Software Requirements Specification

for

MindHive

Version 1.1

Prepared by

Group #: 2 **Group Name: MindHive**

Sahil Bansal	**200836**	**sbansal.sb2002@gmail.com**
Harsh Trivedi	**200422**	**harsh.trivedi.mikki@gmail.com**
Parth Maniar	**200671**	**pmaniar1906@gmail.com**
Ujwal Jyot Panda	**201060**	**ujwal12366@gmail.com**
Rishav Bikarwar	**200792**	**ris27hav@gmail.com**
Adi Pratap Singh	**200036**	**apsinghnsa@gmail.com**
Aakash Om Trivedi	**200003**	**aakashtri13@gmail.com**
Bhavya Garg	**200270**	**gargs.jpr@gmail.com**
L Gokulnath	**200542**	**lgokulnath02@gmail.com**
Gavish Garg	**200385**	**gavish94170garg@gmail.com**

Course: CS253

Mentor TA: Sri Madhan

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
v1.1	All group members	First version of the requirement document	30/01/2022

1 Introduction

1.1 Product Scope

It is a common saying that *knowledge increases with sharing.* Motivated by this, we decided to build a Q&A platform for the IITK community where anyone can ask any question and answer any previously asked question. Currently, there is no platform where juniors can ask questions to seniors or students can ask general questions to professors. This project would provide a medium to clear doubts and also to share knowledge.
MindHive would allow users to choose *tags* of their interests and they will see questions with those tags on their homepage. These tags will build sub-communities within the IITK community. This will help in getting faster answers for questions since people belonging to the respective sub-communities can answer them.

One of the main benefits of this project would be that many freshers who are full of questions but maybe hesitant to ask can clear their doubts anonymously as we will provide an *anonymous mode* for asking/answering questions. Another big benefit would be that seniors/professors with higher levels of expertise, can easily share their knowledge with the community.
We hope that MindHive will become a great source of knowledge.

1.2 Intended Audience and Document Overview

The document is mainly intended for the product end-users (to understand product requirements and give suggestions) and the developers (to build the product as per requirements). The user should start with the introduction, then he/she could read the product overview section (1.6) followed by specific requirements. The developers would be mainly interested in specific requirements and non-functional requirements.

1.3 Definitions and Abbreviations

1.3.1 Definitions

1. Administrator- The person(s) who will have access to the full system, including database, report section, etc.
2. Spectators-The people who are just browsing the site to search for some questions and give answers, or give comments on questions or answers.
3. Questioner-The person who is asking the questions.

1.3.2 Abbreviations

- IITK- Indian Institute of Technology, Kanpur
- OTP- One Time Password
- SQL- Structured Query Language
- UI- User Interface
- DB - Database

1.4 Document Conventions(TA)

- General Text: Font-Arial Size-11
- Heading: Font-Arial Size-18
- Sub headings: Font-Arial Size-14 Style-Bold
- Margin-1”

1.5 References and Acknowledgments

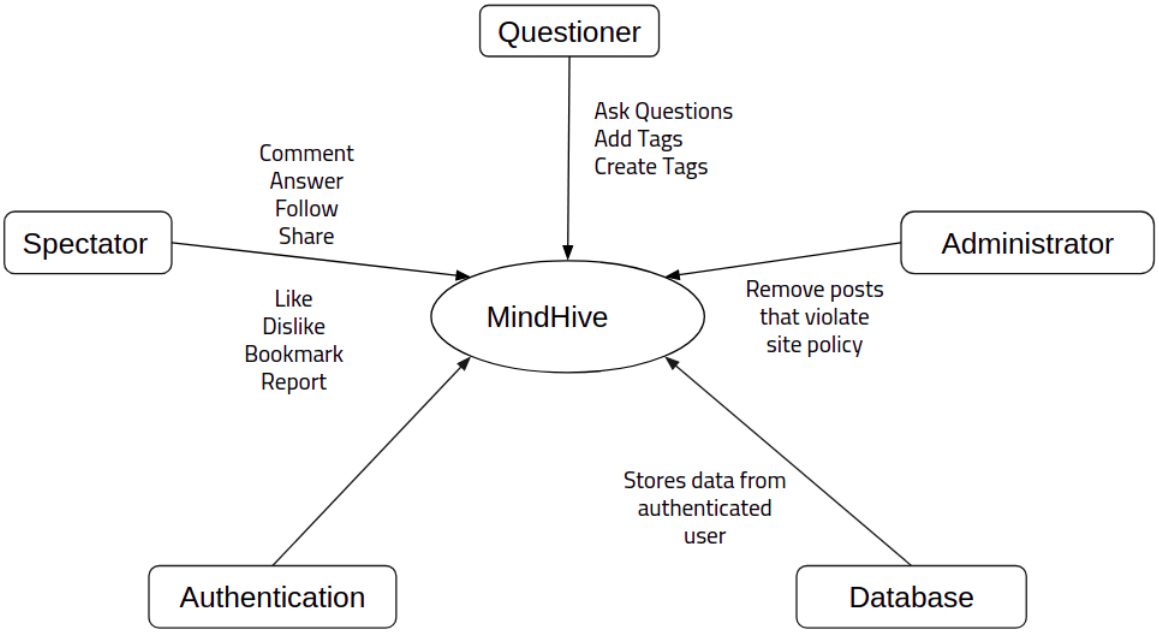
[1] User Interface (made by us)
[2] *https://krazytech.com/projects/software-requirements-specification-report*

2 Overall Description

2.1 Product Overview

MindHive is a portal where community members can help each other by clearing doubts that other members have asked. Our goal is to develop a user-friendly and easily accessible question-answer application that would save the time of the IITK junta. Basically, it is a QnA website for the IITK community. Users can ask questions and also post answers to the questions previously asked. There is also an option to give comments to questions and answers. It will be very helpful for the campus community as they can post any of their doubts, be it academic, related to clubs, events, internships, placements, coding, career options, . . . the list is endless.

2.1.1 Context Diagram



2.2 Product Functionality

- Maintain User profile.
- Email confirmation
- Provide different fields(tags) of interest.
- Brief Questions categorization.
- Home Page to show previously asked Questions.
- Provide a facility for searching questions, users and tags.
- Facilitates users to follow other users.
- Users can ask questions.

- Users can comment on the questions asked.
- Provide facility to answer the Questions asked.
- Facilitates to put comments.
- Provide a personalized profile.
- Provide facility to Report an Answer or a Question.
- Provide customer support.

2.3 Design and Implementation Constraints

- We have a specified memory in the server so the number of users is constrained by an upper bound.
- Users can't prevent other people from seeing their query as it is open to all.
- As of now, users can raise a query only in English.
- Mindhive does not provide people the right to choose the category of people who will be able to view their shared items. If this is the case, users cannot set their privacy settings to prevent some people's access to their information.
- The length of the search string (for questions, users, tags) must be less than 30 characters. We also prevent the use of non-ASCII characters at all the text based fields.

2.4 Assumptions and Dependencies

- There is no user side scripting in the text based fields.
- We also assume that there is no attempt of SQL Injection.
- There is no simultaneous editing of data from different devices. It may lead to data loss.

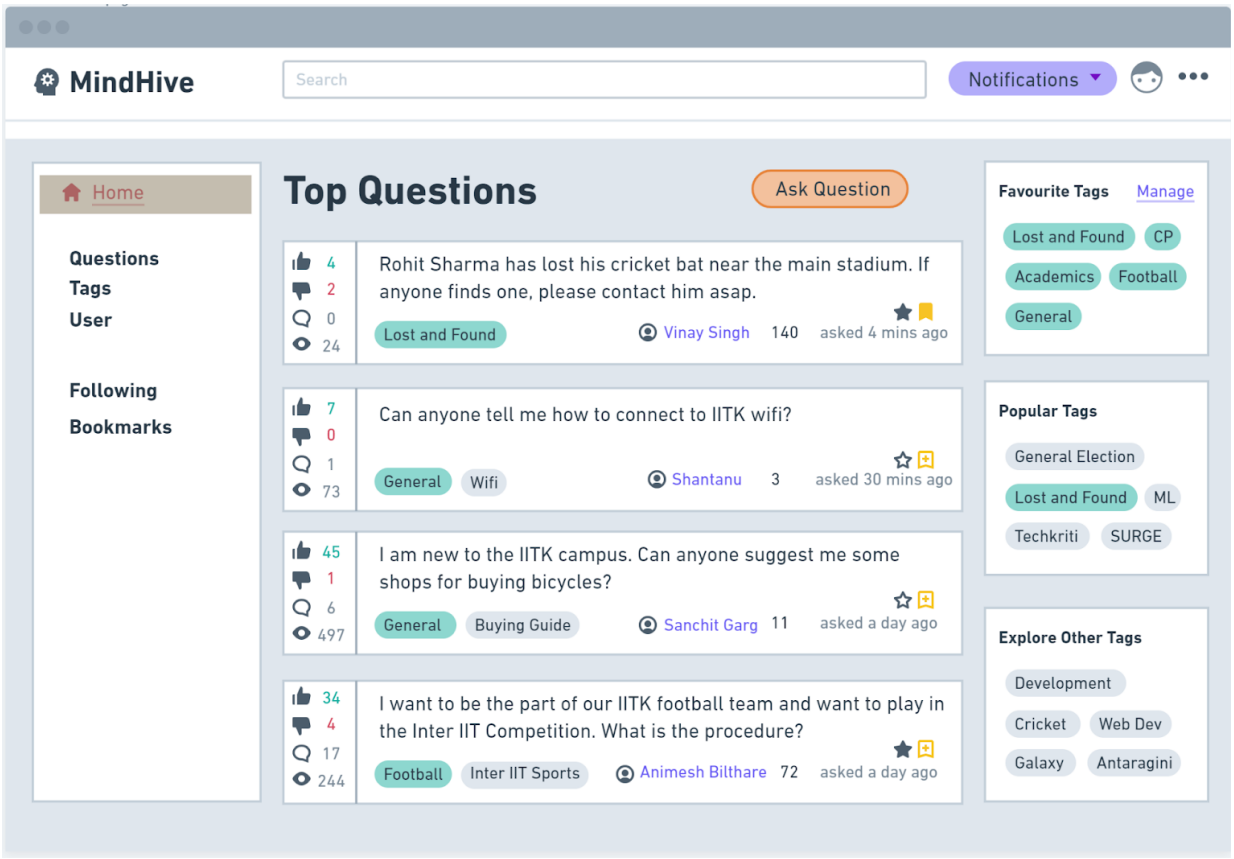
3 Specific Requirements

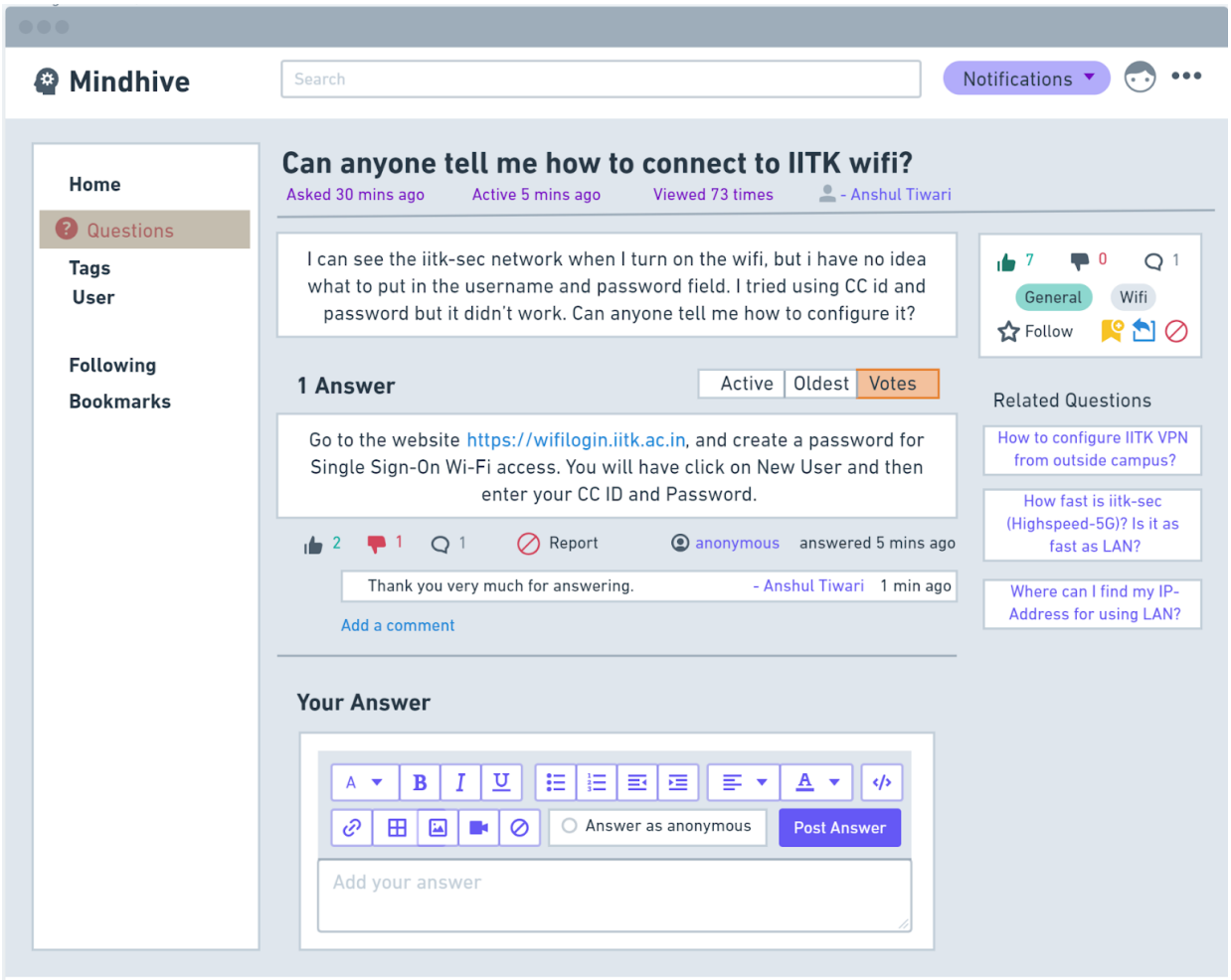
3.1 External Interface Requirements

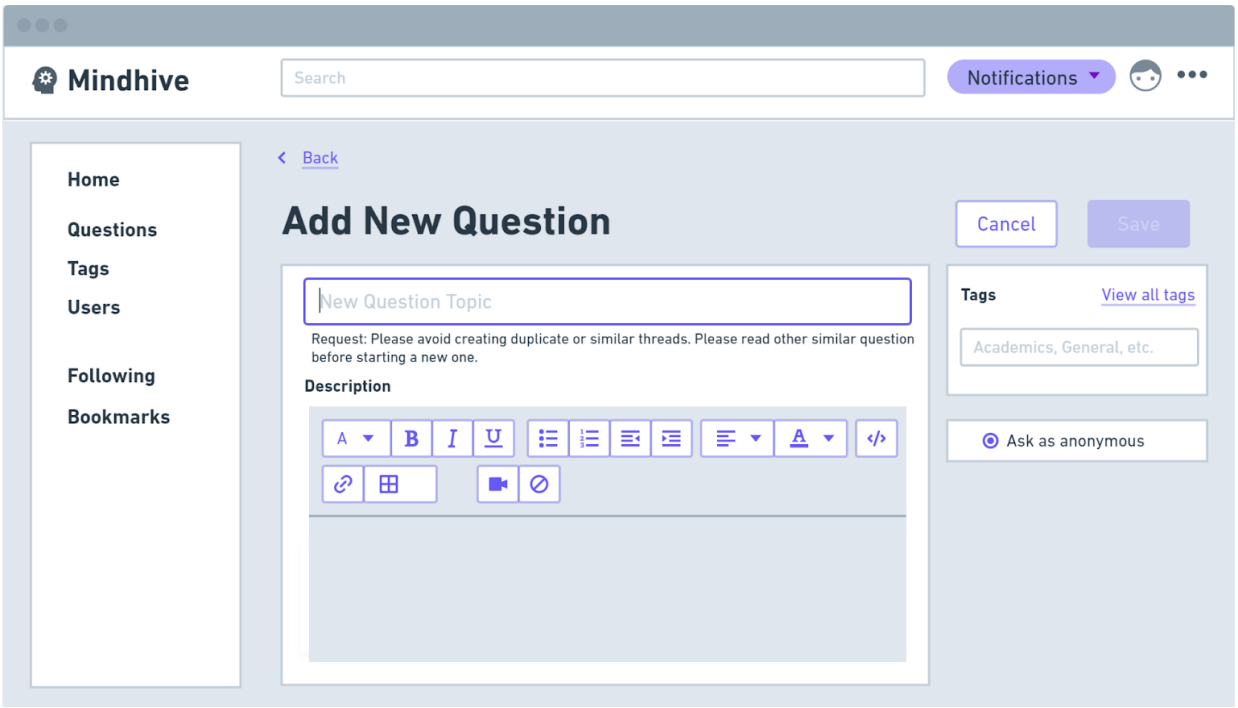
3.1.1 User Interfaces

A user just needs familiarity with navigation in browsers to be able to understand all the functions provided by our system. The first image given below would be the home page. The user can view the list of all questions, tags, and users as well as following and bookmarked questions from the menus provided on the left side of the page. The user can select his favorite tags and view popular tags from the right side. For notifications, user profiles and other menus can be found in the top right corner. There is a text area for searching for questions. In the middle are the top questions as per the favorite tags of the user which can be viewed by clicking on them. There is also an option for asking questions.

The second page shows the UI for viewing a question. The interface is similar to before. Users can vote, share, report, follow, comment, answer and do other questions from the menus provided. The third image shows a similar interface for asking a question.




Mindhive
Search
Notifications
Home
Questions
Tags
User
Following
Bookmarks
Can anyone tell me how to connect to IITK wifi?
Asked 30 mins ago
Active 5 mins ago
Viewed 73 times
- Anshul Tiwari
I can see the iitk-sec network when I turn on the wifi, but i have no idea what to put in the username and password field. I tried using CC id and password but it didn't work. Can anyone tell me how to configure it?
7
0
1
General
Wifi
Follow
1 Answer
Active
Oldest
Votes
Go to the website https://wifilogin.iitk.ac.in, and create a password for Single Sign-On Wi-Fi access. You will have click on New User and then enter your CC ID and Password.
2
1
1
Report
anonymous
answered 5 mins ago
Thank you very much for answering.
- Anshul Tiwari
1 min ago
Add a comment
Related Questions
How to configure IITK VPN from outside campus?
How fast is iitk-sec (Highspeed-5G)? Is it as fast as LAN?
Where can I find my IP-Address for using LAN?
Your Answer
Answer as anonymous
Post Answer
Add your answer


Mindhive
Search
Notifications
Home
Questions
Tags
Users
Following
Bookmarks
Back
Add New Question
Cancel
Save
New Question Topic
Request: Please avoid creating duplicate or similar threads. Please read other similar question before starting a new one.
Description
Tags
View all tags
Academics, General, etc.
Ask as anonymous

3.1.2 Hardware Interfaces

Clients must have the required devices and an internet connection to browse the website.
Server Side - We will be requiring a web server to host our website.

3.1.3 Software Interfaces

Client Side - an operating system (Windows, macOS, Linux, etc.), a web browser
Server side - Web server, Database

3.2 Functional Requirements

3.2.1 Maintain user profile

1. The system allows users to create their profiles and set their credentials.
2. The system allows users to update their personal information.
3. The system allows users to change passwords.

3.2.2 Email confirmation

1. The system stores email-ids of customers.
2. Users can use only their IITK email-ids for making a profile.

3.2.3 Provide different fields of interest

1. The system allows users to choose different tags associated with their fields of interests like Academics, Clubs, Sports, Inter-IITs, Hall etc.
2. Users can see the questions asked by other users in the tags chosen by him.
3. Users can tag a particular field while posting a Query so that the other users interested in that field can answer him.

3.2.4 Brief Questions categorization

1. The system will categorize questions under different categories i.e the tags described above.
2. Users can search previously asked questions under these tags as well.

3.2.5 Home page to show previously asked Questions

1. When the user logs into the website, a home page containing popular questions will be displayed.
2. Questions will be displayed according to the number of likes and replies.
3. More popular questions will be displayed first.

3.2.6 Provide Search Facility

1. System will provide a facility to search for the previously asked question.
2. We can also search the user by their username.

3.2.7 Provide facility to post a Question

1. The system allows users to post a new question.
2. Users can put tag(s) of particular field(s) while posting the questions.

3.2.8 Facilitates users to follow other users

1. System allows users to follow other users.
2. A follower can easily see posts from all the users he has been following.
3. This will have a different tab, where these posts will pop up automatically.

3.2.9 Users can comment on the questions asked

1. System allows every user to put up his comments on the questions asked.
2. Any user (viewer) can put their comments on the replies also.
3. Users can put likes in the replies so that system can display that reply at top.

3.2.10 Provide facility to answer the Questions asked

1. System allows every user to answer any question posted on the system.
2. Users can add a new answer if another user has answered that question already.

3.2.11 Users can delete their posts

1. The system allows users to delete their questions any time.
2. The system allows users to delete their replies to any questions.

3.2.12 Provide a personalised profile

1. The system provides users with a personalized profile which can be updated anytime.
2. Users can see the data like his followers, his answers and viewers.

3.2.13 Provide facility to Report an Answer or a Question

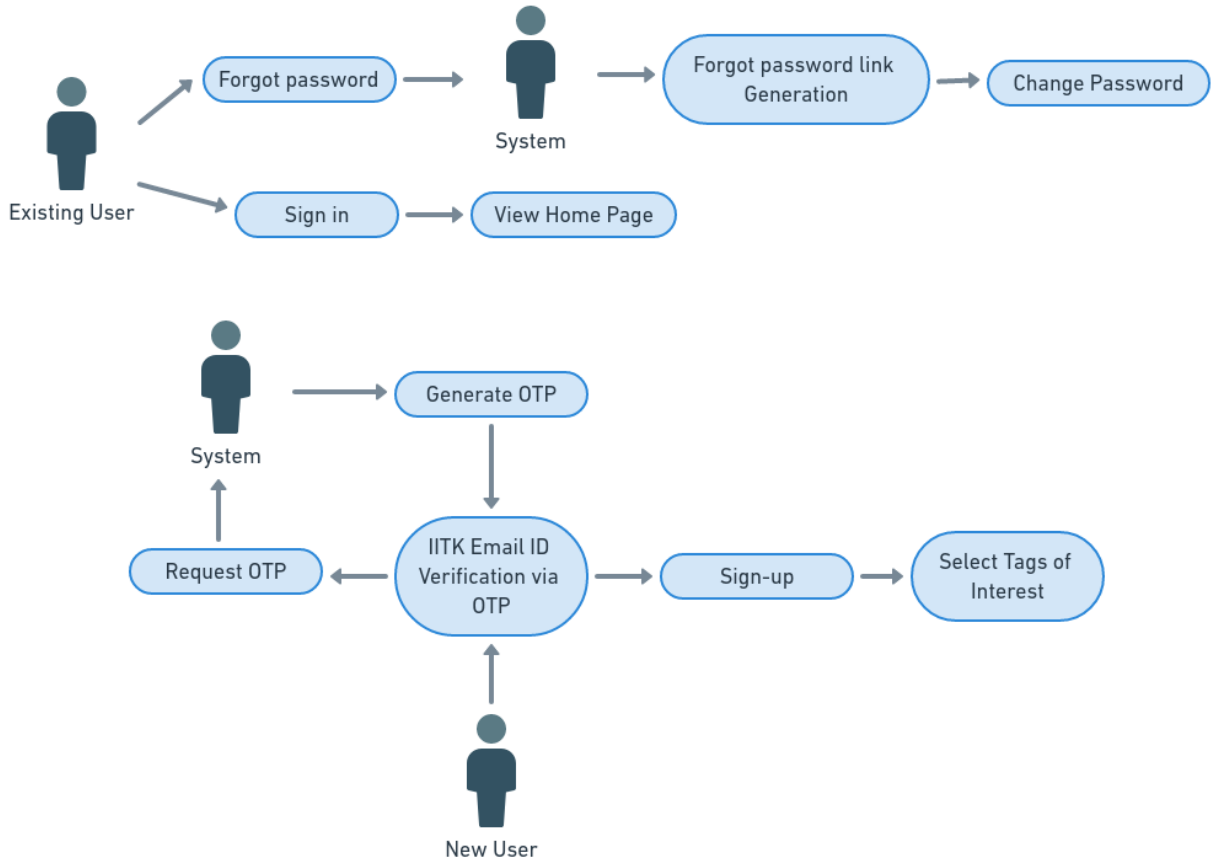
1. The system allows users to report any post if it seems inappropriate.
2. Users can write a brief description while reporting any post.
3. Post can be any Answer or Question.

3.2.14 Provide customer support

1. The system allows users to put any query related to the system usage in the support section.
2. Users can also see previously asked queries and their replies.

3.3 Use Case Model

3.3.1 Use Case #1 (UC-1 Authentication)



Authors – Adi Pratap Singh, Harsh Trivedi, L Gokulnath

Purpose - To authenticate valid users.

Requirements Traceability – Sign up interface, Login interface, Reset password interface, DB.

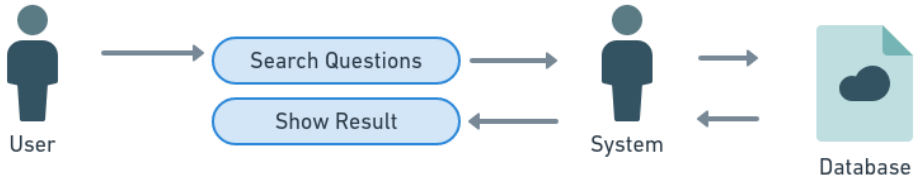
Priority - High

Preconditions - Must have an IITK Email ID.

Post conditions - The user is logged in and able to interact with the system.

Actors – Human, system

3.3.2 Use Case #2 (UC-2 Search)



Authors – Aakash Trivedi, Gavish Garg

Purpose - To enable the user search through previously asked questions, user list, and tags of interest

Requirements Traceability – Database, Search interface

Priority - Medium

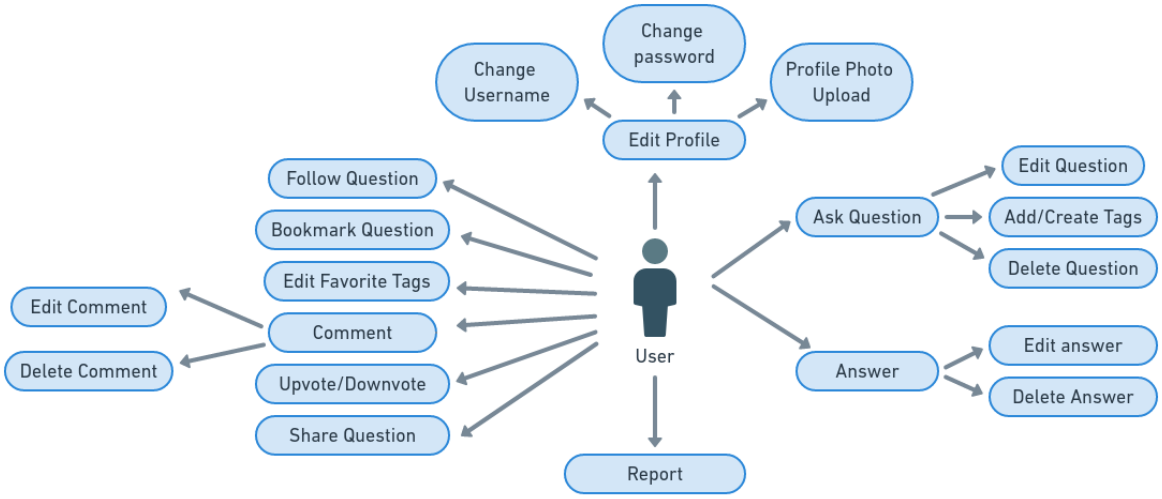
Preconditions - The length of the search string must be less than 30 characters.

Post conditions - Ideally, the user should get all related questions/tags or user present in DB.

Actors – Human, System

Includes UC-1

3.3.3 Use Case #3 (UC-3 Forum)



Authors – Parth Maniar, Rishav Bikarwar, Ujwal Jyot Panda

Purpose - To provide an interface to the user where he can ask the question and comment or answer any other question.

Requirements Traceability – Main page, Question Answer Interface, report, user profile, user list, Question list, DB.

Priority - High

Preconditions - Users must be authenticated.

Post conditions - User has access to the forum.

Actors – Human, Database, System

Exceptions -

Includes UC-1, UC-2

3.3.4 Use Case #4 (UC-4 Administrator)

Author – Bhavya Garg, Sahil Bansal

Purpose - To ensure that social policy is adhered to by all users.

Requirements Traceability – Privileged access to DB, by giving him the edit access.

Priority - High

Preconditions - Admins must be authenticated and identified by other admins.

Post conditions - Admin will get all the administrative powers.

Actors – Human, DB, System.

Includes UC-1

Notes/Issues - The administrator may edit some relevant questions in an unwanted way.

4 Other Non-functional Requirements

4.1 Performance Requirements

- The software should be able to allow at least 2500 concurrent users. Since it is a platform for asking questions, maximum number of students of IITK should be able to use it at once so at least it should support half of the total strength at single time.
- Also, the time to load each page should not be more than 5 seconds.

4.2 Safety and Security Requirements

- The software authenticates the user by asking for the id and password which is saved in the database. And for the first-time user we use IITK email id for the OTP verification and then users can add their username and password in the databases. Then it is the duty of the user to not share their ID and password. There is also a feature if someone forgot a password to again use email id to make a new password.
- The software shall keep the backup of the file so that in case of any data loss we can copy the data from backup.

4.3 Software Quality Attributes

4.3.1 Usability

a. Our interface is user friendly and to ensure that we also have a help page in which we will keep commonly asked doubt regarding the UI and also we will provide customer support through email.
b. We plan to monitor the content posted by the community so that the social policies are adhered to.

4.3.2 Maintainability

a. We are planning to do the coding part by pair programming in which after writing some code instead of checking ourselves we can ask our partner to check and vice-versa so that at the end we would have less chances of bugs.
b. Also we will try to comment on each and every part of the code so that it is clear for the other state holder what is the use of the particular function or object.

4.3.3 Portability

a. Being a web-based app, the software is easily accessible from any device with browser support.
b. We are providing multiple device login in our software. This will increase portability.

4.3.4 Availability

a. We will deploy the software on the device provided by the Computer Center. Since Computer Center works 24/7, we expect our software to give full time availability in normal case scenarios.

Appendix A – Data Dictionary

Table for users' information

Field name	Data type	Field size for display	Description	Example
Username	String	20	unique username for the user	abc123
Name	String	30	Name of the user	Rahul Jain
Email	Email	40	IITK email id of the user	rahul@iitk.ac.in
password	hex	32	Password for login	00112233-4455-6677-c899-aabbccddeeff

Table for question information

Field name	Data type	Field size for display	Description	Example
Question ID	ID	32	Unique id for each question	00112233-4455-6677-c899-aabbccddeeff
Question title	String	150 characters	Brief title for question	How to set up IIT Kanpur VPN?
Question text	String	400 characters	Question description	I tried this . . . .
Likes	Number	32	No of likes received by the question	23
Dislikes	Number	32	No of dislikes received by the question	21
Comments	List	--	Comments on the questions.	Vague question. Please clarify.
Report	Number	32	Number of users who have reported the question	2

Questioner	Id	32	Unique id of person who has asked the question	00112233-4455-6677-c899-aabbccddeeff
Timestamp	Time	32	Date, time of when the question was asked	31/12/2021, 23:59:59
Tags	List	30 x 10	List of tags associated with the question	[‘CP’, ‘Antaragni’, ‘Techkriti’, ‘Machine Learning’, ‘Academics’]
No of views	Number	32	Number of views for the question	321

Table for answers

Field name	**Data type**	**Field size for display**	**Description**	**Example**
Answer id	ID	32	Unique id for the answer	00112233-4455-6677-c899-aabbccddeeff
Answer text	String	400	Describe the answer	
Question id	ID	32	The question to which the answer has been given	00112233-4455-6677-c899-aabbccddeeff
Likes	Number	32	No of likes received by the question	23
Dislikes	Number	32	No of dislikes received by the question	21
Comments	List	--	Comments on the questions.	Vague question. Please clarify.
Report	Number	32	Number of users who have reported the question	2

Table for comments

Field name	Data type	Field size	Description	Example
Comment id	ID	32	Unique id for the comment	00112233-4455-6677-c899-aabbccddeeff
Likes	Number	32	Number of likes on the comment	23
Dislikes	Number	32	Number of dislikes on the comment	23
Comment text	String	400	Text having the content of comment	Great question

Table for tags

Field name	Data type	Field size	Description	Example
Tag ID	ID	32	Unique id for the comment	00112233-4455-6677-c899-aabbccddeeff
Tag name	string	32	Name of the tag	Linux
question id list	list	–	List of the question is having these tag in them	[00112233-4455-6677-c899-aabbccddeeff ,00112233-4455-6677-c899-aabbccddeeffjd….]

Appendix B - Group Log

MEET DATE	TOPIC DISCUSSED	DURATION
5 January 2022	We discussed the topic that we can choose and about the things that we have to learn in the process.	90 minutes
11 January 2022	We finalized 2 topics and then discussed pros and cons of both, and made our final project choices.	120 minutes
14 January 2022	We started working on the features of the project and everyone gave their ideas.	120 minutes
14 January 2022	We had a meeting with the professor to ask some doubts.	60 minutes
21 January 2022	We made the UI of our product roughly so that it is easy to see what we have to make and what are the features.	120 minutes
23 January 2022	It was our first meeting with our TA so we asked some doubts in SRS and also he gave some valuable tips.	90 minutes
25 January 2022	We divided the team for different parts of the SRS and have several meetings within groups	90 minutes
26 January 2022	Meet to combine the work of different persons and cleared each other doubts	180 minutes
27 January 2022	Meet with TA to clear the doubts in SRS.	30 minutes
30 January 2022	Final meet before SRS submission	60 minutes