Project Report
Info Stack

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Department of Information Technology

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BZU Multan Sub-Campus Lodhran

“In the Name of Allah, the Most Beneficent, the Most Merciful.

All the praises and thanks be to Allah, the Lord of the 'Alamin (mankind, jinns and all that exists).

The Most Beneficent, the Most Merciful.

The Only Owner of the Day of Recompense (i.e. the Day of Resurrection)

You (Alone) we worship, and You (Alone) we ask for help.

Guide us to the Straight Way...

The Way of those on whom you have bestowed Your Grace, not (the way) of those who earned Your Anger, nor of those who went astray.

(The Qur'an- Surah Al-Fatihah)”

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Approval

It is certified that I have read the project report named **"Info Stack"** submitted by **Muhammad Hassaan** and I hereby declare that the preparation and presentation of the project were supervised in accordance with the guidelines on supervision laid down by ***Bahauddin Zakariya University Multan***.

This report is of sufficient standard to warrant its acceptance by **Department of Information Technology, Bahauddin Zakariya University Multan**, for the partial fulfillment of the requirement for the **Bachelor of Science in Information Technology**.

Mr. Muzamil Mehboob	_____	_____
Supervisor	**Signature**	**Date**

DEDICATION

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving parents and beloved grandfather **Abdul Khaliq** without whose constant support this dissertation was not possible. They always inspire me. At the same time, my thanks also go to my bother **Saqlain Haider** whose advice really worked for this dissertation. I also dedicate this dissertation to my many friends who have supported me throughout the process.

ACKNOWLEDGEMENT

Allah Almighty has been faithful in granting the strength, wisdom, knowledge and the courage needed throughout this period of study. I thank the Allah Almighty, for life and success of this study.

I would like to acknowledge **MR. MUZAMIL MEHBOOB** for his vital cooperation and help in ensuring the successful completion of my assignment. He deserves the utmost credit for the project's outcome. My heartfelt gratitude goes to my parents, siblings and loved ones for their support in diverse forms.

Finally, I would like to convey my sincere thanks to my friends; without them, the task would not have been accomplished in such a timely manner.

ABSTRACT

I have developed “Info Stack” website. These days, education is no longer limited by books just because of the internet. An increasing number of students looking for answers to their questions of different subjects from different areas of Pakistan.

Just because of their non-IT background and lack of data mining capability they can't find the exact answers to their questions from different platforms over the internet. There is a strong need of creating a platform that helps them to extract answers from one platform.

So my project focuses on how to upload a question on the website and how to answer that questions for the students.

I have decided to develop a web-based project because a website is easily accessible by everyone from anywhere.

Introduction

1.1 Introduction

Question and Answer Website plays an extremely an important role in our day-to-day life as it helps one gain information and find answers to any sort of query one might have. The users put up questions expecting an answer and also, go through previously asked questions where they might find their answer or even get more information about a similar topic. As the increase in population in Pakistan is so rapid and with the number of questions, people specially students may have, it's highly unlikely that there can be a question no one can answer at all. Also, we know that altruism does not want every user to just give the answers or to have answered with good quality that too with a less waiting time Internet being such an an important source of information, which has such vast amount of data and it is constantly increasing with no pause the users mainly rely on it to find answers from search engines. It is basically a knowledge base. Search engines have a huge amount of data about every topic one might want to know about but then a lot of times one can even find irrelevant search results. To prevent that their need to be more and more platforms that are relevant to a single topic and allow the users to expect less irrelevant answers and more informative and legit answers.

This project aims on implementing a Social Question and Answer Website , an online web-based system. It influences the social network properties of interest and trust.

A real prototype of this project was implemented and the behavior of real users was analyzed. Creating a website available to the users which allows them to find answers to their questions and queries and doubts. Allowing them to even ask personal questions in case they don't want it being seen by others users. Having experts answer them in order to make it more trustworthy.

Along with this, also allow them to grade the answer with respect to how much they benefited from it.

1.2 Project Overview

A Question and Answer website is a website that focuses on answering the questions one might put up on an online platform. These are usually implemented by large organizations which aim on implementing a platform where users can clear their doubts about their respective fields. It varies from small scale to large scale or from topic to topic. Many of these platforms may restrict access to either their employees or make it a public one. The disadvantages of the existing

systems are less security, searching efficiency is less, chances of faking answer. One may access these sites/applications from another's system in case they are not public or access the ones which are and post answers which aren't relevant. Sometimes people even lie on such platforms and there might not be any checker to cross-analyze these answers. Now one might also want similar answers to their question which may resolve their query beforehand. Problems which are undertaken are first, making sure that there is more security and safety. Second, helping the users to search answers for similar questions which may answer their question beforehand and even highlight other important points worth knowing. There had to be a way to find if the answers are worth trusting. One can't just blindly trust anything they read on the internet. They either look for other users who've said the same thing or maybe a trustworthy person like an expert.

So in order to resolve these problems, the website created focuses on ensuring that a user has to make an account in order to access the website. Both users and experts can make their accounts and help out people with their queries. Third, there would be a similarity check that would allow the person to review similar questions and get more information. Lastly, this is a system which allows you to grade the answer you read with respect to how much it helped a person so others can trust the answer and its eligibility and see if it's legit. One can find a number of such platforms, varying from technical to a know-all domain. Quora or Yahoo! Answers are standalone Question and Answer Website and along with Stack Overflow, Qhub, and they all are open source.

1.3 Project Scope

The main function of our project is to upload a question by an account that has been created by the unloader. After uploading that question, the people with an authorized account on that site will be able to answer that question. There can be more than one answer to that question just like comments.

- Creating an Account as an authorized user.
- Uploading a question to the site and Answering a question.
- Like or Unlike a Question as per the suggestion of the students.
- Admin Account can delete the user account without any approval.
- The admin account can delete the questions as well.
- There will be a specific id for each question so that one can access that question easily.

A user cannot delete an answer from the uploaded answer. The same is with the answerer, he cannot delete a question. No one can change their level that will be updated by the system as per their participation in answering the questions.

- Can't be created an account without having a valid email address.
- If a user is using a false language he will not be able to participate in the system.

Login Module:

Administrator who have valid login id and password can only login into system and can make transactions or operations.

Search Module:

This module allows user to search for a particular question or their answers using search criteria such as identity of poster, username, date of operation etc.

Post Module:

This module will help the user to insert new question or new answer in the system. This module will really simplify the task of the answering and questioning. Also, after successful insertion the user can't change or update information.

Top Informants Module:

By using this module the visitor can see the list of people who are actively involved in the activity of the system. In this Module top 10 people will be shown according to the number of answers they have posted.

Top Question Module:

This module will help the user/ visitor to check that which questions have most likes and answers. Top 10 questions on s separate web page will be shown. On this page there will be a Post a question button as well.

Timeline Module:

This is the most important module of the website. In this module user will be able to see the frequent questions and their answers posted on the website. This timeline idea was taken from the news feed of the Facebook. On that one can see what's happening on Facebook.

1.4 Project Objective

The main objective is to develop an online question and Answers website named as “Info Stack” for the people of Pakistan.

Specific Objective

- To identify the problems involved in finding the answers in current digital era for the people of Pakistan specially students of Matric and Intermediate.
- To develop a Database system that allows the user to store question and answers and all of their data as per their needs.
- To develop a system that permits authorized person to post a question or answers to the website.

1.5 Why Info Stack?

Info Stack has been developed just for the sake of helping the people of Pakistan. People of Pakistan are less digital. That is why they are facing troubles in searching an exact answer of their question. To give solution of their problem at one platform we have developed this system. More Updated will be released frequently once it has been published on the forms of version. This is **version IS-1.1.** Further this will be included in it

- Facilitate easy method of question finding.
- Keep record of the liked question.
- Quick access to the answers of the question
- View Top Respondent
- To keep Record of the Top Questions
- To Share a link of the question.

1.6 Dependencies

It is assumed that the user of this Website system has access to a computer / Tab or a Mobile with all the necessary hardware equipment. The Device must be able to run the OS and proper required web Browser on it. It is also assumed that the user has access to the working of the system with connecting on the internet and that can be easily working web application of the online mode. Some of the assumptions are as follows:

- The User first all signup and created stored information of the user into the database.

- The User can update and delete the account easily.
- If User password and username cannot be correct the User cannot be login and cannot access the system.

System Analysis

2.1 System Analysis

A project on Question and Answer Web named as “Info Stack” which has been carried out by **Muhammad Hassaan**, an IT student of Institute of Information Technology, BZU Multan (Lodhran-Campus), provides a simple and attractive interface for finding an appropriate answers for the question. It can be used by any educated person who want to answer of their question. They can also post answers of the question posted by others easily.

Achieving all objectives of Q&A is difficult using a pen and paper or finding tutor for them as the professionals in that fields are difficult to find, can be redundant and collecting relevant information can be very time consuming. All these problems are solved using this project.

In this section we are going to analyze the existing system and provide solutions to errors or build a new system all together.

2.2 Existing System

The existing systems are for the international students. The students of Matriculation and Intermediate from Pakistan can’t find their answers because the lake of Pakistani Community at that platform. Pakistan’s curriculum is different as compared to other one. The existing system does not offer a best User Interface for the users.

Disadvantages

- Complex UI
- Less Pakistani Community
- Curriculum Difference
- Language Problem
- Low Security
- Difficult to Post Questions
- Difficult to Share Questions
- Difficulties in Creating an Account

2.3 Proposed System

The proposed system - Social Question and Answer, an online network-based system emphasizes on exercising the advantage of common interest which would attract people wanting answers to their respective questions. People like commoners and experts can come and answer these

questions. There is a system where people can grade the answers also with stars from one to five. This website help people to gain more information and become knowledgeable about important topics. It can be extremely useful for people of all age groups.

This system which has been proposed to improve the quality of searching for data is called Social Question and Answer system. It aims on leveraging the basic properties of interest and socialization and mutual relationships. This determines who is most probable to answer a particular question. It focuses on keeping identities hidden and enhancing security. The private question feature would allow the user to put up questions they don't wish to share with anyone else, just the expert. Mainly, the answer quality and fetch time improve as the search result data is now reduced as the system is deployed for a particular topic. The advantages include highly efficient searching and increased and improved security for the application and its users.

This system will be developed based on Software Development Life Cycle (SDLC) with HTML, CSS. Sass, JS, JQuery for Frontend Development and SQL server using PHP is good for the development and design of Web-based programs whiles SQL server is good for databases because of its security and its advanced features and properties.

2.4 Proposed System will consist of the Following Modules

2.4.1 Security

The Info Stack system will ensure that the data are secured by assigning a unique password and username. The authorized user will be allowed to access his/her own account.

2.4.2 Verification

The system will verify user's information first before the authorized users can enter the system. Duplication of users in the system will completely be eliminated due to a very rigid verification method.

2.5 Functions of the Proposed System

The system can be accessed by the registered user and non-users as well. There are some limitation for both of them.

The Proposed System will provide the following features to a registered user

- Post a Question
- Post an Answer

- View Answer
- View Questions
- View Top Questions
- View Top Informants

And this system will provide following features to a visitor (Non-Registered user)

- View Answer
- View Question
- View Top Questions
- View Top Answers

2.6 Literature Review

Throughout the project, the focus has been on presenting information in an easy and intelligible manner. The project is very useful for those who want to know about Info Stack Systems and want to search for a question are who want to help others as well. The project provides facilities like a number of questions, a number of likes, view questions, view answers, top informants, and top questions for the students of Pakistan thus reducing complexities and automating the records generation process in a of all question.

The goal is to explain the theory of database management system development which will be applied in the development of an info stack System for the student of Pakistan.

The following issues will be presented respectively.

- Integrated Information System
- Database and DBMS
- Info Stack Records/ Data Management
- Conclusion

2.6.1 Integrated Information System

Integrated Information Systems offer users with a unified view of heterogeneous data sources. To provide a single consistent result for every object represented in these data sources, data fusion is concerned with resolving data inconsistencies present in the sources. Querying the heterogeneous data sources, combining the results, and presenting them to the user is performed by the integration system.

When multiple sources are to be integrated into a single and consistent view, at least the following three steps need to be performed:

- One needs to identify corresponding attributes that are used to describe the information items in the source. The result of this step is a schema mapping that is used to transform the data present in the sources into a common representation.
- The different objects that are described in the data sources need to be identified and aligned. In this way, using duplicate detection techniques, multiple, possibly inconsistent representations of some real-world objects are found.
- As a last step, the duplicate representations need to be combined and fused together into a single representation while inconsistencies in the data need to be resolved.

2.6.2 Database and Database Management System

A database is an integrated collection of data, usually so large that it has to be stored on secondary storage devices such as disks or tapes. This data can be maintained as a collection of operating system files, or stored in a DBMS (database management system).

A Database Management System (DBMS) is computer software designed for the purpose of managing databases based on a variety of data models. A DBMS is a complex set of software programs that controls the organization, storage, management, and retrieval of data in a database. DBMS are categorized according to their data structures or types;

Sometime DBMS is also known as Database Manager. It is a set of prewritten programs that are used to store, update and retrieve a Database. When a DBMS is used, information systems can be changed much more easily as the organization's information requirements change. New categories of data can be added to the database without disruption to the existing system. Organizations may use one kind of DBMS for daily transaction processing and then move the detail onto another computer that uses another DBMS better suited for random inquiries and analysis.

Database servers are specially designed computers that hold the actual databases and run only the DBMS and related software. Database servers are usually multiprocessor computers, with RAID disk arrays used for stable storage. Connected to one or more servers via a high-speed channel,

hardware database accelerators are also used in large volume transaction processing environments.

Advantages of DBMS

- Improved strategic use of corporate data
- Reduced complexity of the organization's information systems environment
- Reduced data redundancy and inconsistency
- Enhanced data integrity
- Application-data independence
- Improved security
- Reduced application development and maintenance costs
- Improved flexibility of information systems
- Increased access and availability of data and information
- Logical & Physical data independence
- Concurrent access anomalies.
- Facilitate atomicity problem.
- Provides central control on the system through DBA.

2.6.3 Info Stack Records/ Data Management

According to the Info Stack records the creation and maintenance of records relating to the question and answers on that website are essential to:

- Controlling the Question Posting and counting their number of likes, both as a whole and subsequently.
- Controlling the Answers Posting and counting their all numbers of questions, both as a whole and subsequently.
- Provide support to the user after the question has been posted.
- In addition, Info Stack system records contain data through which it can aggregate and analyze to inform top respondents and top questions.

An Info Stack/data contains information directly related to a user, which means that the record is personally identifiable. Personal identifiers that relate a record to a user include user Tag, username, email, password, and a list of personal characteristics. Info Stack records could be

maintained in multiple media including handwriting, print, microfilm/fiche, computer's main memory, magnetic tape, cassette, disk or diskette.

These records are used to assist administrators in their support of basic objectives and to document Q&A progress and achievement in the production.

2.6.4 Conclusion

Finally, since the data generated in day-to-day transactions by the whole record increase geometrically according to the administrator, it is worthwhile and holistic to develop a robust

Info Stack system for the students of Pakistan to hold the large amount of data that is generated. The proposed system, Info Stack, should be able to stand the test of time because Q&A records should be kept as long as is necessary to:

Provides information on the Number of Likes of the Questions to User, registering the users, and non-users, as well as to the Q&A Project owner as part of their lifelong learning record.

The project when completed will provide an efficient way to store and organize data than a spreadsheet. It will also serve as a centralized facility that can easily be modified and quickly retrieved as and when required. The proposed system will have a well-designed interface that allows users to interact with the system.

2.7 Feasibility Study

A feasibility study is an assessment of the practicality of a project or system. A feasibility study aims to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed venture, opportunities and threats present in the natural environment, the resources required to carry through, and ultimately the prospects for success. In its simplest terms, the two criteria to judge feasibility are cost required and value to be attained.

It considers all of a project's relevant factors including economic, technical, legal, and scheduling considerations to ascertain the likelihood of completing the project successfully.

2.7.1 Technical Feasibility

The technical feasibility in the proposed system deals with the technology used in the system. It deals with the hardware and software used in the system whether they are of latest technology or

not and if it happens that after a system is prepared, a new technology arises and the user wants the system based on that technology. This system uses windows platform,

SQL server for database, HTML, CSS, Sass, JavaScript in frontend, PHP as Backend language, and visual studio code as user editor, Xammp as server. Thus, INFO STACK is technically feasible.

2.7.2 Economic Feasibility

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benefit analysis. Visual studio Code and SQL server, and Xampp are easily available on internet.

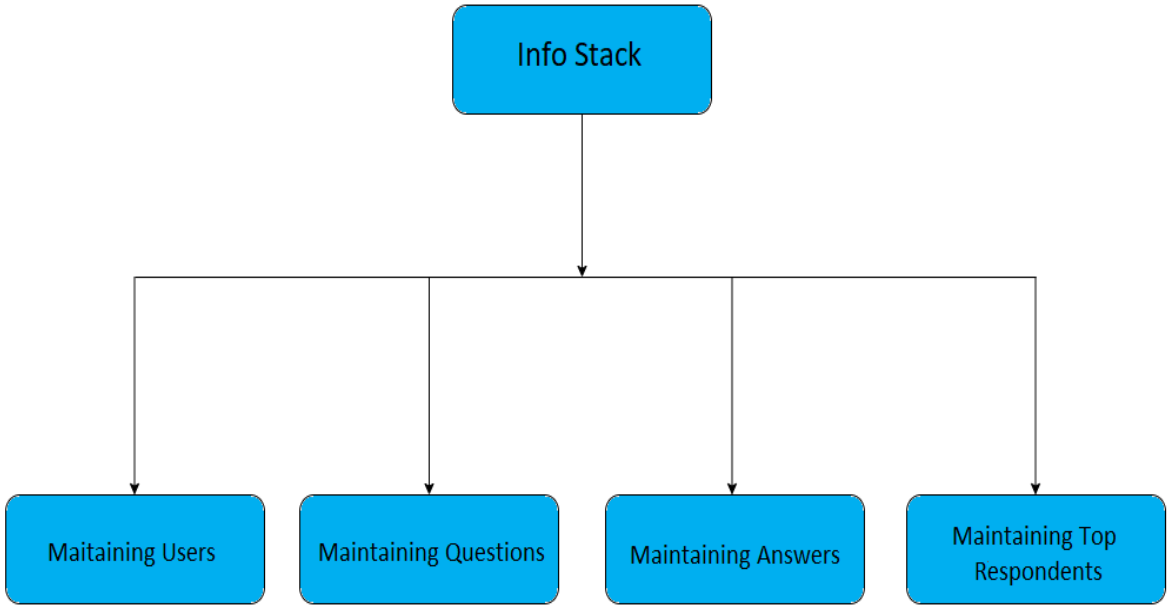
2.7.3 Operational Feasibility

The project has been developed in such a way that it becomes very easy even for a person with little computer knowledge to use it. This Website is very user friendly and does not require any technical person to use. Thus, the project is even operationally feasible.

System Design

This Chapter gives a brief description of the methodology used to develop the proposed system.

System Architectural Design



3.1 Data Collection

The required data including users' details, students' details, subject's details, Likes details, classes, etc. were collected. The data collected would help identify attributes, relationships, classes, and entities/objects that describe, relate, and interact with the system.

3.1.1. Interview

An interview is a powerful tool for data gathering since it allows the interviewer to probe and clarify a number of issues. Face-to-face interview was used to interact with the of the proposed system to obtain the data required for the database management system.

3.2 Specific Requirement

Use-Cases are a scenario-based technique in the Unified Modelling Language which identify the actors in an interaction and which describe the interaction itself. Use cases were used to describe all possible interactions of the entities with the system.

Organizing Information Records Flow of Event

The user is mandated to manage the question and answer records

Use Case: Login into the Info Stack System

Summary: This use case is used when the user wants to access the Info Stack to Post a Question or Answer or if they wants to view their own detail from profile or like a question etc.

Actors: Administrator

Pre-condition: The User's account must be active on the system

Main Flow (MF):

MF-001: The system displays the login page and prompts the User for the Login_Id and Password

MF-002: The user provides values for the Login_Id and password fields.

MF-003: The user hits the login button

MF-004: The system verifies (authenticates) the password and sets the user's authorization. (AF-1.1, AF-1.2)

MF-005: The user is given access to the Info Stack to perform his tasks.

ALTERNATE FLOW 1.1 (AF-1.1):

AF-1.1.1: If the user enters an invalid Login_Id and password then he will not be allowed to enter the system.

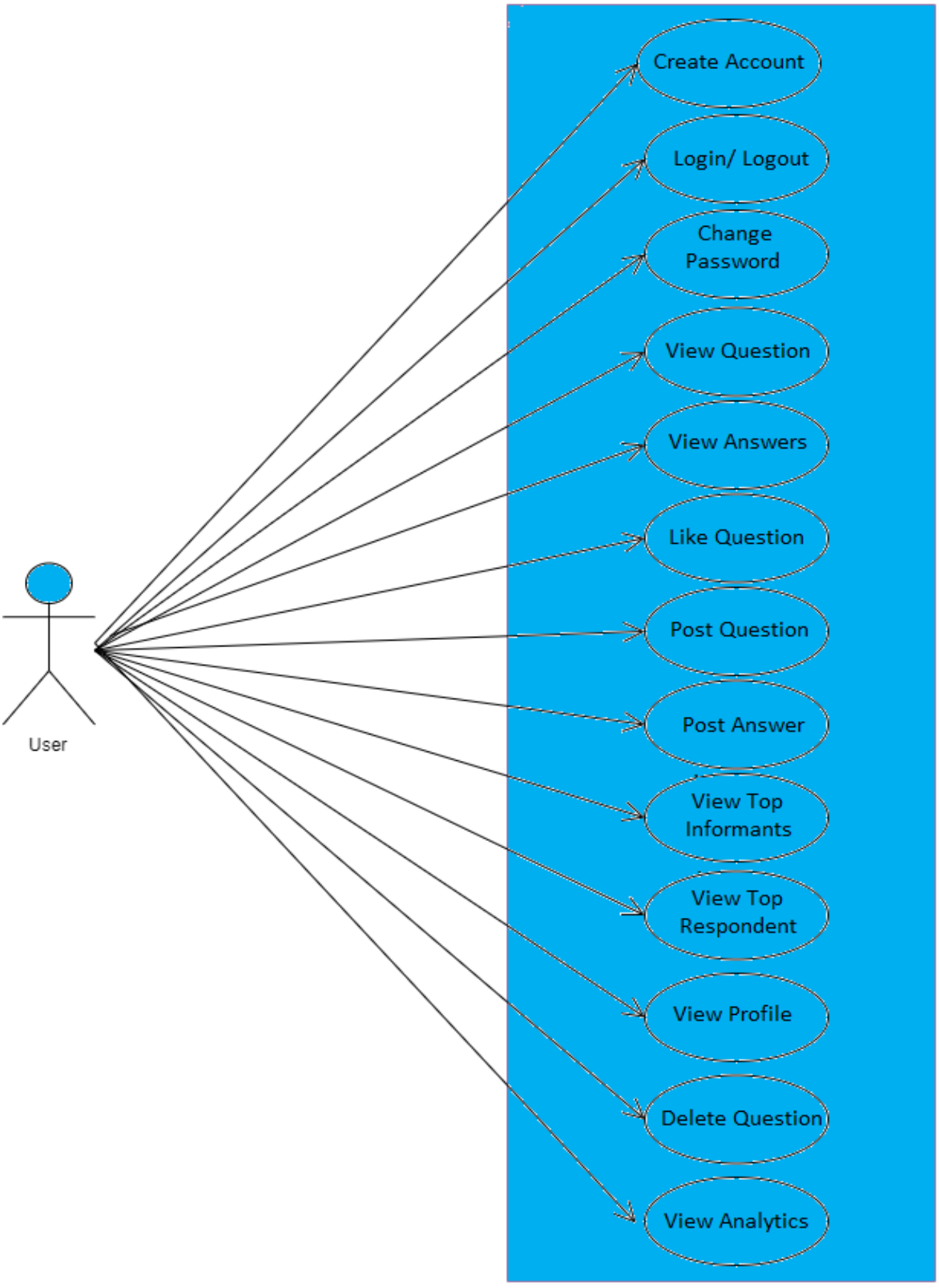
AF-1.1.2: Go to MF-002

3.3 Use Case Diagram

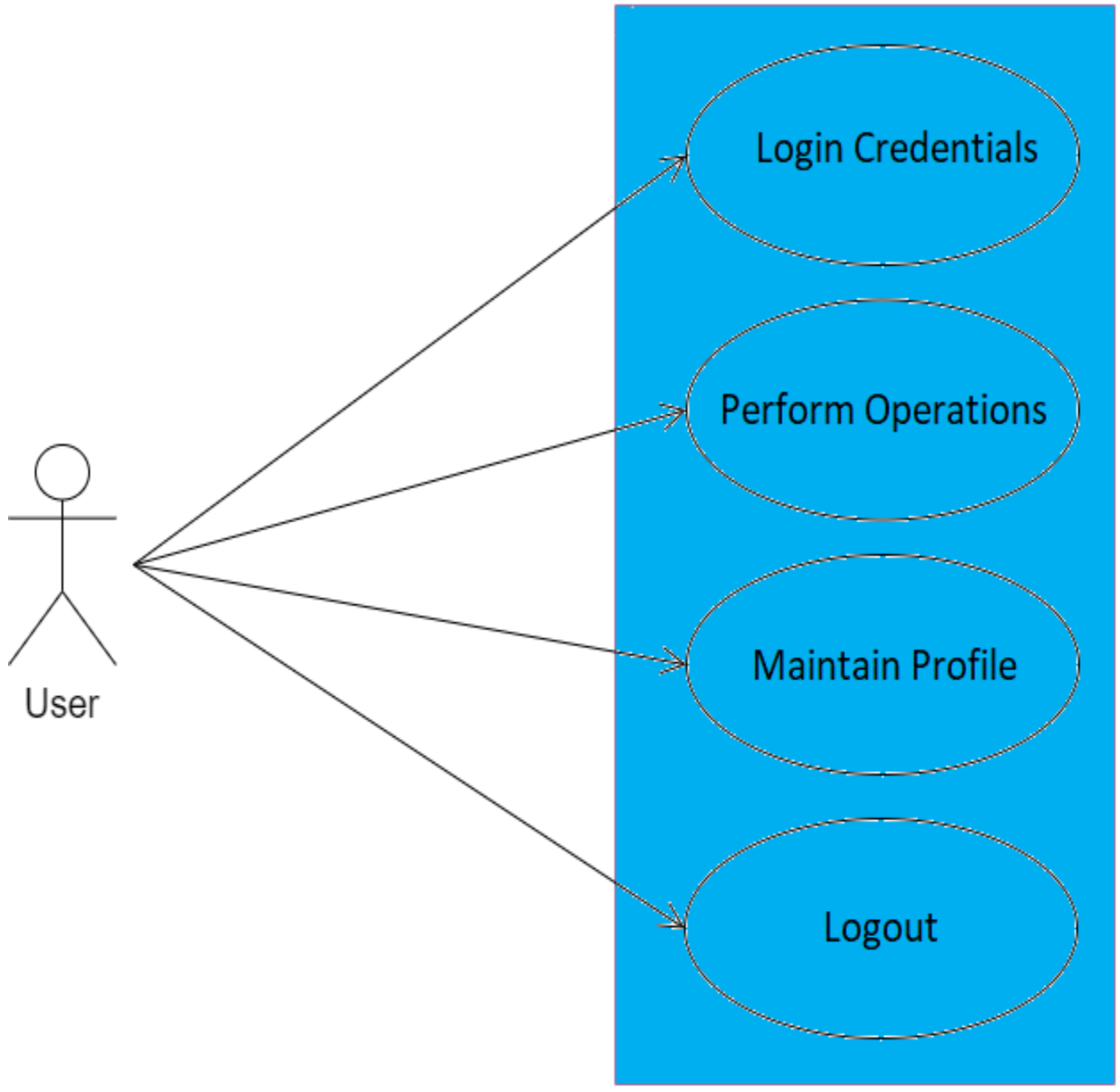
Use case diagram is a behavioral UML diagram type and is frequently used to analyze various systems. They enable you to visualize the different types of roles in a system and how those roles interact with the system.

- To identify functions and how roles interact with them – The primary purpose of using case diagrams.
- For a high-level view of the system – Especially useful when presenting to managers or stakeholders. You can highlight the roles that interact with the system and the functionality provided by the system without going deep into the inner workings of the system.
- To identify internal and external factors – This might sound simple but in large complex projects a system can be identified as an external role in another use case.

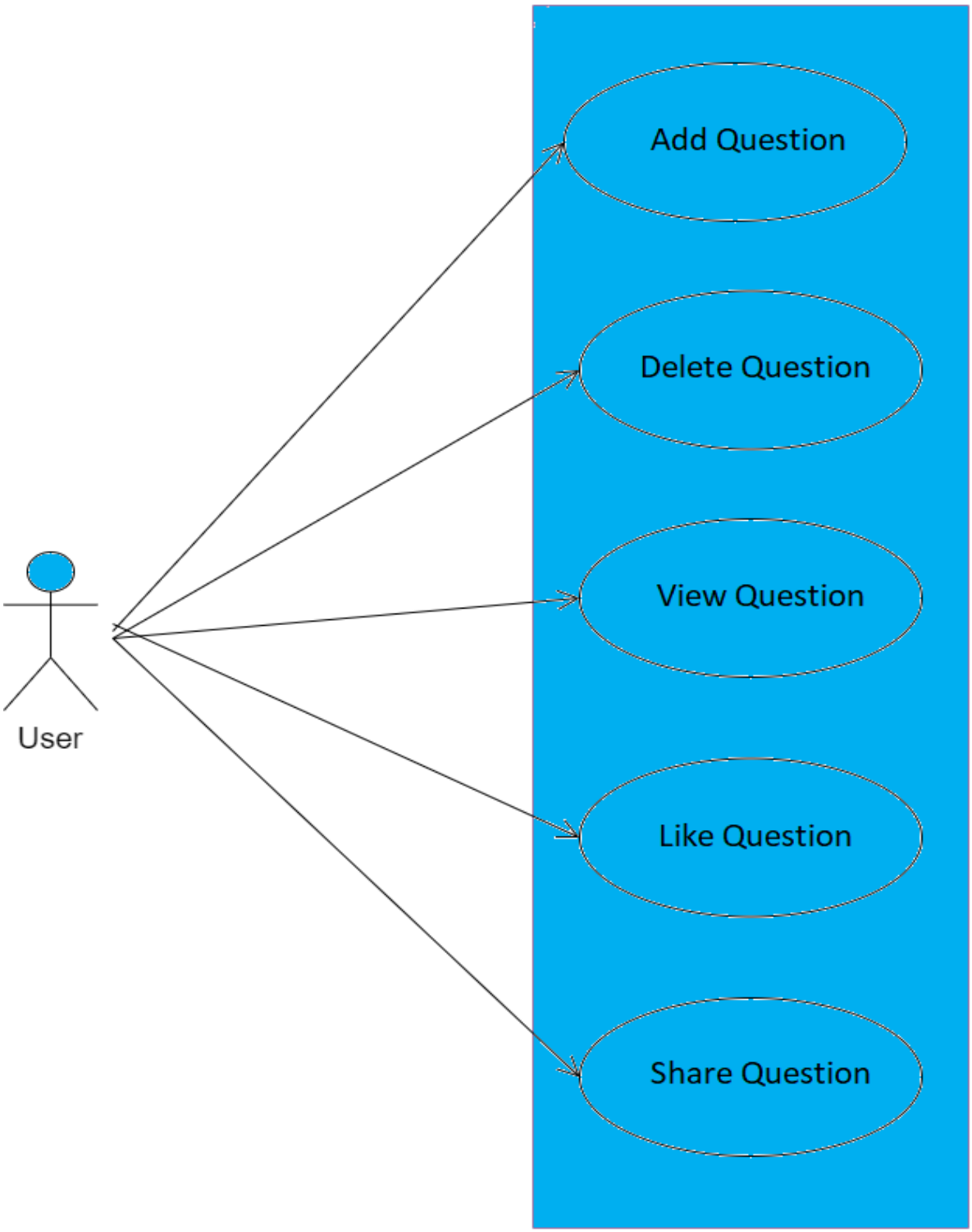
User


Create Account
Login/ Logout
Change Password
View Question
View Answers
Like Question
Post Question
Post Answer
View Top Informants
View Top Respondent
View Profile
Delete Question
View Analytics
User

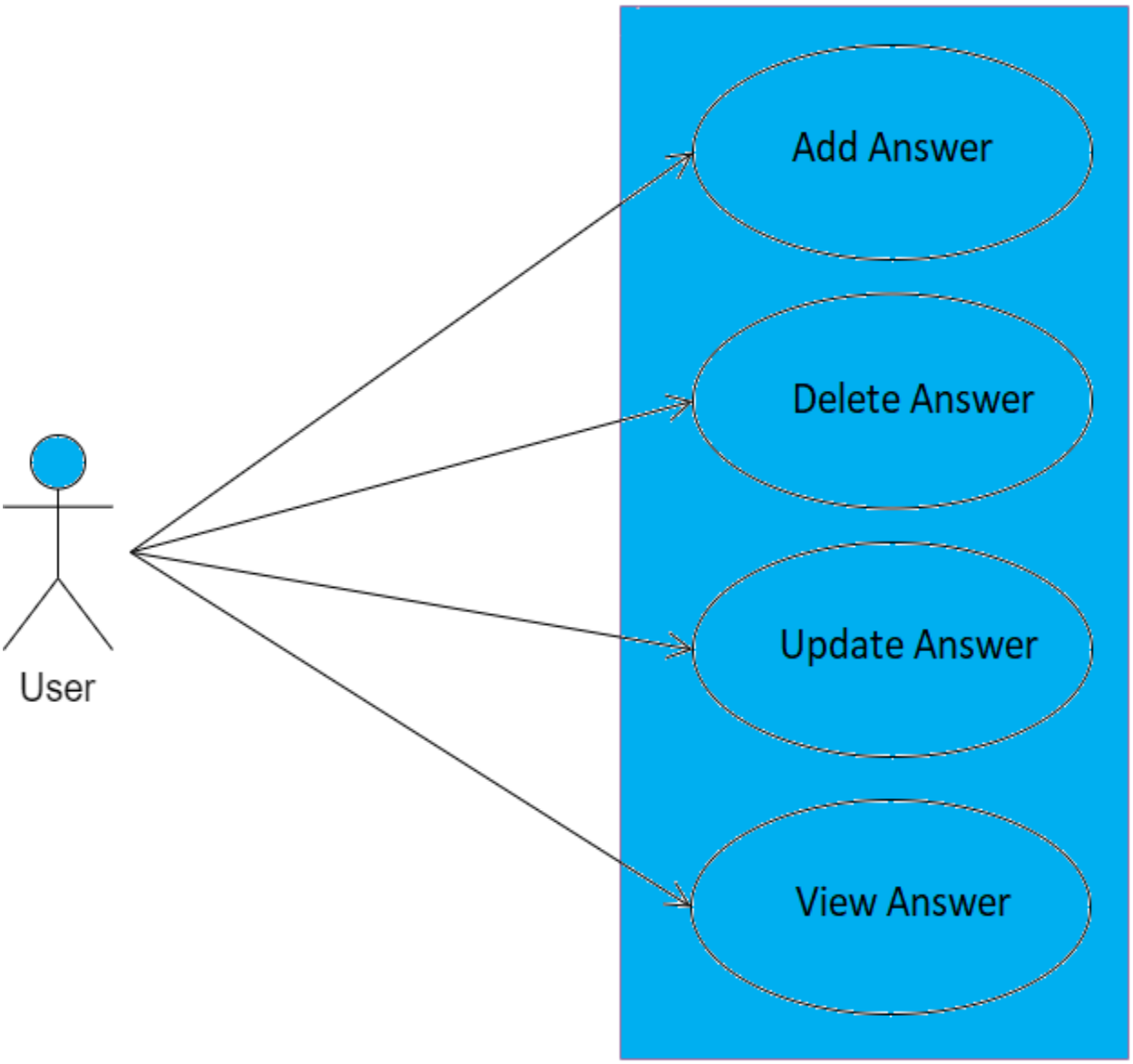
Login Functionality



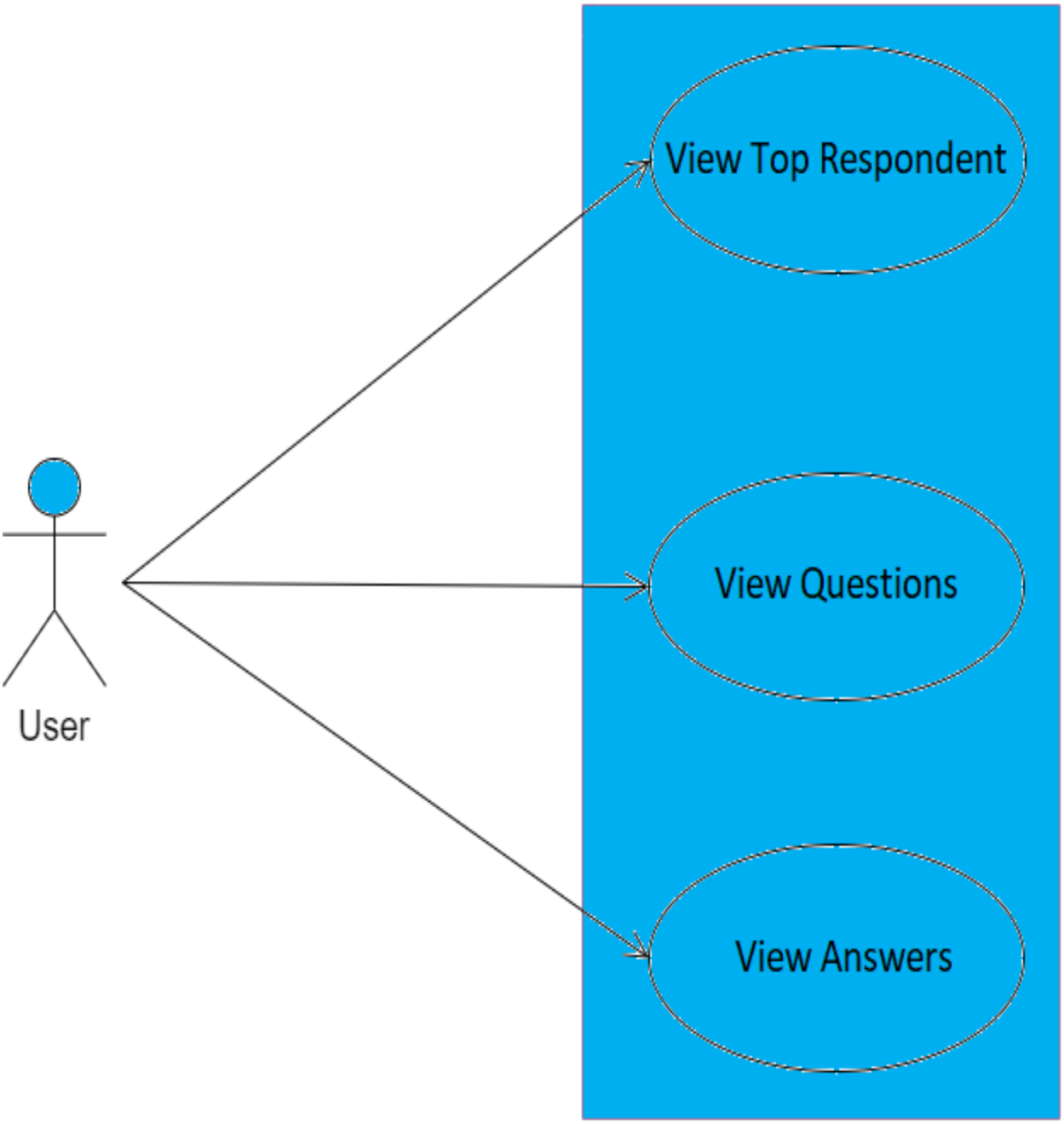
Question Component



Answer Component



Top Respondent



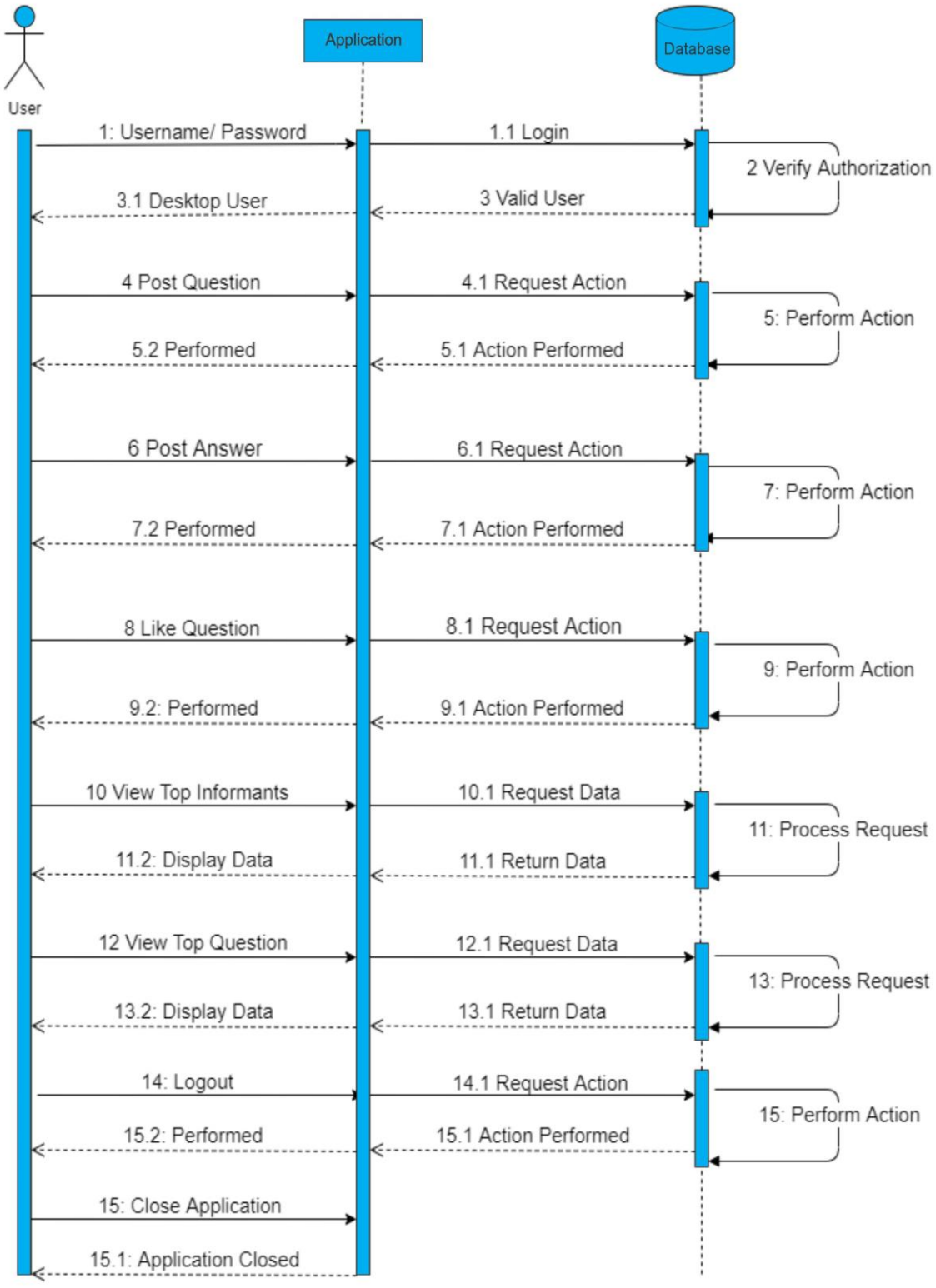
3.4 Sequence Diagram

A sequence diagram is a type of interaction diagram because it describes how and in what order a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process.

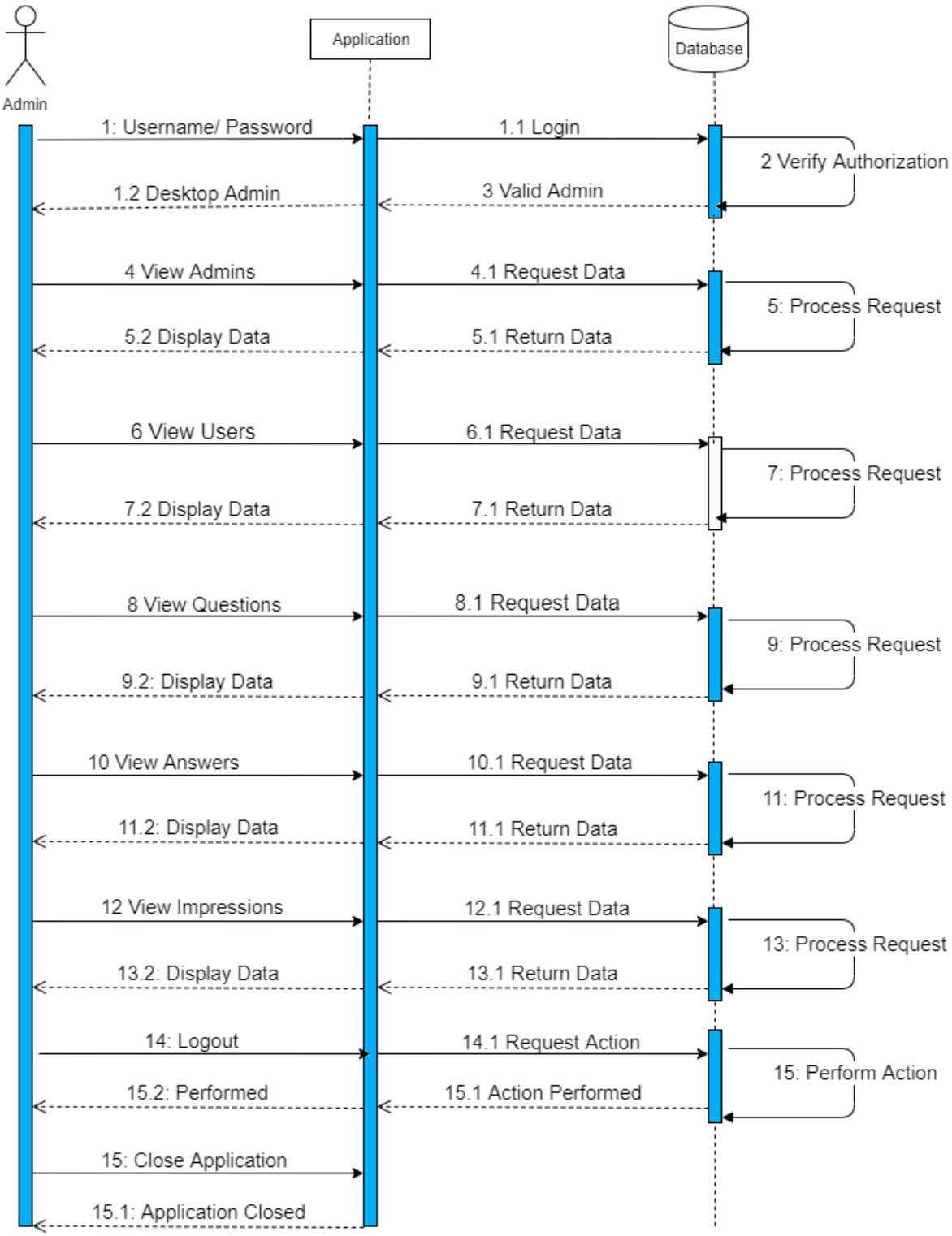
When the system sequence diagram is being developed, each piece of information is passed from the actor to the system once. However, in the next level, between interface and controller, many different commands and queries may need the same arguments.

fig shows how the system sequence diagram would look for the use case Info Stack System with a stateless strategy. The information is passed from the actor to the interface just once, but each time a system command or query needs that information, the interface must send it again as an argument to the controller.

User


User
Application
Database
1: Username/ Password
1.1 Login
2 Verify Authorization
3.1 Desktop User
3 Valid User
4 Post Question
4.1 Request Action
5: Perform Action
5.2 Performed
5.1 Action Performed
6 Post Answer
6.1 Request Action
7: Perform Action
7.2 Performed
7.1 Action Performed
8 Like Question
8.1 Request Action
9: Perform Action
9.2: Performed
9.1 Action Performed
10 View Top Informants
10.1 Request Data
11: Process Request
11.2: Display Data
11.1 Return Data
12 View Top Question
12.1 Request Data
13: Process Request
13.2: Display Data
13.1 Return Data
14: Logout
14.1 Request Action
15: Perform Action
15.2: Performed
15.1 Action Performed
15: Close Application
15.1: Application Closed

Admin

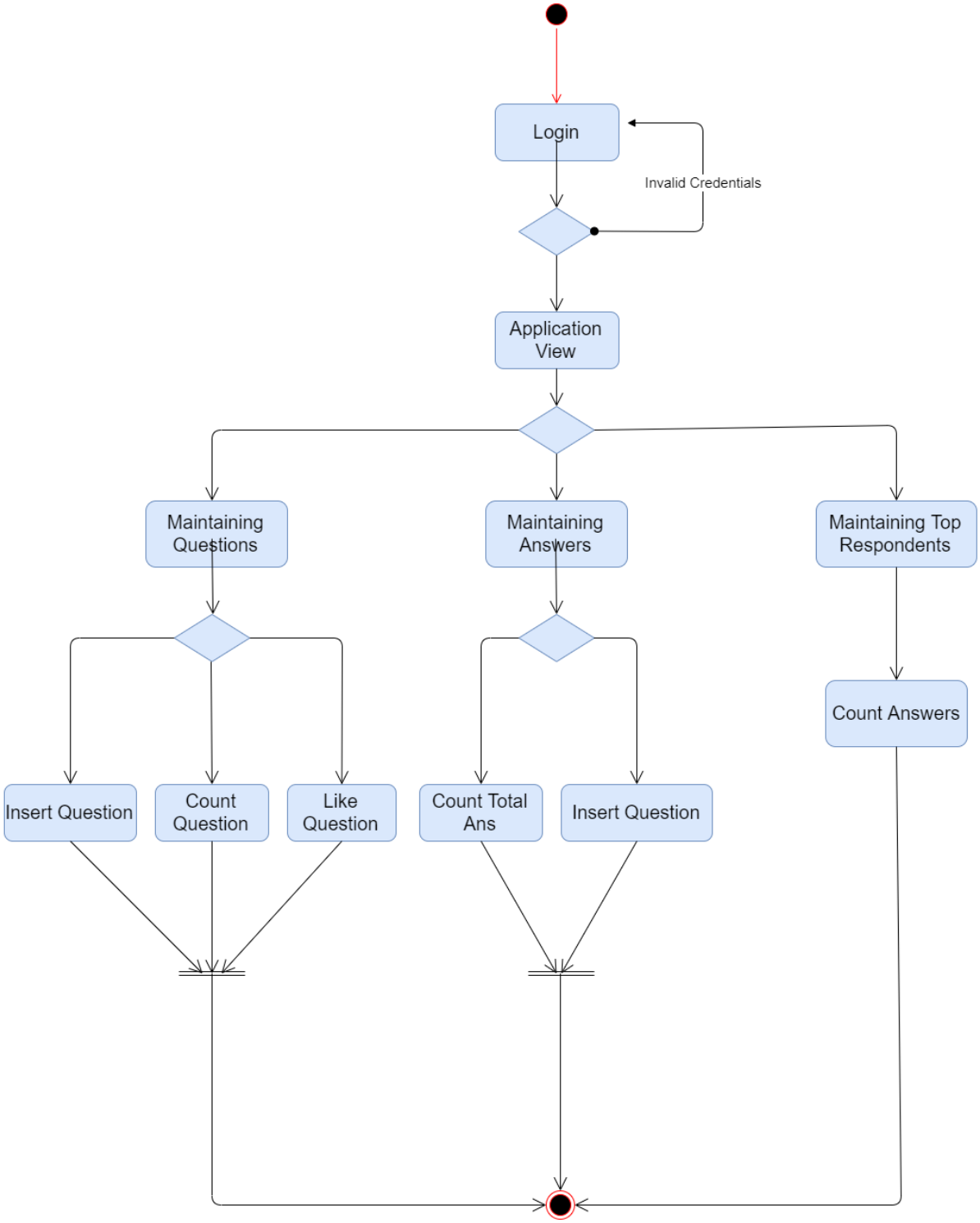

Admin
Application
Database
1: Username/ Password
1.1 Login
2 Verify Authorization
1.2 Desktop Admin
3 Valid Admin
4 View Admins
4.1 Request Data
5: Process Request
5.2 Display Data
5.1 Return Data
6 View Users
6.1 Request Data
7: Process Request
7.2 Display Data
7.1 Return Data
8 View Questions
8.1 Request Data
9: Process Request
9.2: Display Data
9.1 Return Data
10 View Answers
10.1 Request Data
11: Process Request
11.2: Display Data
11.1 Return Data
12 View Impressions
12.1 Request Data
13: Process Request
13.2: Display Data
13.1 Return Data
14: Logout
14.1 Request Action
15: Perform Action
15.2: Performed
15.1 Action Performed
15: Close Application
15.1: Application Closed

3.5 Activity Diagram

The activity diagram is another important diagram in UML to describe the dynamic aspects of the system.

An activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all types of flow control by using different elements such as fork, join, etc.

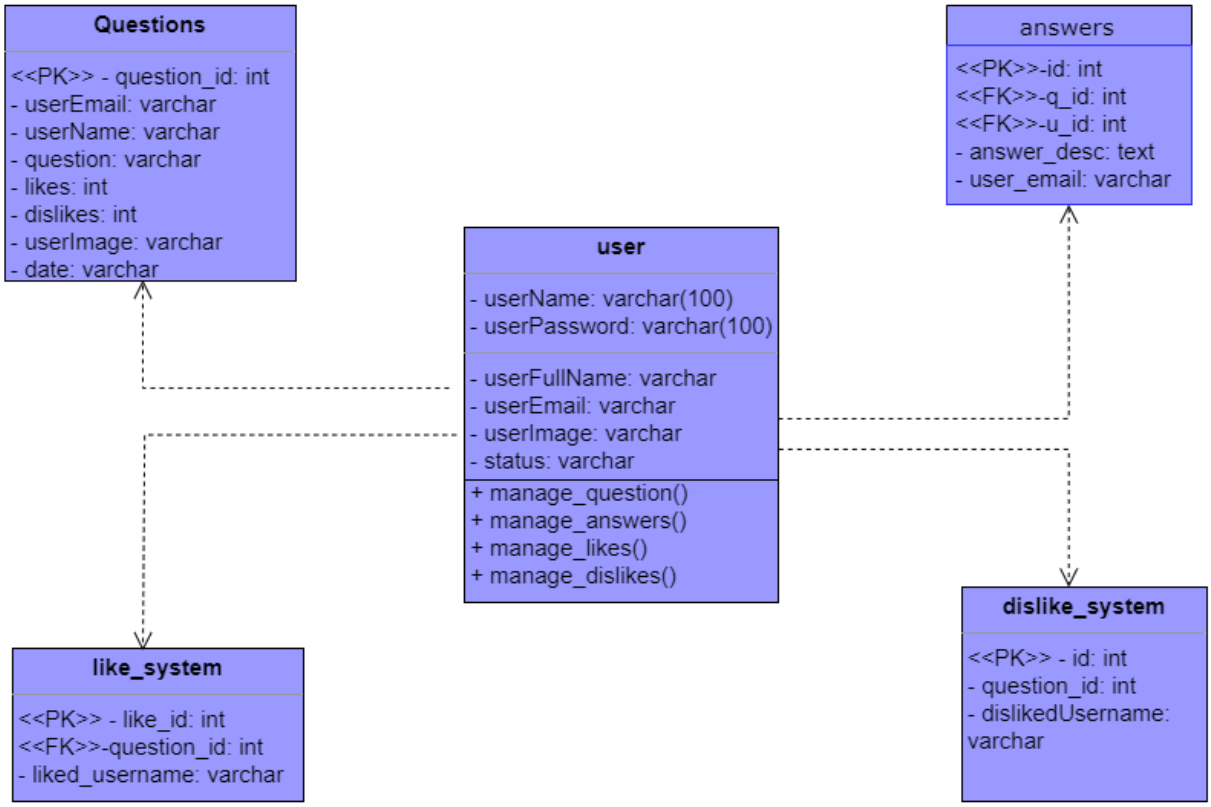

Login
Invalid Credentials
Application View
Maintaining Questions
Maintaining Answers
Maintaining Top Respondents
Insert Question
Count Question
Like Question
Count Total Ans
Insert Question
Count Answers

3.6 Class Diagram

The class diagram is a static diagram. It represents the static view of an application. The class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.

A class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of object-oriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages.

The class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints. It is also known as a structural diagram.



3.7 System Design

The purpose of the system design phase was to develop a clear blueprint that would satisfy all documented requirements for the system. The overall system design objective was to provide an efficient, modular design that will reduce the system's complexity, facilitate change and result in an easy implementation. This blueprint provided interface design models that are consistent, and user-friendly and will provide straightforward transition through the various system functions.

System Development & Implementation

4.1 Introduction to System Development

Once the system design has been accomplished, the designer moves toward the development phase of the software in accordance with the proposed system and design specification. Special care is to be taken while selecting software. The development phase may be summarized as collection of the following steps:

- Development of computer programs
- Hardware and software
- Testing of computer programs

4.1.1 Front End

The front end is that part of the Website, which is visible to the user, or all the user interaction, takes place at the front end. Since the project was Web-based therefore the front end should be designed in a language that a browser can understand therefore this end was designed using the following technologies and Languages.

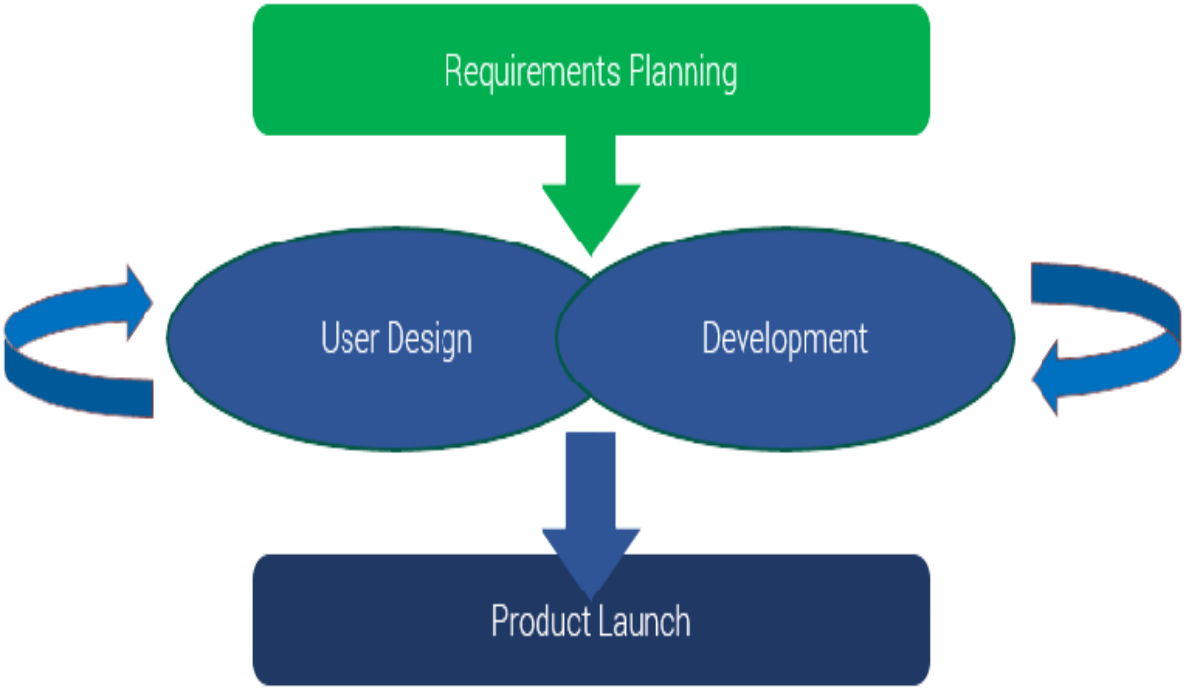
- HTML5
- CSS3
- Sass
- JavaScript

4.1.2 Back End

The back end is that portion of the project where the database is maintained. For the creation and maintenance of a database, we need a DBMS. The DBMS selected for this project was SQL Server. And For backend Language, I have decided to use PHP because it has a larger number of developers in its community for bug fixes and problems, etc.

4.2 Development Plan

The development plan is planned according to the development methodology which is RAD Rapid Application Development. The architecture is shown in the figure.



RAD Model or Rapid Application Development model is a software development process based on prototyping without any specific planning. In the RAD model, there is less attention paid to planning and more priority is given to the development tasks. It targets development Systems in a short span of time.

4.3 Development Phases

As shown in the figure, it has mostly four phases.

- Requirements Planning Phase
- User Design Phase
- Construction Phase
- Product Phase

4.3.1 Requirements Planning Phase

In this phase, a team combines elements of the system planning and systems analysis phases of the system development life cycle (SDLC), Users, managers, and IT staff members discuss and agree on business needs, project scope, constraints, and system requirements. It ends when the team agrees on the key issues and obtains management authorization to continue.

4.3.2 User design Phase

During this phase, users interact with systems analysts and develop models and prototypes that represent all system processes, inputs, and outputs. The RAD groups or subgroups typically use a combination of Joint Application Development (JAD) techniques and CASE tools to translate user needs into working models. User Design is a continuous interactive process that allows users to understand, modify, and eventually approve a working model of the system that meets their needs.

4.3.3 Development Phase

Focuses on program and application development tasks similar to the SDLC, In RAD, however, users continue to participate and can still suggest changes or improvements as actual screens or reports are developed. Its tasks are programming and application development, coding, unit integration, and system testing.

4.3.4 Production Phase

The primary objectives of development are to translate the most promising design approach into a stable, interoperable, producible, and cost-effective design, validate the manufacturing and production process and demonstrate system capabilities through testing.

Although much of the activities in the development address the computer programs that make up the system, this phase also puts in place the hardware, software, and communication environment of the overall system. At the end of development, the system will be ready for activities of integration and testing.

4.4 Tool Selection

4.4.1 Hardware

The section on hardware configuration is an important task related to website development. Insufficient random-access memory may affect adversely the speed and efficiency of the entire system. The process should be powerful to handle the entire operation. The hard disk should have sufficient capacity to store the file and application.

The hardware required to run this system will be:

- Core i3 Computer
- Or A Tablet

- or a Mobile
- Color Monitor
- compatible mouse, keyboard/ Touchpad or Keypad etc

4.4.2 Software

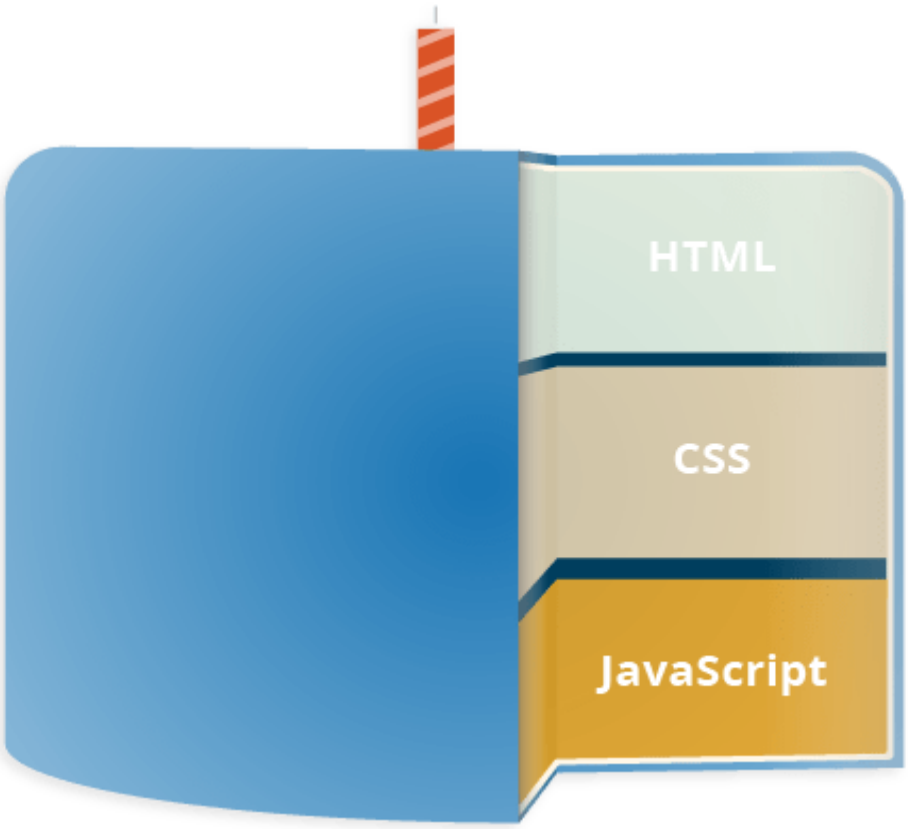
A major element in building a system is the section of compatible software since the software in the market is experiencing geometric progression. Selected software should be acceptable by the firm and one user as well as it should be feasible for the system. This document gives a detailed description of the software requirement specification. The study of requirement specification is focused especially on the functioning of the system. It allows the developer or analyst to understand the system, function to be carried out the performance level to be obtained and corresponding interfaces to be established.

So different types of software are considered for this specific purpose, chosen ones are:

- Operating System: Windows 10
- Code Editor: Visual Studio Code
- Frontend: HTML, CSS, Sass, JS
- Backend Language: PHP
- Database: MySQL
- Tools for documentation: Microsoft Word

4.5 JavaScript Web Development

JavaScript is a scripting or programming language that allows you to implement complex features on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved. It is the third layer of the layer cake of standard web technologies, two of which (HTML and CSS) we have covered in much more detail in other parts of the Learning Area.



- HTML is the markup language that we use to structure and give meaning to our web content, for example defining paragraphs, headings, and data tables, or embedding images and videos in the page.
- CSS is a language of style rules that we use to apply styling to our HTML content, for example setting background colors and fonts, and laying out our content in multiple columns.
- JavaScript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything else. (Okay, not everything, but it is amazing what you can achieve with a few lines of JavaScript code.)

4.6 PHP

PHP is an open-source, server-side programming language that can be used to create websites, applications, customer relationship management systems and more. It is a widely-used general-purpose language that can be embedded into HTML. This functionality with HTML means that the PHP language has remained popular with developers as it helps to simplify HTML code.

PHP stands for 'PHP: Hypertext Preprocessor', with the original PHP within this standing for 'Personal Home Page'. The acronym has changed as the language developed since its launch in 1994 to more accurately reflect its nature.

Since its release, there have been 8 versions of PHP, as of 2022, with version 8.1 currently a popular choice among those using the language on their websites.

4.6.1 Feature of PHP

As it is an open-source scripting language so you can free download this and use it. PHP is a server-side scripting language. It is an open-source scripting language. It is widely used all over the world. It is faster than other scripting languages.

- Simple
- Faster
- Interpreted
- Open Source
- Case Sensitive
- Simplicity
- Efficiency
- Platform Independent
- Security
- Flexibility
- Familiarity
- Error Reporting
- Loosely Typed Language
- Real-Time Access Monitoring

4.7 Program Coding

The process of conversion of the algorithmic steps into the instructions according to some specified programming language is called coding.

The following terms of action are adopted for writing well-structured programs.

- The program module should be simple and straightforward.
- The data names and labels used should be relevant and meaningful.

- All the inputs, outputs, data statements, and program specifications should be in their respective groups so that users can feel at ease.

4.8 Implementation

Implementation is the stage in the project where the theoretical design is turned into a working system and is giving confidence to the new system for users that it will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, and an evaluation of change over methods. Apart from planning major tasks of preparing the implementations are the education and training of users. The implementation process begins with preparing a plan for the implementation of the system. According to this plan, the activities are to be carried out, discussions are made regarding the equipment and resources, and additional equipment has to be acquired to implement the new system.

Implementation is the final and the most important phase. The most critical stage in achieving a successful new system is giving the users confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and if it is found to be working according to the specification. This method also offers the greatest security since the old system can take over if errors are found or inability to handle a certain types of transactions while using the new system.

4.8.1 Operational Problem

When solving problems within operations, it's possible to do so partially and to have said problem manifest itself again and again with various mutations that would make us think we're dealing with multiple issues. By completely and thoroughly resolving the core issue, we can accomplish two things: stop wasting resources dealing with problems from the same core issue and create sustainable improvement in the organization. In order to better solve problems, the operations team should be well-trained and guided to find permanent corrective actions for the problems they encounter.

Once the initial implementation exercise is completed and the changeover has been successfully concluded, it is still dangerous to start on your laurels, as other factors can improve troublesome at a later stage.

4.9 System Testing

As part of system testing, we execute the program with the intent of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. The ultimate aim is quality assurance. Tests are carried out and the results are compared with the expected document. In the case of erroneous results, debugging is done. Using detailed testing strategies, a test plan is carried out for each module. The various tests performed are unit testing, integration testing, and user acceptance testing.

4.9.1 Unit Testing

The Website units in the system are modules and routines that are assembled and integrated to perform a specific function. As a part of unit testing, we executed the program for individual modules independently. This enables, to detect errors in coding and logic that are contained within each of the three modules. This testing includes entering data that is filling forms and ascertaining if the value matches the type and entered into the database. The various controls are tested to ensure that each performs its action as required.

4.9.2 Integration Testing

Data can be lost across any interface, one module can have an adverse effect on another, and sub-functions when combined, may not produce the desired major functions. Integration testing is systematic testing to discover errors associated with the interface. The objective is to take unit-tested modules and build a program structure. All the modules are combined and tested as a whole. Here the admin module, employee module, and animal module options are integrated and tested.

This testing provides the assurance that the application is a well-integrated functional unit with a smooth transition of data.

4.9.3 User Acceptance Testing

User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping the records of applicants and making changes to the details and password whenever required.

Database Design

5.1 Introduction

Every organization has some important needs. A company has to save information about their running system. These pieces of information are called data. Organization can store data on various media and in different formats. For example, a hard copy document in a filing cabinet or data stored in electronic spreadsheets or in the database.

The data is stored in computers in tables and databases; so far, an accurate and free from anomalies system, table designing is of key importance. Database designing is further sub divided into two parts:

- Logical Database Design
- Physical Database Design

5.1.1 Logical Database Design

Logical design of an information system defines the logical and conceptual relationship among the components of information system. A logical design defines all the inputs that are available to the system, all the output that must be produced by the system and all the process that must be performed to meet the defined system requirements independent of how they will be physically accomplished. The logical design does not address the actual methods of implementation.

5.1.2 Physical Database Design

Physical database design is the process of mapping the logical database structures developed in previous stages into an internal model. Physical database is the last step in the database design process. There are three major inputs to physical database design:

- Logical database structures that were developed during logical design. The database design structures may be expressed as hierarchical, network and relational data models.
- User processing requirements that were identified during requirement definitions, including size and frequency of use of the database and requirements for each of the following:

- Response time
- Security
- Backup
- Relation of data

- Characteristics of the database management system (DBMS) and other components of the computer operating environments.

5.2 Normalization

The process of finding stable set of relations that is faithful model of the enterprise is known as normalization. By following the principles of normalization, we can achieve a design that is highly flexible, allowing the model to be extended when needed to account for new attributed, entity sets and relationship. We can also reduce redundancy in the database and ensure that the design is free of certain updates, insertion and deletion anomalies. An anomaly is an inconsistent,

Incomplete, or contra dictionary state of the database. If these anomalies were present, we would be unable to represent some information, we might lose information when certain updates were prepared, and we would run the risk of having data become inconsistent over time.

5.2.1 First Normal Form

First Normal Form sets very basic rules for an organized database:

- Eliminate duplicate columns from the same table
- Create separate tables for each group of related data and identify each row with a unique column or set of columns

5.2.2 Second Normal Form

Second Normal Form further addresses the concept of removing duplicative data:

- Meet all the requirements of 1NF
- Remove subsets of data that apply to multiply rows of a table and place them in separate tables
- Create relationship between these tables and their predecessors through the use of foreign keys

5.2.3 Third Normal Form

Third Normal Form goes on large step further

- Meet all the requirements of 2NF
- Remove columns that are not dependent upon the primary key

5.3 Description of Database Tables

Table Name: user_iformation

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	user_id	int(11)			No	None			Change Drop More
2	user_name	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
3	user_fullname	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
4	user_email	varchar(200)	utf8mb4_general_ci		No	None			Change Drop More
5	user_password	text	utf8mb4_general_ci		No	None			Change Drop More
6	user_image	varchar(900)	utf8mb4_general_ci		No	None			Change Drop More
7	status	int(11)			No	None			Change Drop More

```
CREATE TABLE `user_iformation` (
  `user_id` int(11) NOT NULL,
  `user_name` varchar(100) NOT NULL,
  `user_fullname` varchar(100) NOT NULL,
  `user_email` varchar(200) NOT NULL,
  `user_password` text NOT NULL,
  `user_image` varchar(900) NOT NULL,
  `status` int(11) NOT NULL
);
```

Table Name: question

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	question_id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	user_email	varchar(225)	utf8mb4_general_ci		No	None			Change Drop More
3	u_name	varchar(225)	utf8mb4_general_ci		No	None			Change Drop More
4	question	varchar(500)	utf8mb4_general_ci		No	None			Change Drop More
5	likes	int(225)			No	None			Change Drop More
6	dislikes	int(225)			No	None			Change Drop More
7	user_image	varchar(900)	utf8mb4_general_ci		No	None			Change Drop More
8	date	varchar(200)	utf8mb4_general_ci		No	None			Change Drop More

```
CREATE TABLE `question` (
  `question_id` int(11) NOT NULL,
  `user_email` varchar(225) NOT NULL,
  `u_name` varchar(225) NOT NULL,
  `question` varchar(500) NOT NULL,
  `likes` int(225) NOT NULL,
  `dislikes` int(225) NOT NULL,
  `user_image` varchar(900) NOT NULL,
  `date` varchar(200) NOT NULL
);
```

Table Name: answers

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	q_id	int(11)			No	None			Change Drop More
3	u_id	int(11)			No	None			Change Drop More
4	answer_desc	text	utf8mb4_general_ci		No	None			Change Drop More
5	user_email	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More

```
CREATE TABLE `answers` (
  `id` int(11) NOT NULL,
  `q_id` int(11) NOT NULL,
  `u_id` int(11) NOT NULL,
  `answer_desc` text NOT NULL,
  `user_email` varchar(100) NOT NULL
);
```

Table Name: like_system

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	like_id	int(200)			No	None		AUTO_INCREMENT	Change Drop More
2	question_id	int(200)			No	None			Change Drop More
3	liked_username	varchar(225)	utf8mb4_general_ci		No	None			Change Drop More

```
CREATE TABLE `like_system` (
  `like_id` int(200) NOT NULL,
  `question_id` int(200) NOT NULL,
  `liked_username` varchar(225) NOT NULL
);
```

Table Name: dislike_system

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	question_id	int(11)			No	None			Change Drop More
3	disliked_username	varchar(225)	utf8mb4_general_ci		No	None			Change Drop More

```
CREATE TABLE `dislike_system` (
  `id` int(11) NOT NULL,
  `question_id` int(11) NOT NULL,
  `disliked_username` varchar(225) NOT NULL
);
```

Table Name: Contact Us

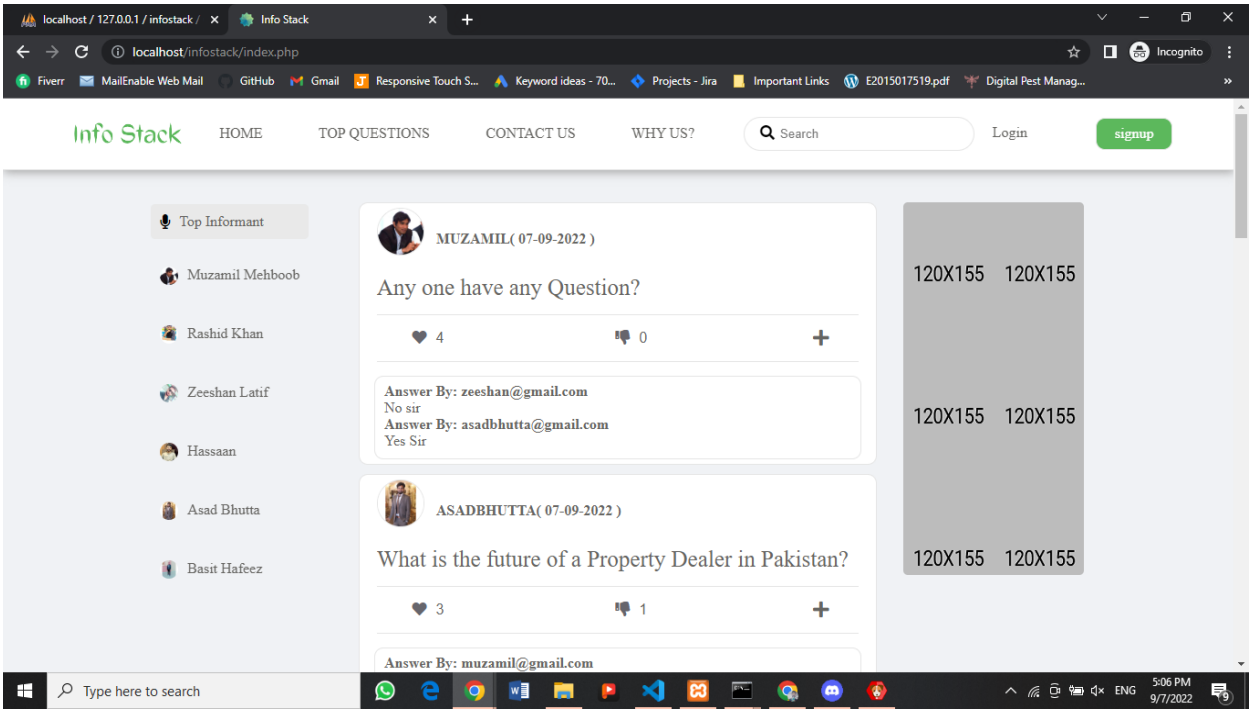
#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	full_name	varchar(150)	utf8mb4_general_ci		No	None			Change Drop More
2	email	varchar(150)	utf8mb4_general_ci		No	None			Change Drop More
3	company	varchar(150)	utf8mb4_general_ci		No	None			Change Drop More
4	account	int(11)			No	None			Change Drop More
5	message	text	utf8mb4_general_ci		No	None			Change Drop More

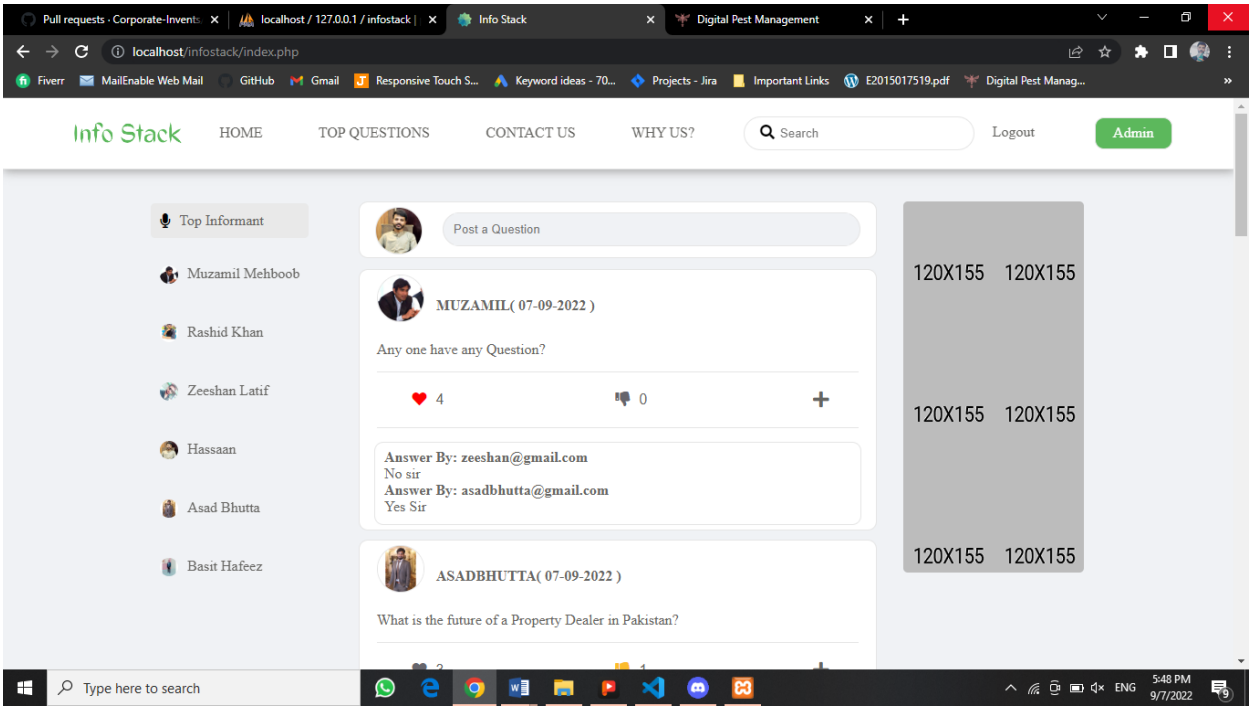
```
CREATE TABLE `contact_us` (
  `full_name` varchar(150) NOT NULL,
  `email` varchar(150) NOT NULL,
  `company` varchar(150) NOT NULL,
  `account` int(11) NOT NULL,
  `message` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

Interface/ User Guide

6.1 Home Screen

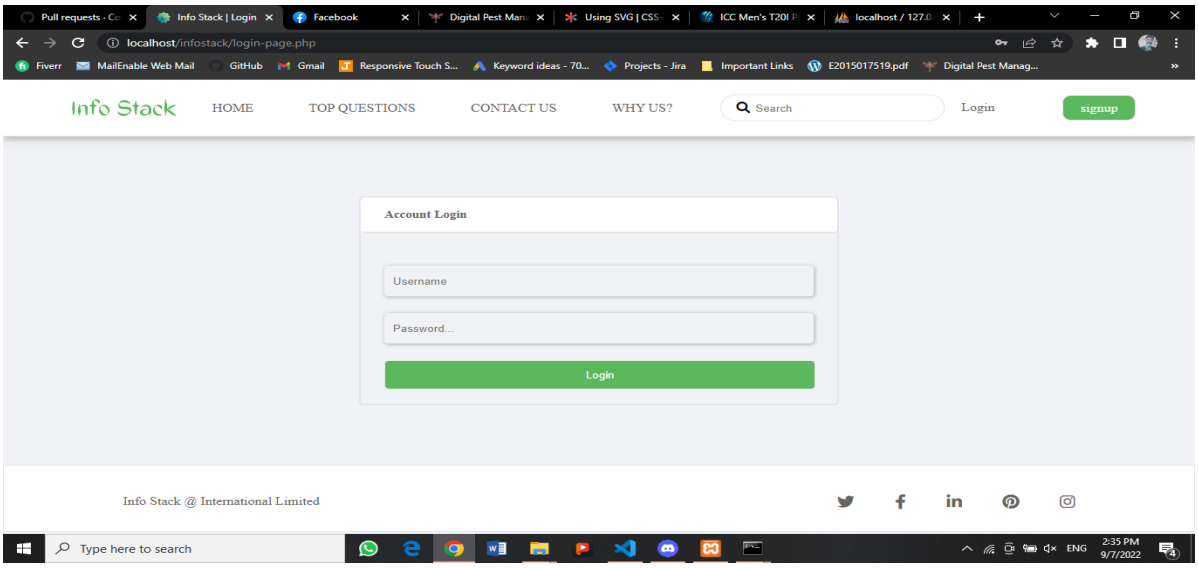
One can see the questions that have been posted, their likes, dislikes, answers, top informants on this screen without logging in. A user must needs to login for posting questions, liking, disliking or for adding a question. We have shown two images of this screen first for a visitor only and second for the user who is logged in to the system. On the left side he can see the person who have answered most.





6.2 Login Screen

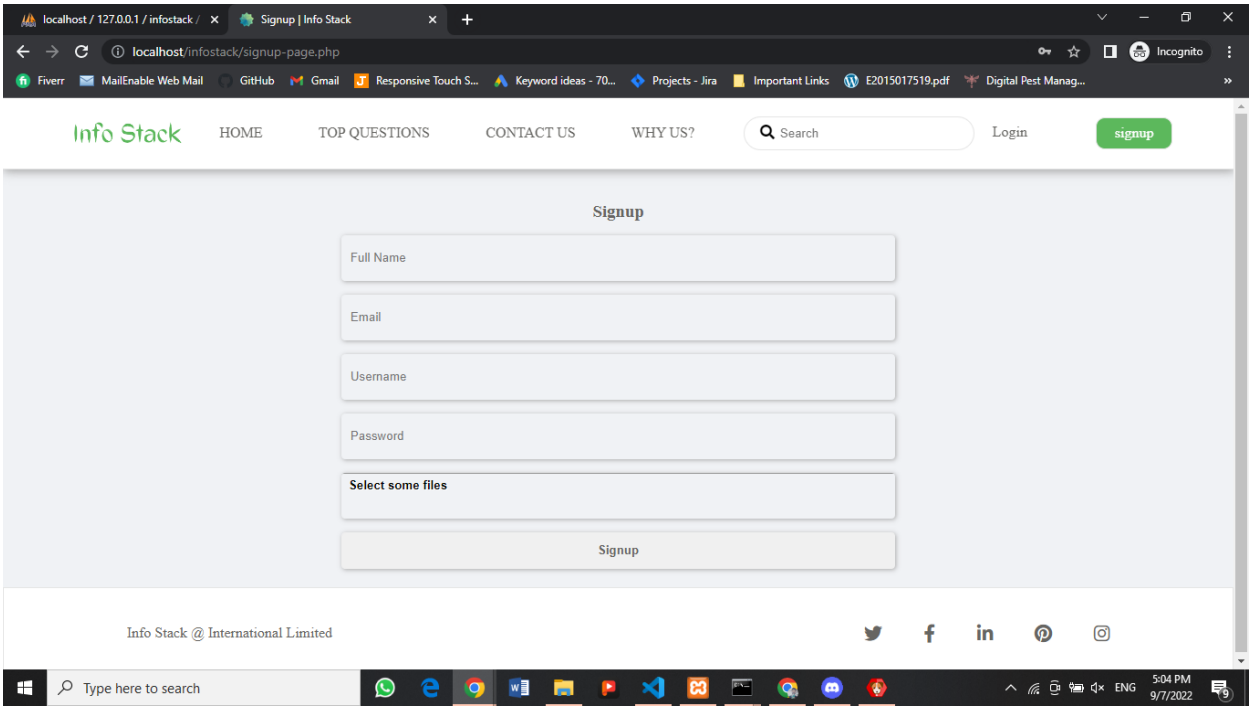
This is login page is for the both administrator and simple user. In it he will input correct username and password than after validation main home will be displayed. If he enters incorrect credentials, an error message will pop up.



6.3 Signup Screen

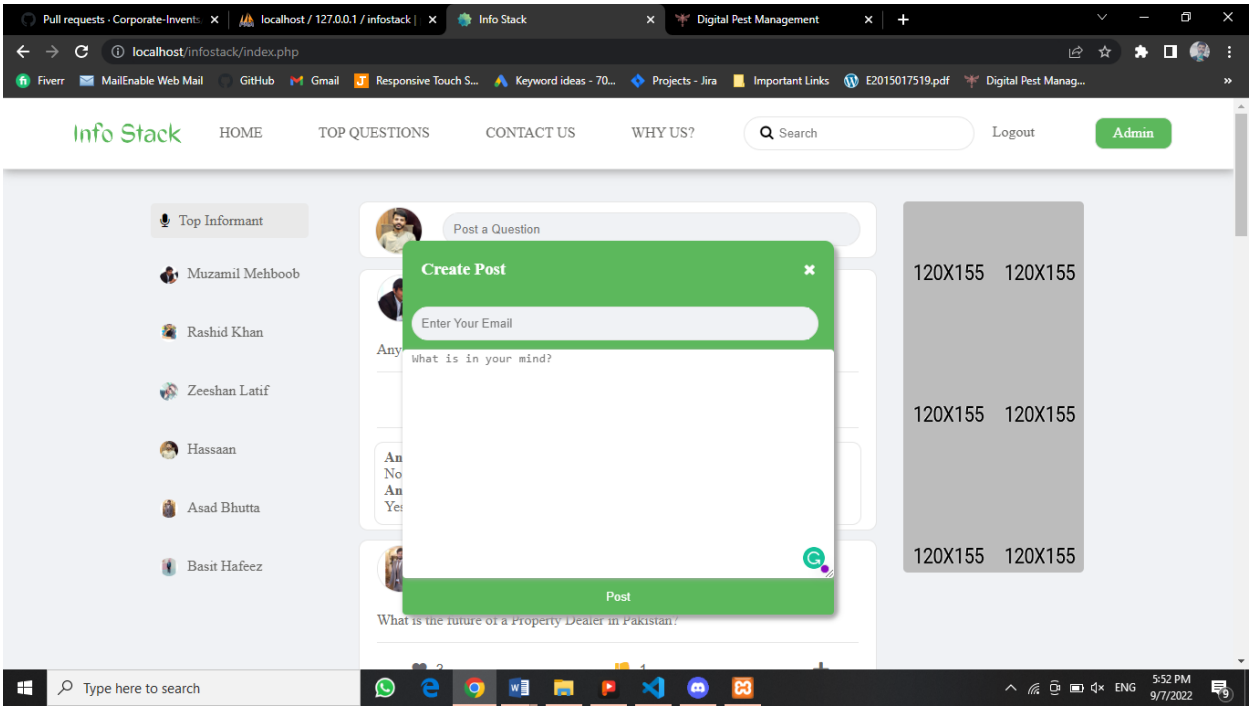
If there a visitor who wants to join **"Info Stack"** and he don't have an account he can create an account by entering following details…

- Full Name
- Email
- Username
- Password
- Profile Pic



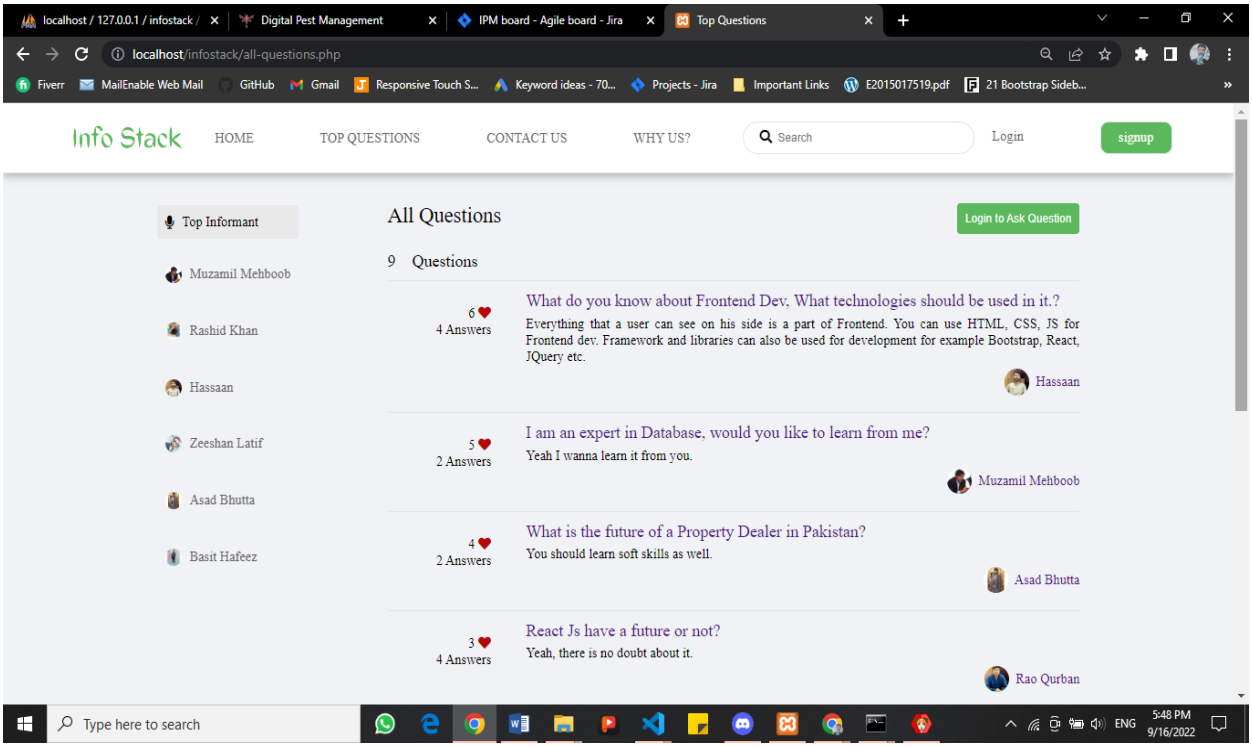
6.4 Add Question

This is a pop up that can be displayed after logging in to a system. From this screen a user can post a question. He needs to enter his correct email id and a question that he wants to ask. After filling details he will have to click post, the question will be posted with current date and his name. and will be displayed at home page.



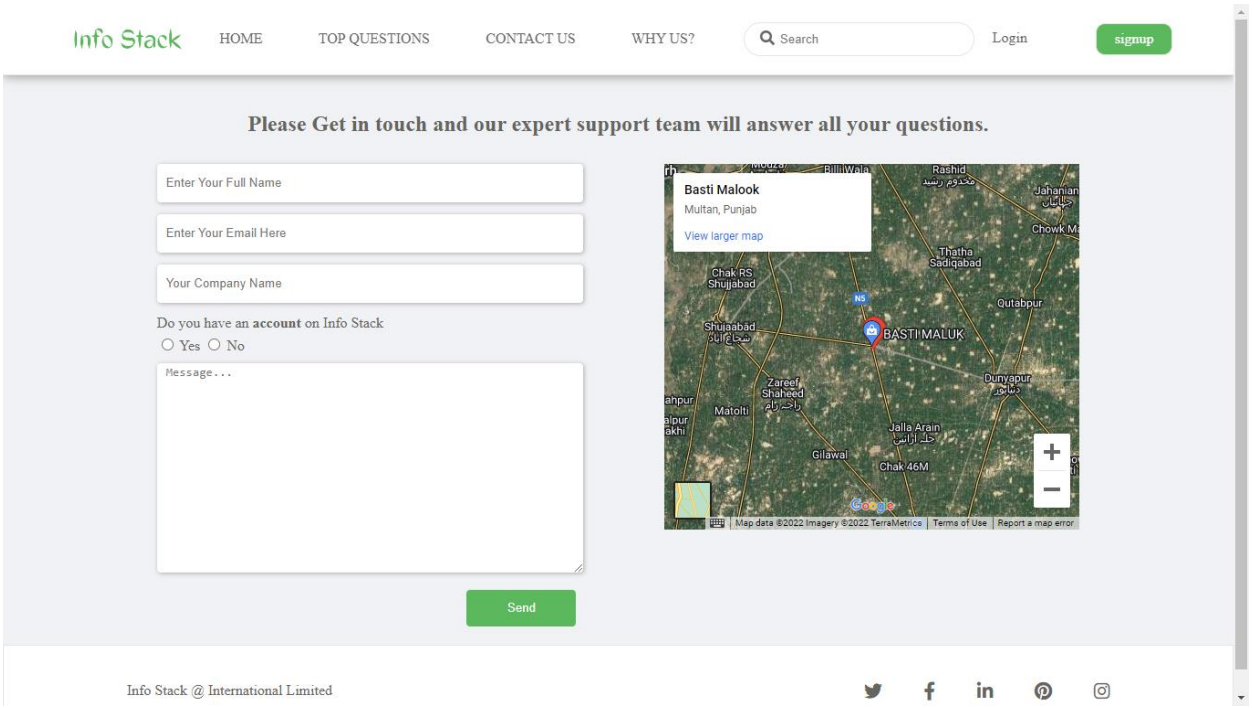
6.5 Top Questions

In this screen we have managed the number of total questions that have been posted till now, and the most answered and liked questions will be on top. User can also see top respondent on this screen.



6.6 Contact Us

Contact page is the last one that visitors see before they decide if they need your project. There are little chances that users will change their mind if your home page is brilliant but contact page has a so-so design. Still, it is better not to risk with it! If a user likes your website thanks to a perfect website design, the Contact page will just emphasize how cool you are.

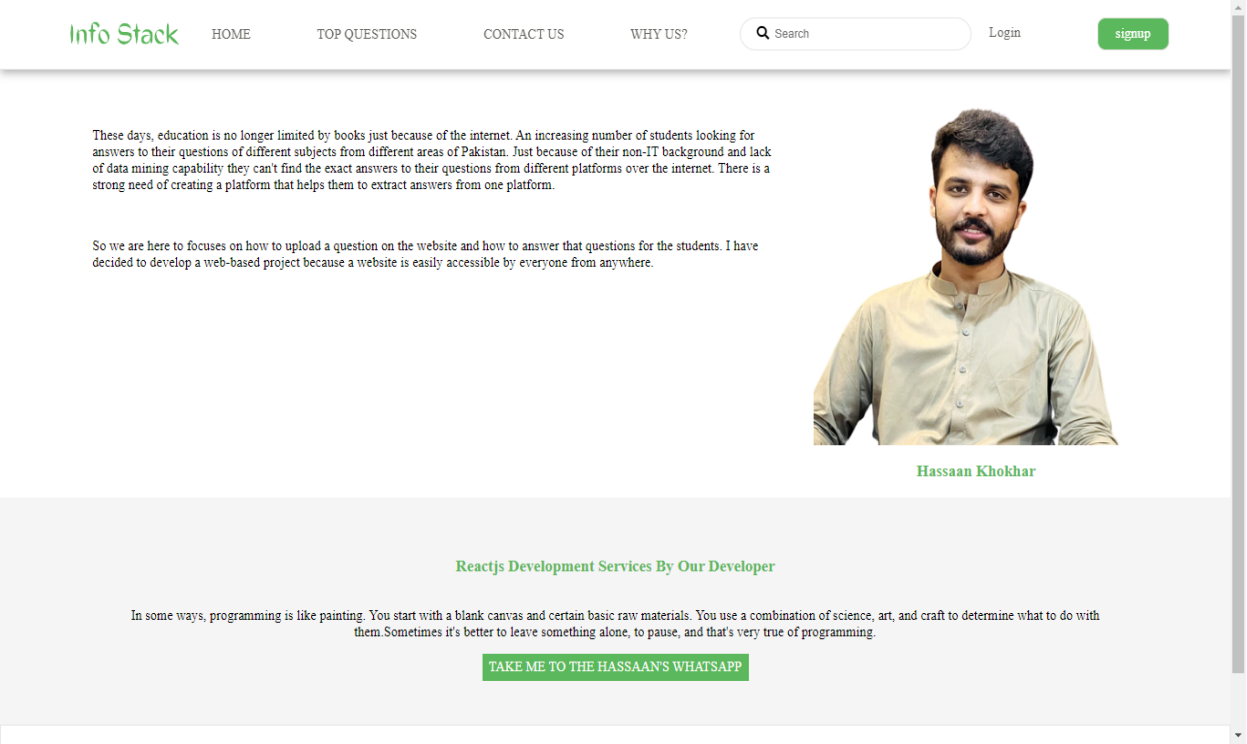


6.7 Why Us

The Why us page of your website is an essential source of information for all who want to know more about your business.

Why us pages are where you showcase your history, what is unique about your work, your company's values, and who you serve.

The design, written content, and visual or video elements together tell an important story about who you are and why you do it.



6.8 Responsive Web Design

Responsive design is a graphic user interface (GUI) design approach used to create content that adjusts smoothly to various screen sizes. Designers size elements in relative units (%) and apply media queries, so their designs can automatically adapt to the browser space to ensure content consistency across devices.

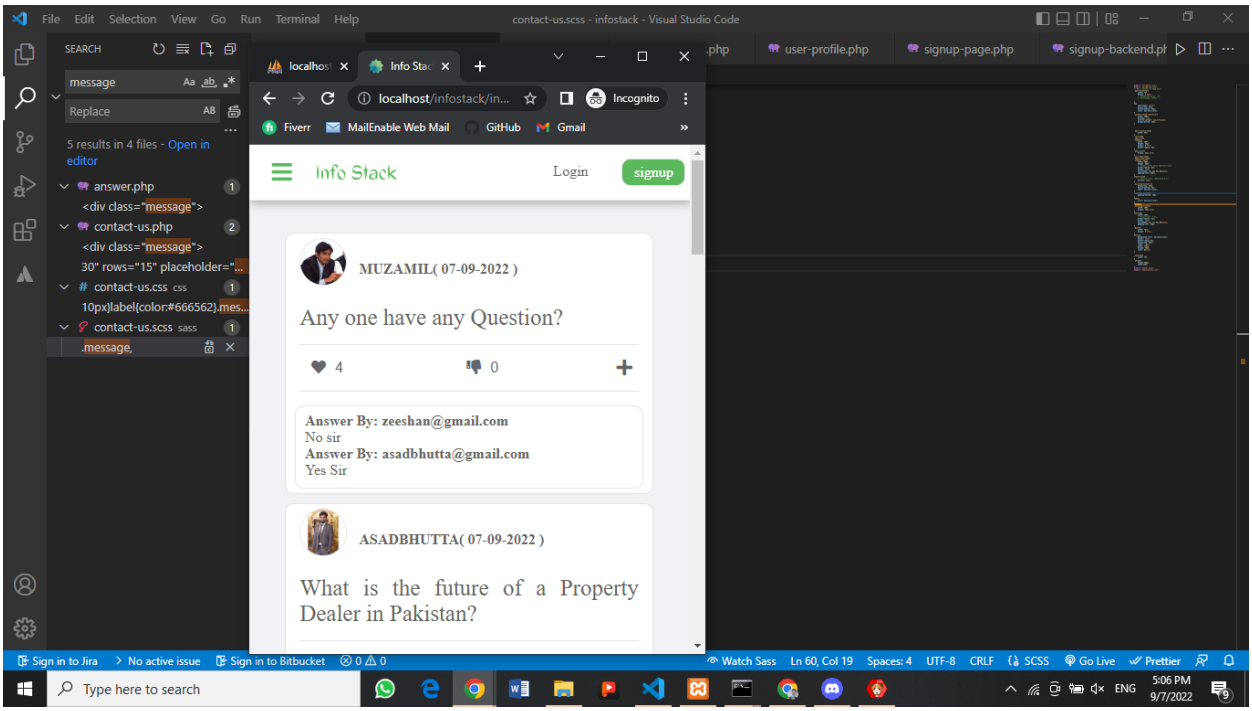
- Large Screen (For Laptops and LEDs etc)
- Medium Screen (Tablet)
- Small Screen (Mobile)

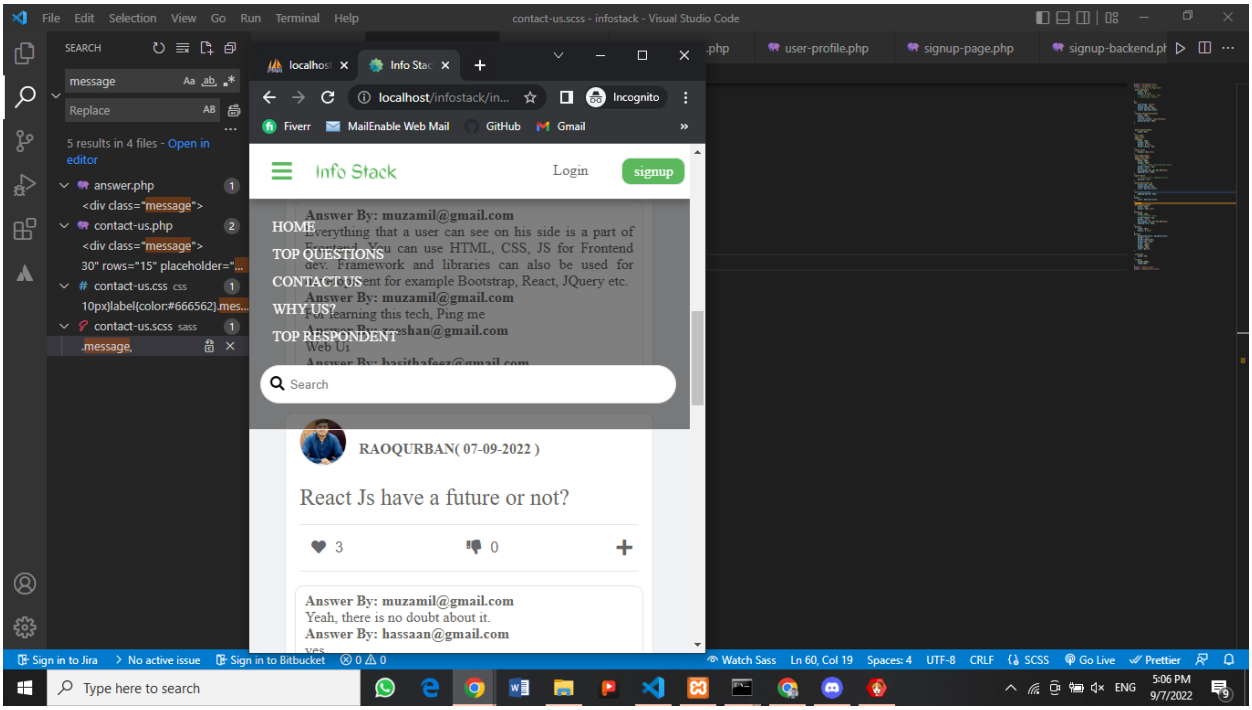
We have used media Queries for making our site responsive.

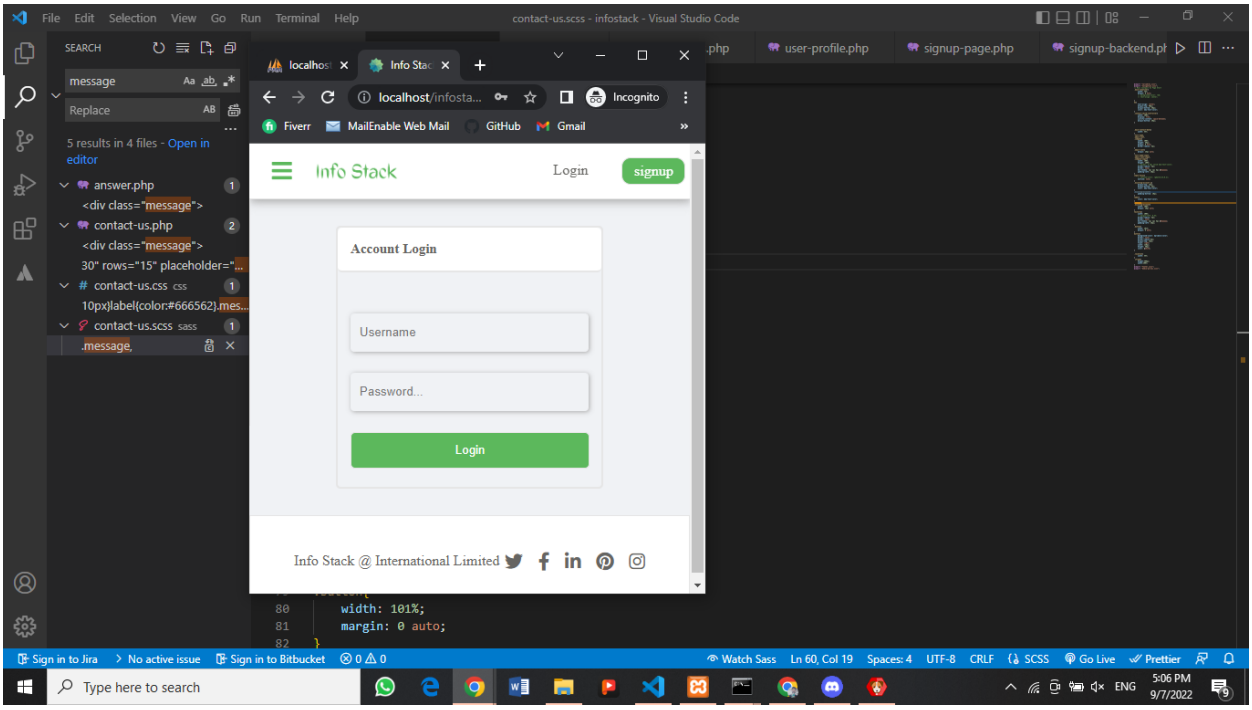
6.8.1 Media Queries

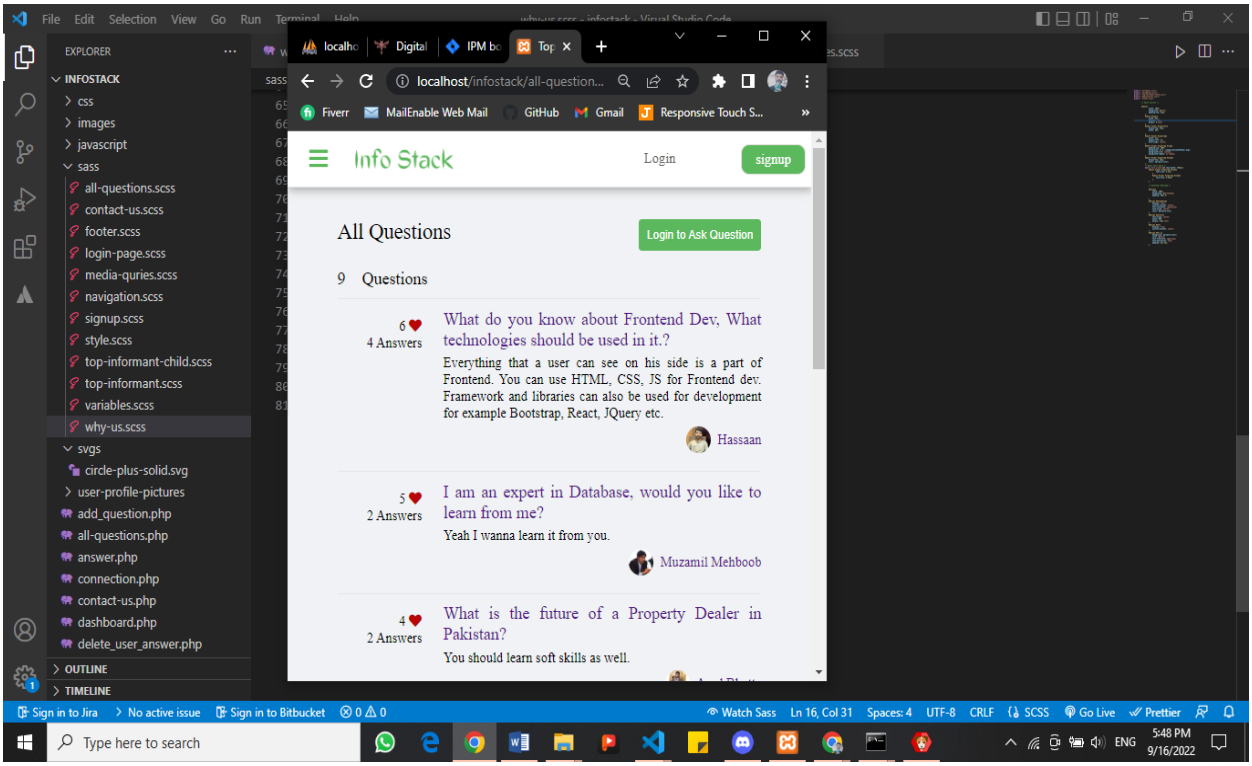
These are filters you use to detect the browsing device's dimensions and make your design appear appropriately. With these, you probe to determine what size of screen a user is viewing your design on. These will alter the site layout to meet certain conditions. You also include these through CSS, and the most frequently used ones are min-width, max-width, min-height and max-

height. So, based on a screen's width, height, orientation, etc., you can accurately specify how your design will be rendered for different users to see.






Info Stack
Login
signup
Account Login
Username
Password...
Login
Info Stack @ International Limited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All Questions
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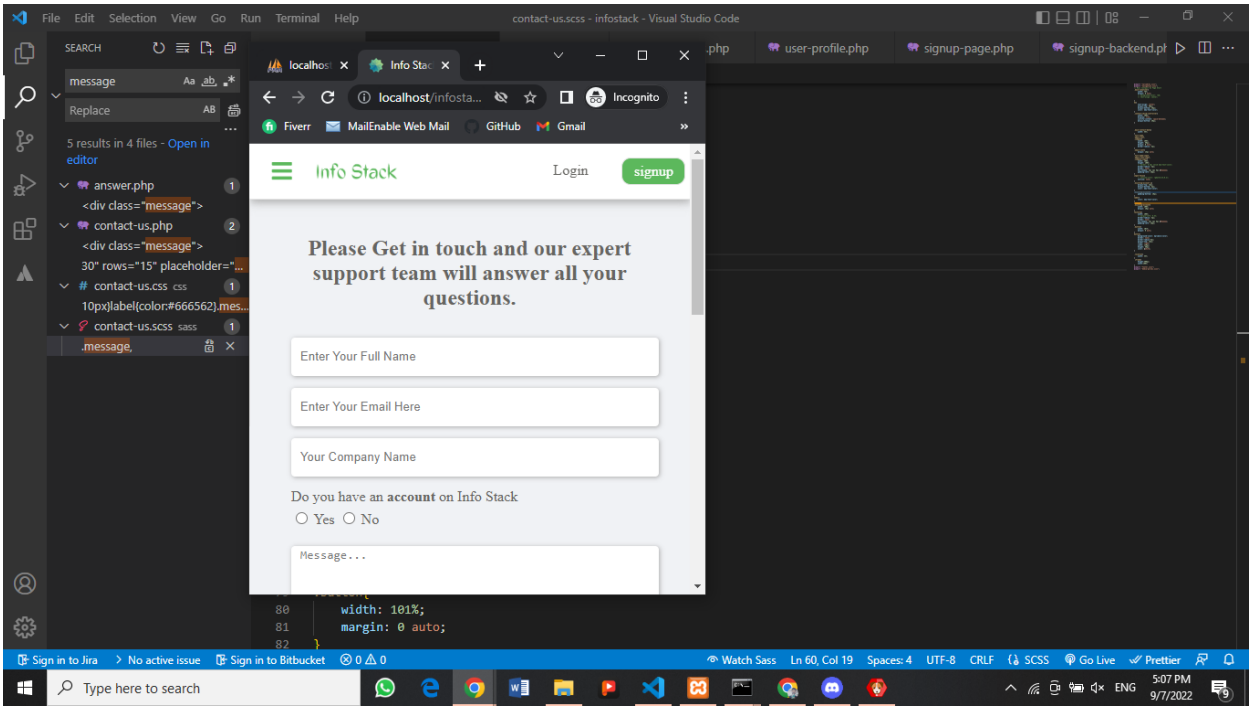
9 Questions
What do you know about Frontend Dev, What technologies should be used in it.?
Everything that a user can see on his side is a part of Frontend. You can use HTML, CSS, JS for Frontend dev. Framework and libraries can also be used for development for example Bootstrap, React, JQuery etc.
Hassaan
I am an expert in Database, would you like to learn from me?
Yeah I wanna learn it from you.
Muzamil Mehboob
What is the future of a Property Dealer in Pakistan?
You should learn soft skills as well.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Please Get in touch and our expert support team will answer all your questions.
Enter Your Full Name
Enter Your Email Here
Your Company Name
Do you have an account on Info Stack
Yes
No
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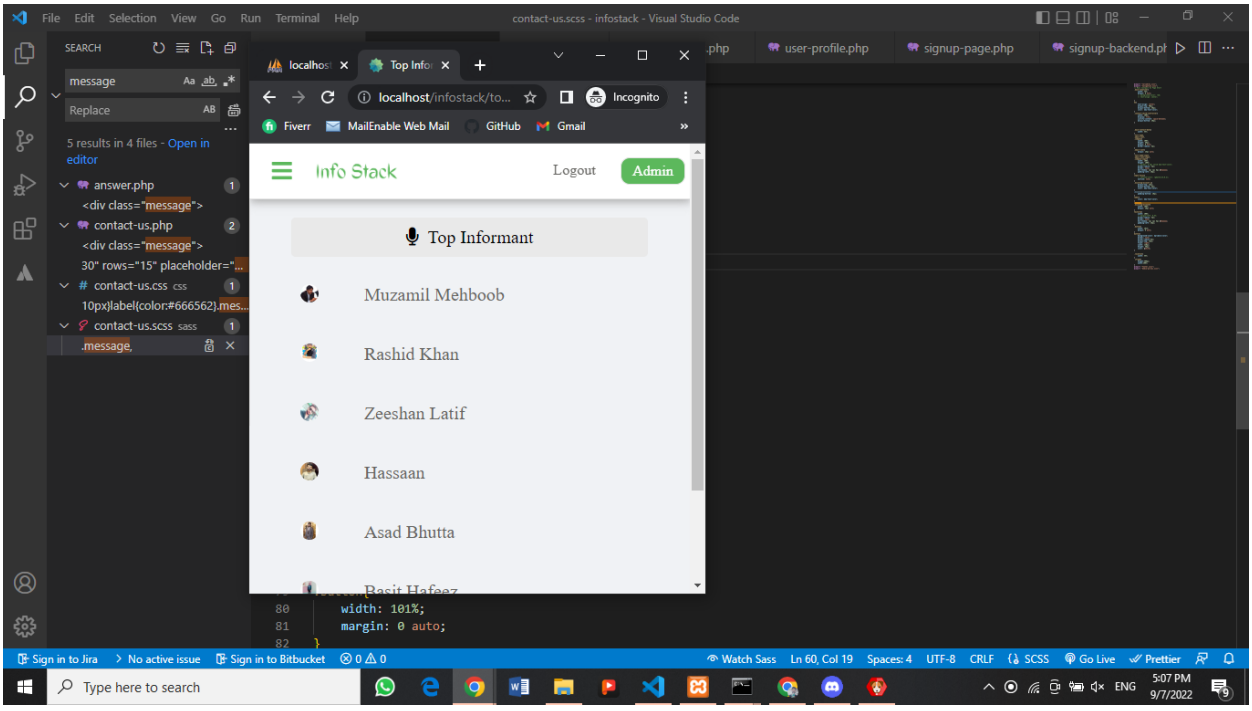
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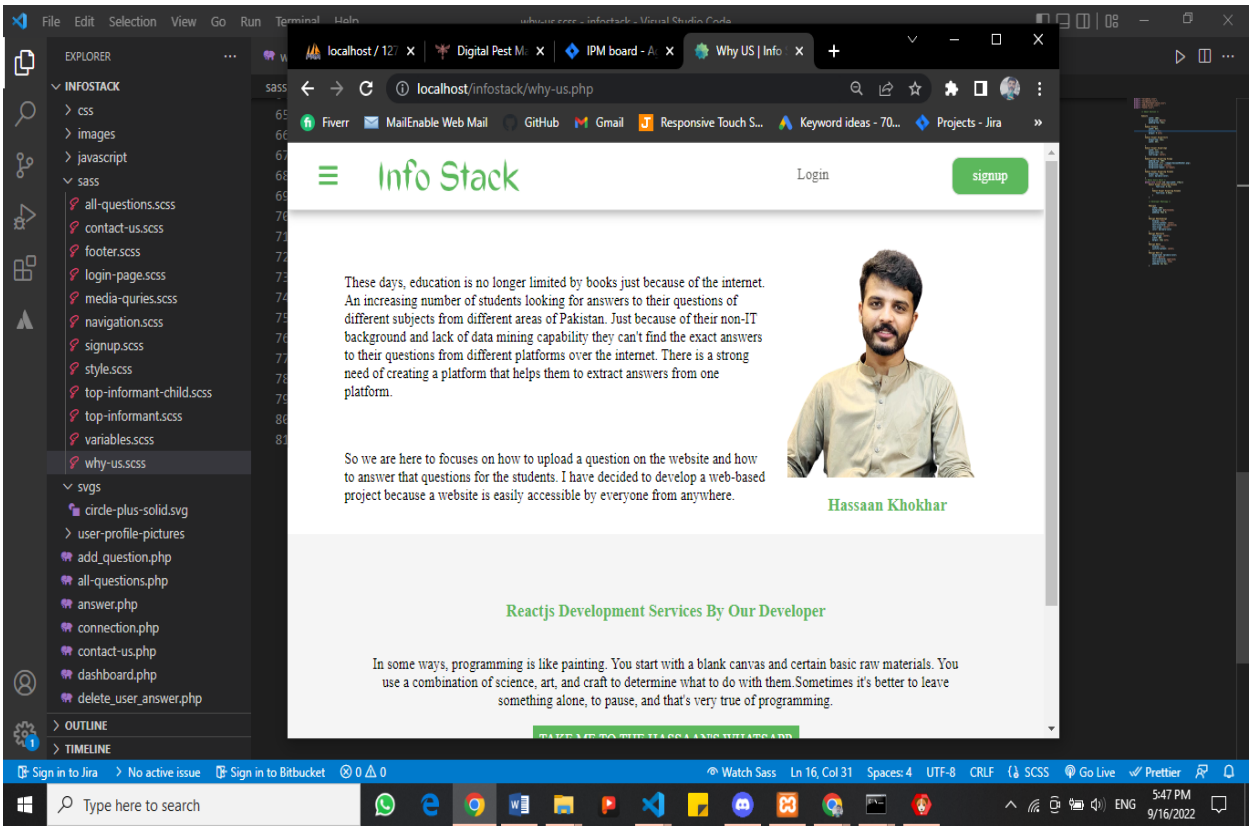
Admin
Top Informant
Muzamil Mehboob
Rashid Khan
Zeeshan Latif
Hassaan
Asad Bhutta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These days, education is no longer limited by books just because of the internet. An increasing number of students looking for answers to their questions of different subjects from different areas of Pakistan. Just because of their non-IT background and lack of data mining capability they can't find the exact answers to their questions from different platforms over the internet. There is a strong need of creating a platform that helps them to extract answers from one platform.
So we are here to focuses on how to upload a question on the website and how to answer that questions for the students. I have decided to develop a web-based project because a website is easily accessible by everyone from anywhere.
Hassaan Khokhar
Reactjs Development Services By Our Developer
In some ways, programming is like painting. You start with a blank canvas and certain basic raw materials. You use a combination of science, art, and craft to determine what to do with them.Sometimes it's better to leave something alone, to pause, and that's very true of programming.
localhost/infostack/why-us.php
INFOSTACK
Type here to search

Conclusion

This system, being the first I have created a Q&A Website, has proven more difficult than originally imagined. Every time progress was made and features were added, ideas for additional features or methods to improve the usability of the system made themselves apparent. Furthermore, adding one feature meant that another required feature was now possible, and balancing these completing these required features with the ideas for improvement as well as remembering everything that had to be done was a project in itself. Language used is simple to understand. Overall, the system performs well, and while it includes all of the features that may have been desired, it lives up to initial expectations. The majority of features that are included work flawlessly.

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