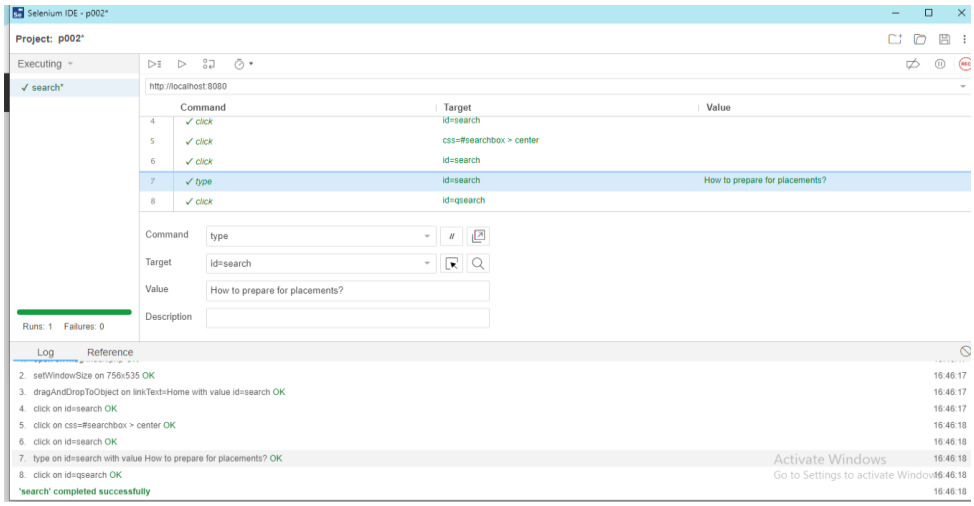

Fig 23: Search - Test Case

4. **View the categories**

By clicking on the categories section in the navbar, the user/ alumni can find relevant questions on the area he/she is willing to answer. Below is the functional test for viewing categories. All test cases have been passed successfully.

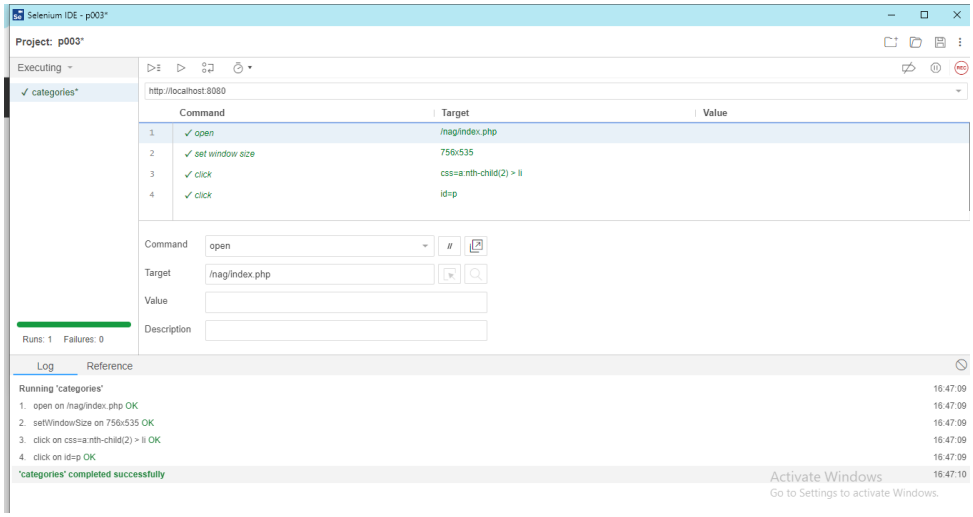

Fig 24: View the categories - Test Case

5. **Ask a question**

On clicking the 'Ask Question' tab in the navbar, a student/ alumnus can post queries/ questions in the web app. Below is the functional test for posting a question. All test cases have been passed successfully.

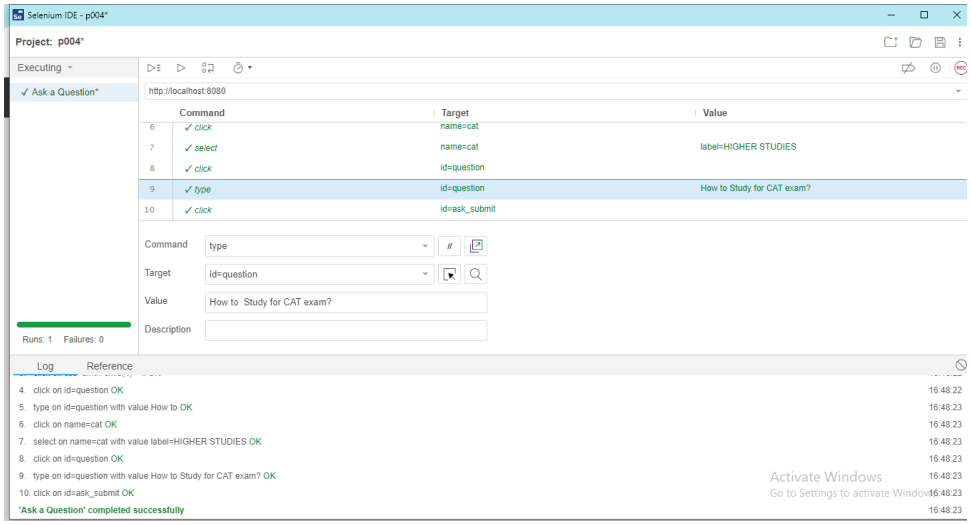

Fig 25: Ask a question - Test Case

6. **Answering a question**

After viewing the questions and if the user/alumnus wishes to answer a particular query, the user can click on the 'submit answer' button below the

question and post relevant information on the query asked. Below is the functional test for answering a question. All test cases have been passed successfully.

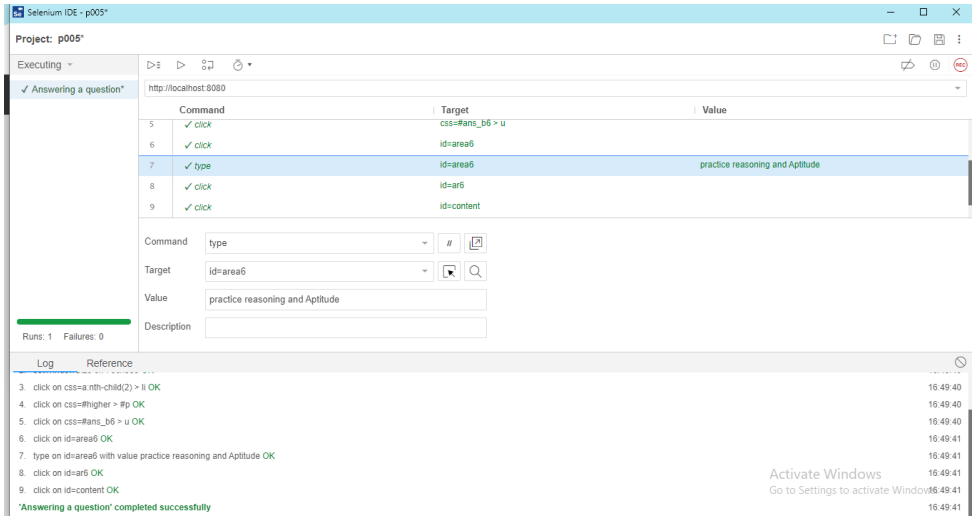

Fig 26: Answering a question - Test Case

6.3 Summary

Testing and validation give the correctness of the output of the application by using some testing techniques. The system is tested by unit test cases and selenium testing. No system is bug-free; each one has its loopholes. Bugs will be detected and resolved.

CONCLUSION

“Prasa” Alumni Interact platform helps the alumni and students in college connect and interact with each other. It enables the students to get answers to the questions they’ve been longing to ask the experienced seniors who’ve passed out of the college. It also enables the alumnus of the college to get information about what’s going on with the alma mater. This system is built to support interactions with peers that can influence overall career development.