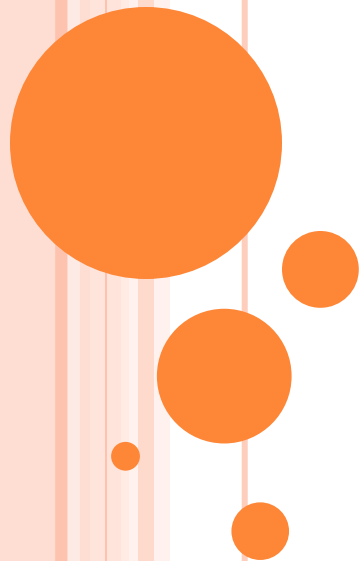


DO-CONNECT

CAPSTONE PROJECT GROUP-C17G4

**Mentor:
M. Nuthan Preeth**



CAPSTONE PROJECT

C17G4

Group Members:

1. Aakash Verma
2. Shaik Mubina



PROBLEM STATEMENT

- Building a secured end to end question and answer web application, where various and n number of technical questions can be asked and answered, only when registered.
- Here this web application could be accessed by two roles:
 - 1. User
 - 2. Admin



- Admin has all the privilege's of **Creating, Retrieving and also deleting** the questions and answers of the users.
- Admin has the some other additional rights and privilege's of approving questions and answers, and also deleting the users.
- An Email is to be sent to Admin whenever a Question is asked or a Question is answered for getting approval from admin



ABSTRACT

- The main objective of the **doConnect** project is to provide answers for the user questions in all possible ways that a user wishes to have through a web application. Taking stress and thinking with their own capabilities may take long time, which leads to mental stress and irritation, with the help of this doConnect project one can post their questions, and registered users on the web application can post their own answer for the respective questions, which helps in reducing the time to solve the queries.



TECHNOLOGIES

- Angular
- Java SpringBoot
- ❖ **Languages:**
 - Type Script
 - Java
 - MySql
- ❖ **IDE:**
 - Spring Tool Suite
 - VS Code



MySQL

MySQL is an open-source relational database management system (RDBMS). A relational database organizes data into one or more data tables in which data may be related to each other; these relations help structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups.



SPRING BOOT

The Spring Framework is an application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. Although the framework does not impose any specific programming model, it has become popular in the Java community as an addition to the Enterprise JavaBeans (EJB) model. The Spring Framework is open source.

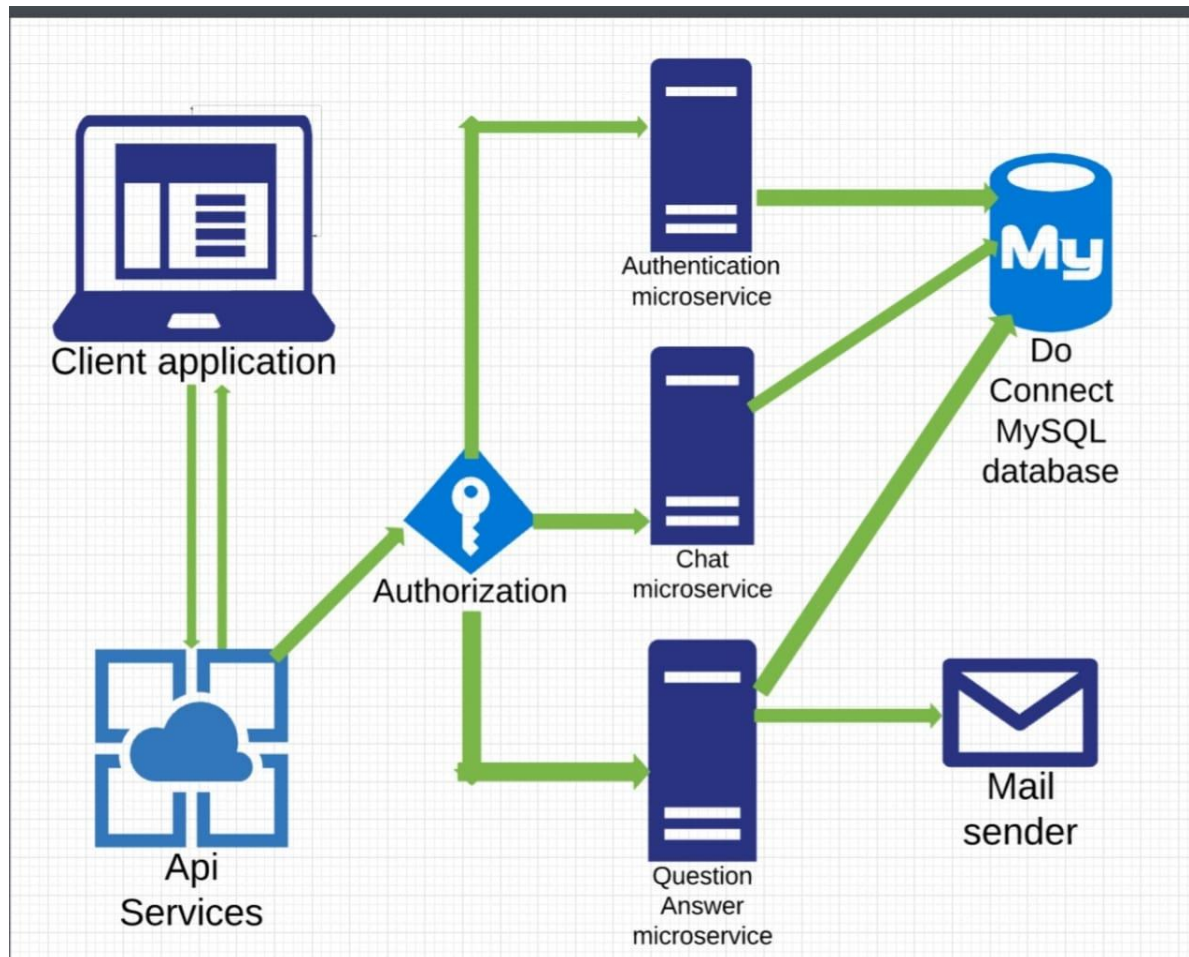


ANGULAR

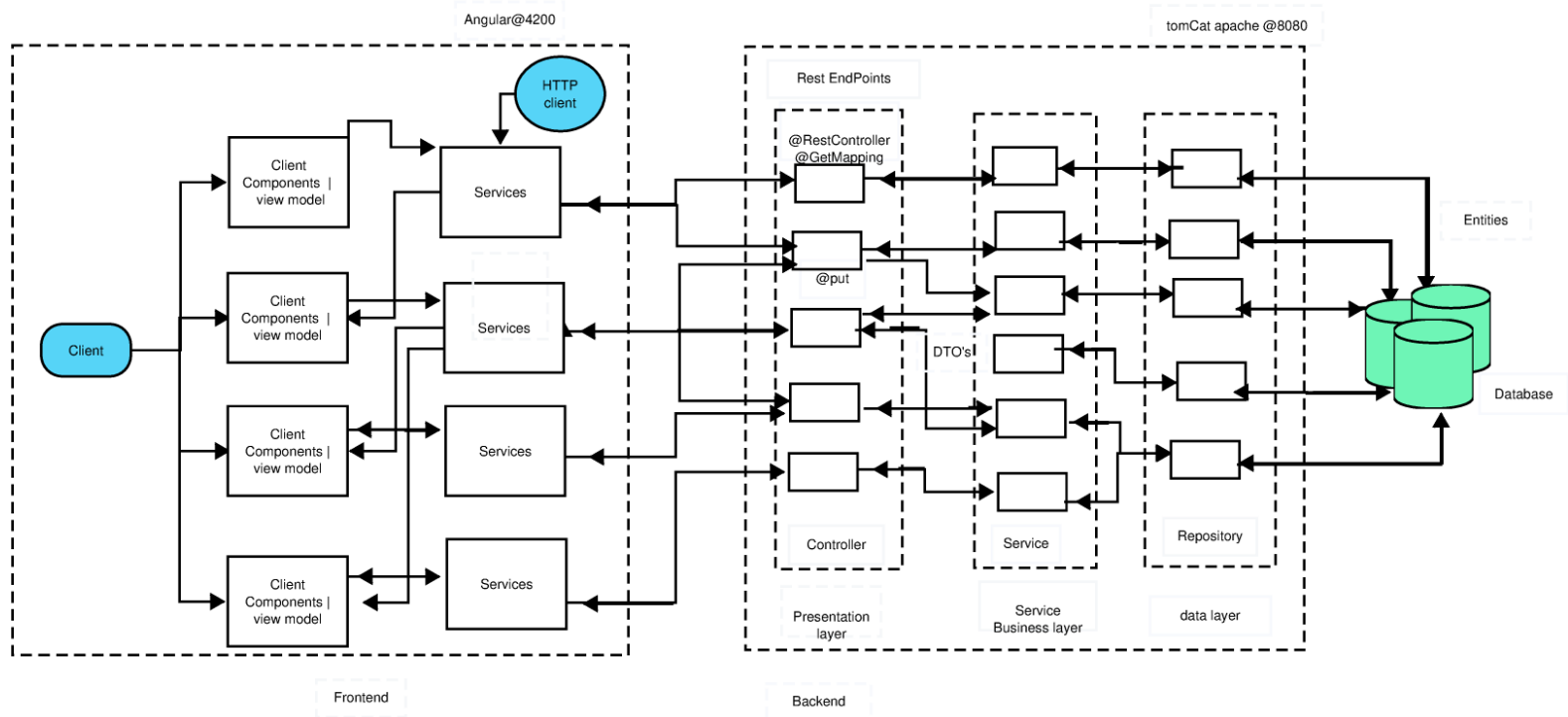
- Angular is a platform or a framework that is used to build the client-based applications in HTML and TypeScript. It is written in TypeScript. It implements core and optional functionalities as a set of TypeScript libraries that are imported into the applications.



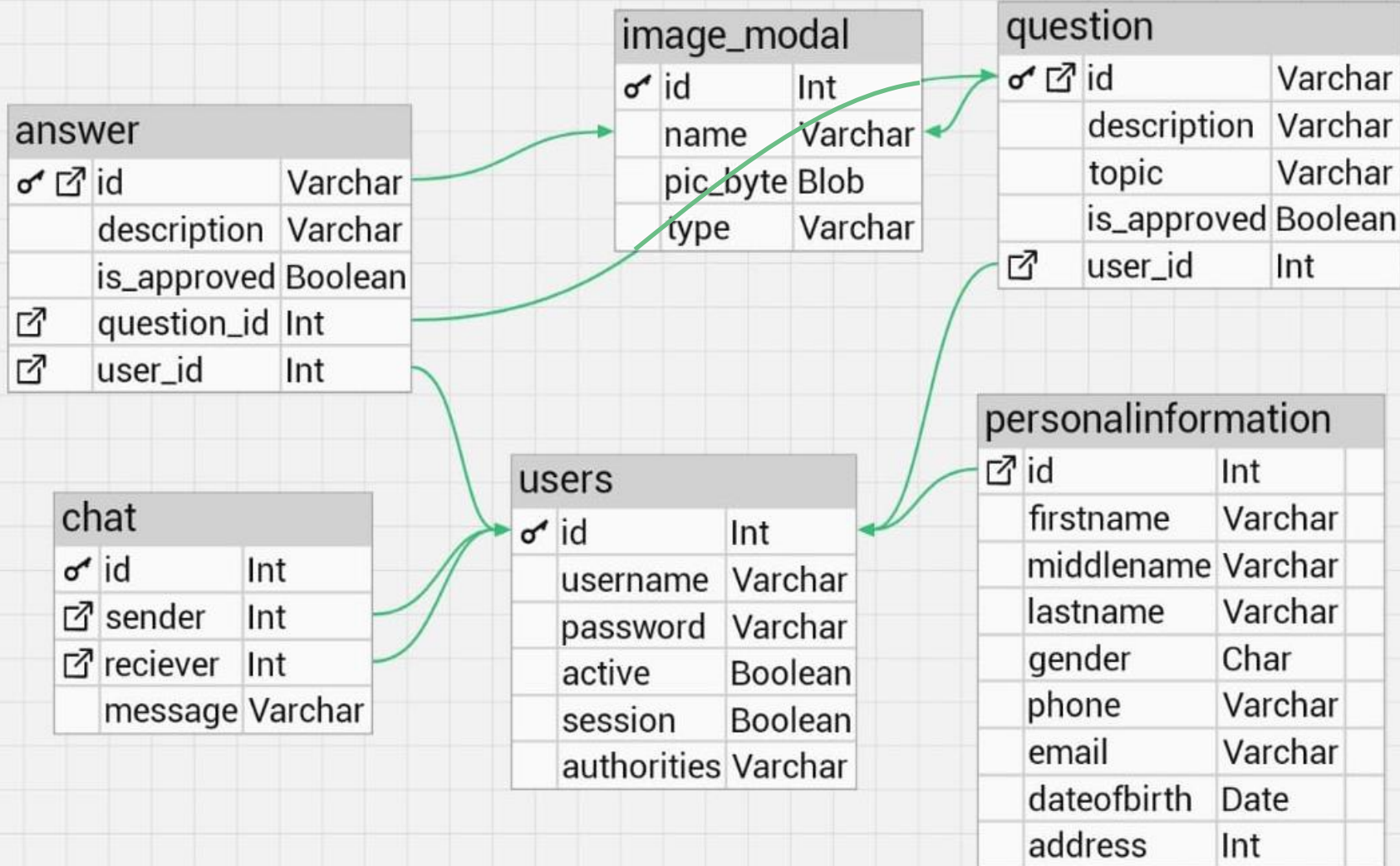
APPLICATION ARCHITECTURE



PROJECT WORK FLOW

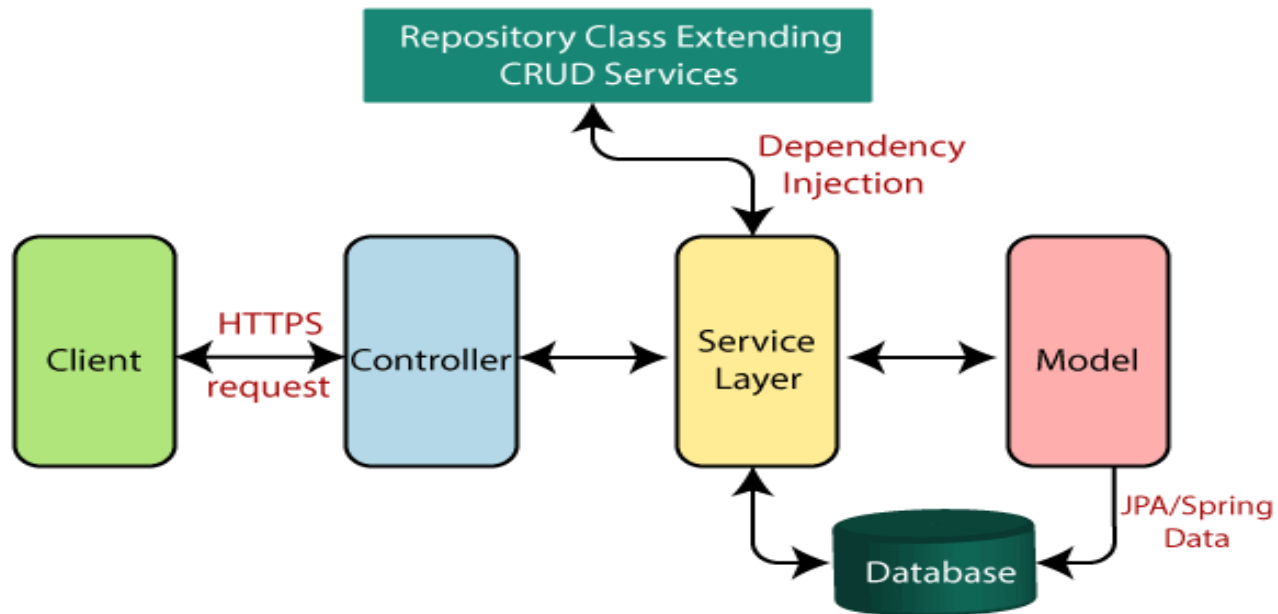


MySQL DATABASE ARCHITECTURE



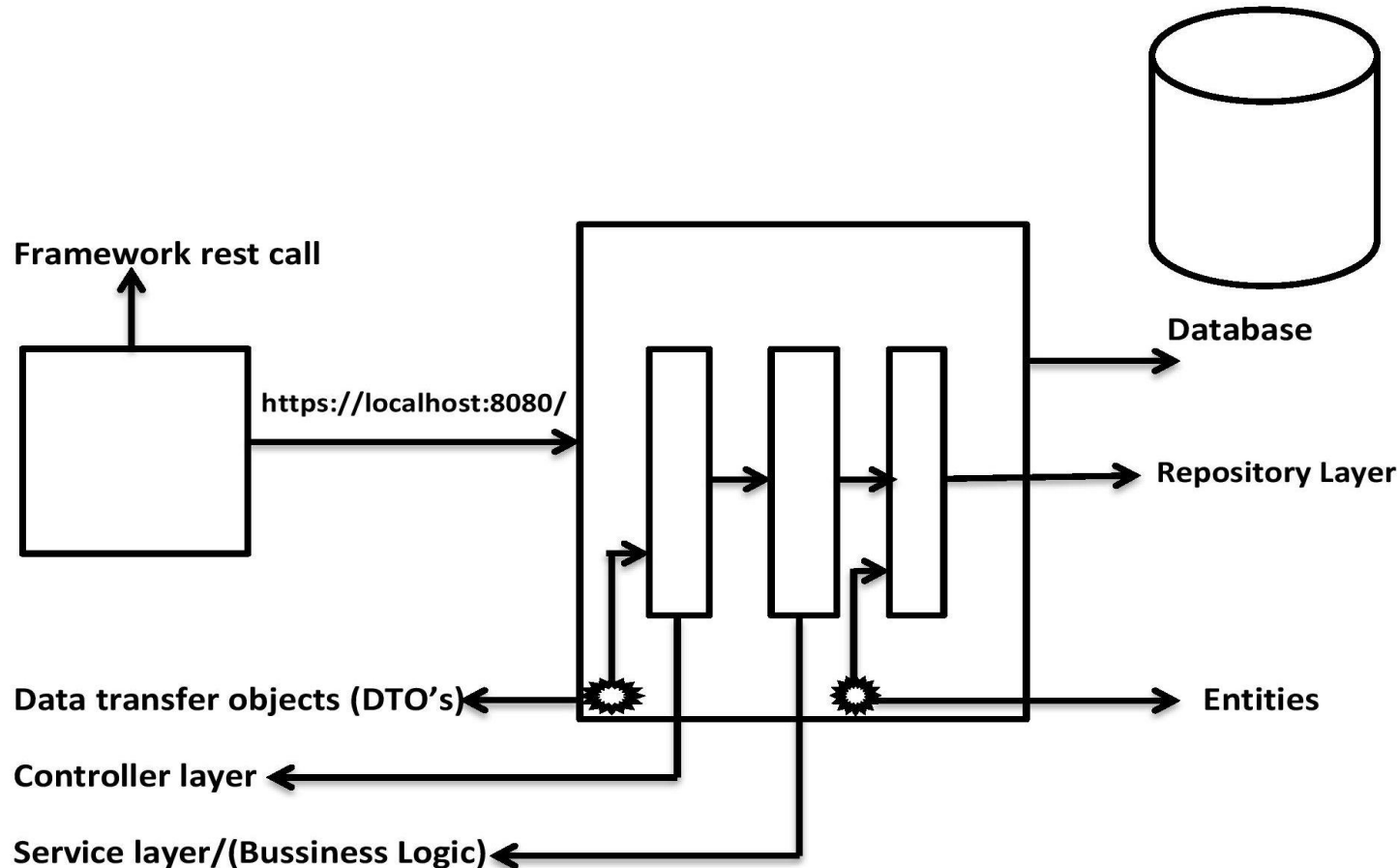
SPRINGBOOT ARCHITECTURE

Spring Boot flow architecture

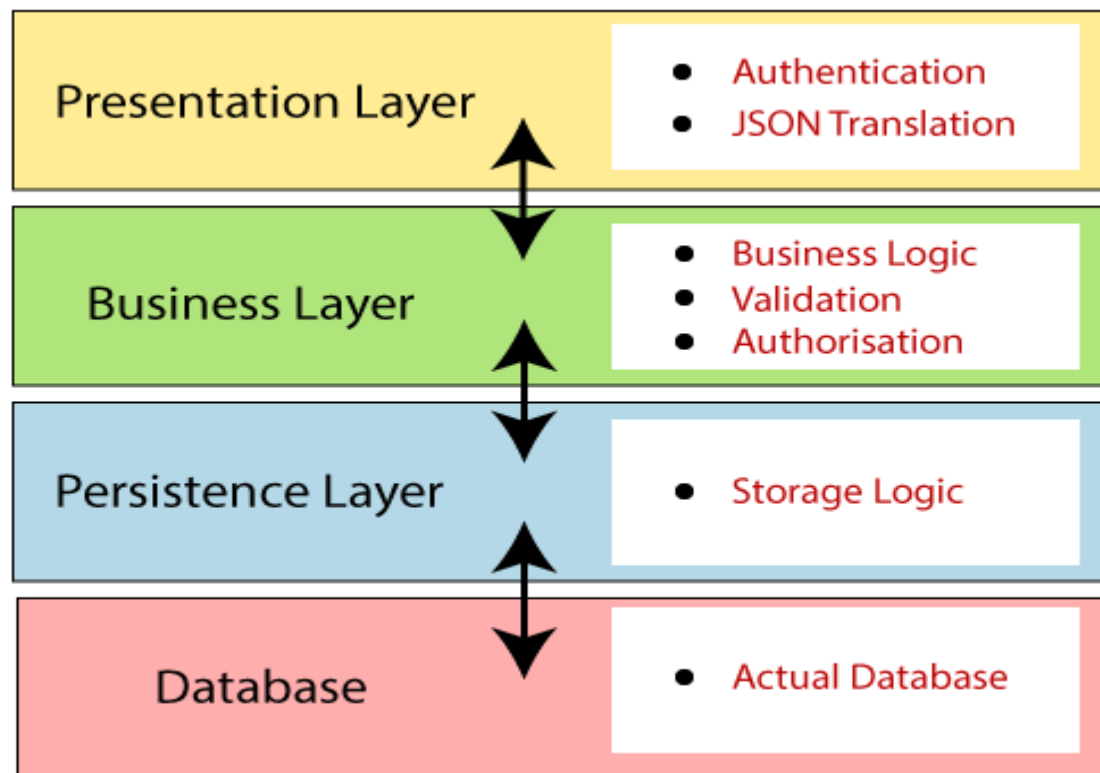


BACKEND WORK-FLOW

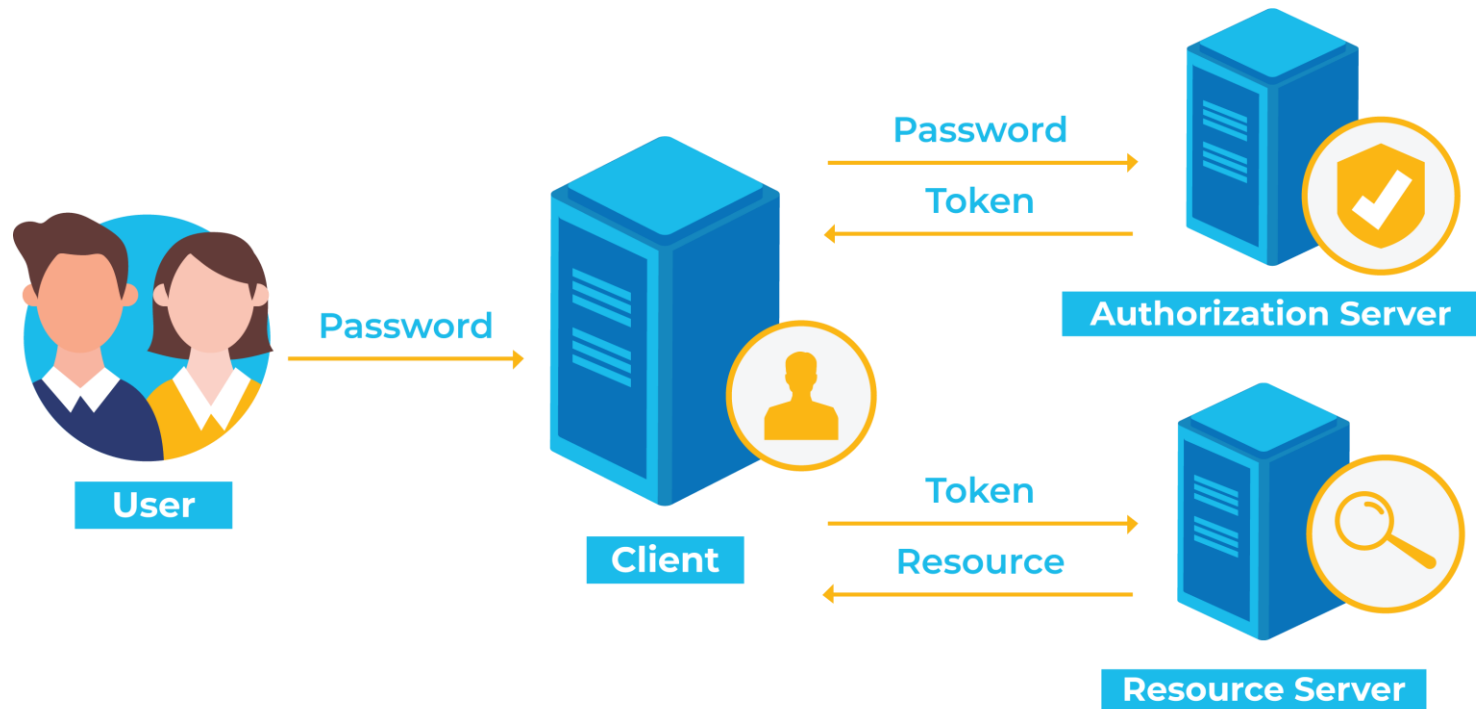
APPLICATION WORKFLOW (BACKEND)



SpringBoot architecture contains 4 layers. They are:



TOKEN BASED AUTHENTICATION(JWT)



JSON WEB TOKEN

Encoded PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJha2FzaC  
IsImV4cCI6MTY1ODk1MDc0NSwiaWF0IjoxNjU4  
TE0NzQ1fQ.EfoJgYeRFZeEyl8DgzCpnBbjWkGu-  
RSTGvrQKYKV2t8
```

Decoded EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
{  
  "alg": "HS256"  
}
```

PAYLOAD: DATA

```
{  
  "sub": "akash",  
  "exp": 1658950745,  
  "iat": 1658914745  
}
```

VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload),  
    
) ☐ secret base64 encoded
```



IMPLEMENTATION OF JWT

WhatsApp x | json web token - Google Search x | Swagger UI x +

localhost:9191/swagger-ui/index.html#/login-signup/userssigninUsingPOST

Code Details

200

Response body

```
{
  "message": "admin Successfully Logged In"
}
```

Download

Response headers

```
access-control-allow-credentials: true
access-control-allow-headers: Content-TypeAcceptX-Requested-Withremember-me
access-control-allow-methods: GET,POST,PATCH,DELETE,PUT,OPTIONS
access-control-allow-origin: http://localhost:9191
access-control-expose-headers: Content-DispositionAuthorizationAuthorization
access-control-max-age: 3600
authorization: Bearer eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJha2FzaCI6ImV4cCI6MTY1OTgyNTk5NCwiaWF0IjoxNjU5Nzg5OTk0fQ.yg1YYkdEnqdj63hb0HnmFvFTH_KyoryAZzKILRzGkoA
cache-control: no-cacheno-storemax-age=0must-revalidate
connection: keep-alive
content-type: application/json
date: Sat06 Aug 2022 12:46:34 GMT
expires: 0
keep-alive: timeout=60
pragma: no-cache
transfer-encoding: chunked
vary: OriginAccess-Control-Request-MethodAccess-Control-Request-Headers
x-content-type-options: nosniff
x-frame-options: DENY
x-xss-protection: 1; mode=block
```

Responses

Code	Description
------	-------------

WhatsApp Image...jpeg ^ | WhatsApp Image...jpeg ^ | DO-CONNECT (2).pptx ^

Show all x

Windows taskbar: 34°C Light rain, 18:16, 06-08-2022

AUTHENTICATION SERVICE

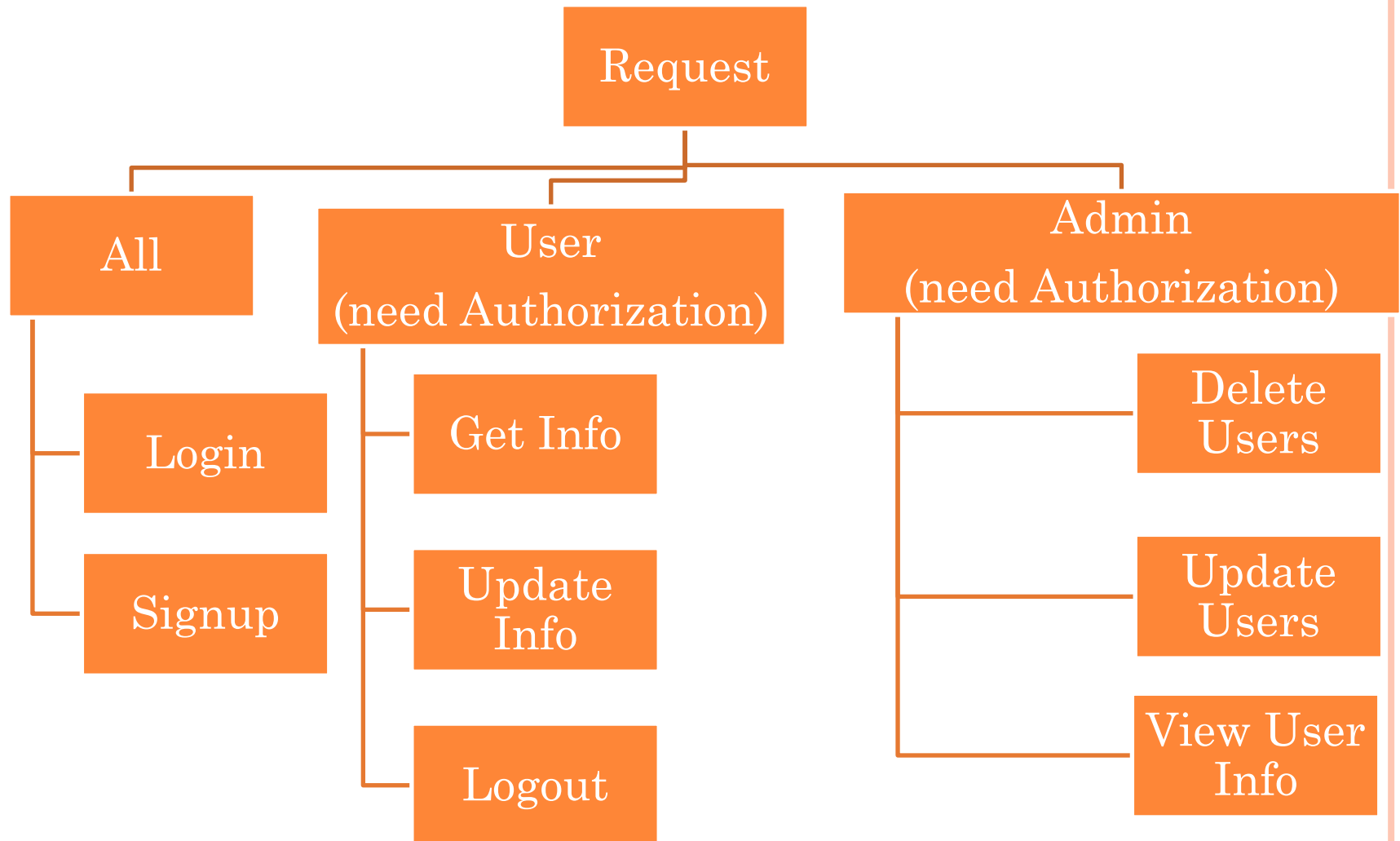
- The Authentication service has following features :
 - ❖ Login - returns JWT as return to login request
 - ❖ Signup - used for registering new user
 - ❖ Logout – used for logging out user.
 - ❖ Update User Info – used to update info of existing user.

Admin Control

- ❖ Delete – Admin can delete any user
- ❖ Update User Info – Admin can update any user info



AUTHENTICATION SERVICE ARCHITECTURE



QUESTION ANSWER SERVICE

- The Question Answer service has following features :

All Access

- ❖ Get Question – this service provide question by description or topic.

User Access

- ❖ Get Answer – this service provide answer by questionId.
- ❖ Ask Question – this service is used to add new question to question table.
- ❖ Give Answer – this service is used to add answer to for a question to answer table.

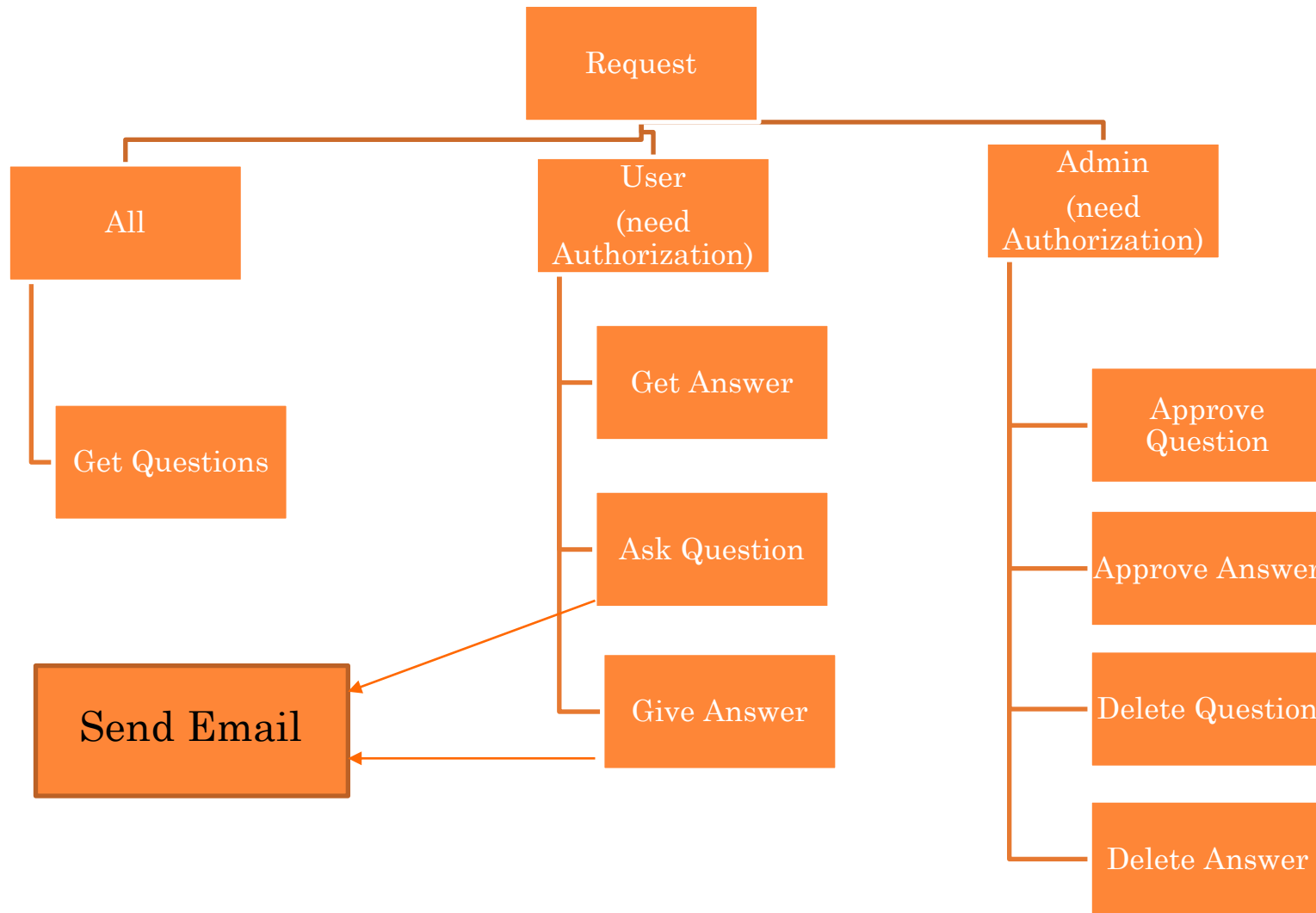


Admin Access

- ❖ Approve Answer – this service is used to approve a answer.
- ❖ Approve Question – this service is used to approve question.
- ❖ Delete Answer – this service is used to delete question.
- ❖ Delete Question – this service is used to delete question.



QUESTION ANSWER SERVICE ARCHITECTURE

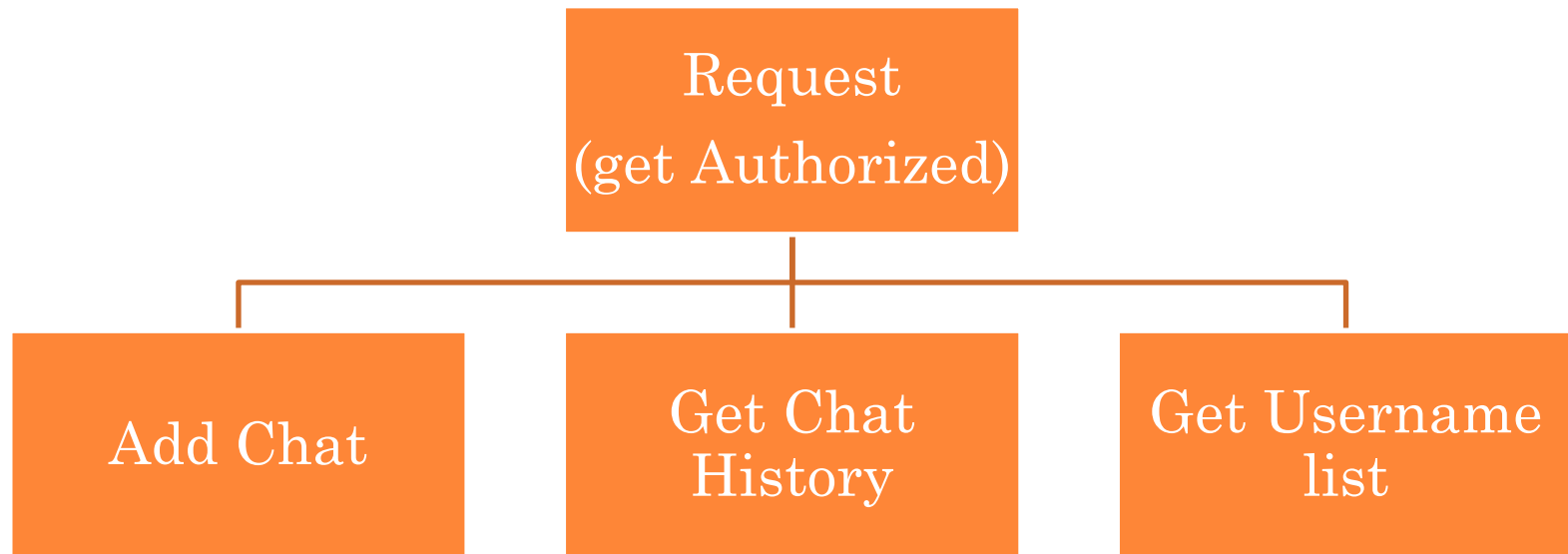


CHAT SERVICE

- The Chat service has following features :
 - ❖ Send Message – this adds a message to chat table in database.
 - ❖ Get Message – This provide chat history between two users.
 - ❖ Get Usernames – It provide list of usernames to which user can chat with.



CHAT SERVICE ARCHITECTURE



SWAGGER

- Swagger is a powerful yet easy-to-use suite of API developer tools for teams and individuals, enabling development across the entire API lifecycle, from design and documentation, to test and deployment.
- Swagger consists of a mix of open source, free and commercially available tools that allow anyone, from technical engineers to street smart product managers to build amazing APIs that everyone loves.

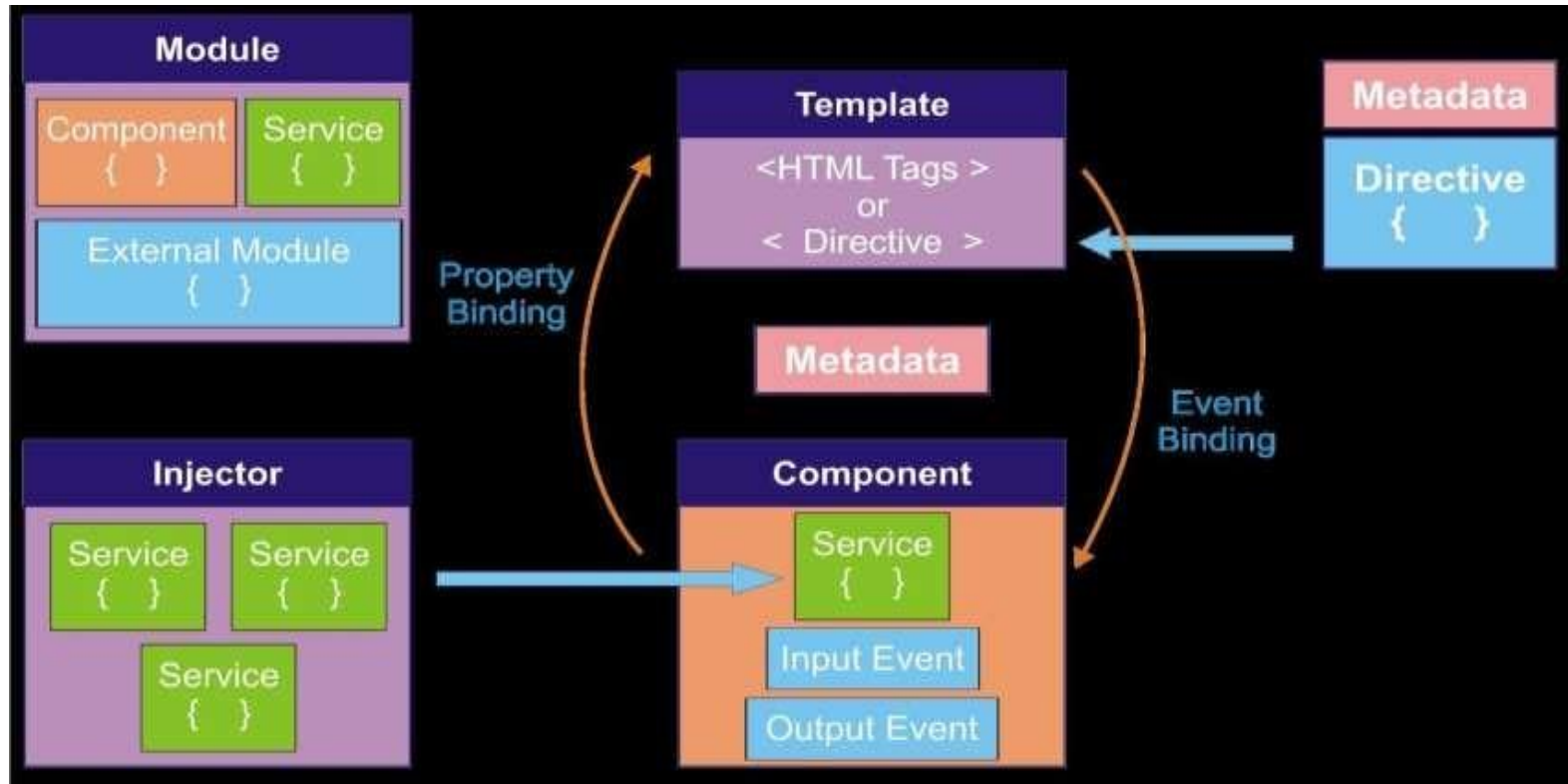


API DOCUMENTATION

- We have created API documentation for all three microservices and can be accessed after starting the microservices.
- Use below link after starting services.
 - Authentication Service
<http://localhost:9191/swagger-ui/index.html>
 - Question Answer Service
<http://localhost:9192/swagger-ui/index.html>
 - Chat Service
<http://localhost:9193/swagger-ui/index.html>



ANGULAR ARCHITECTURE



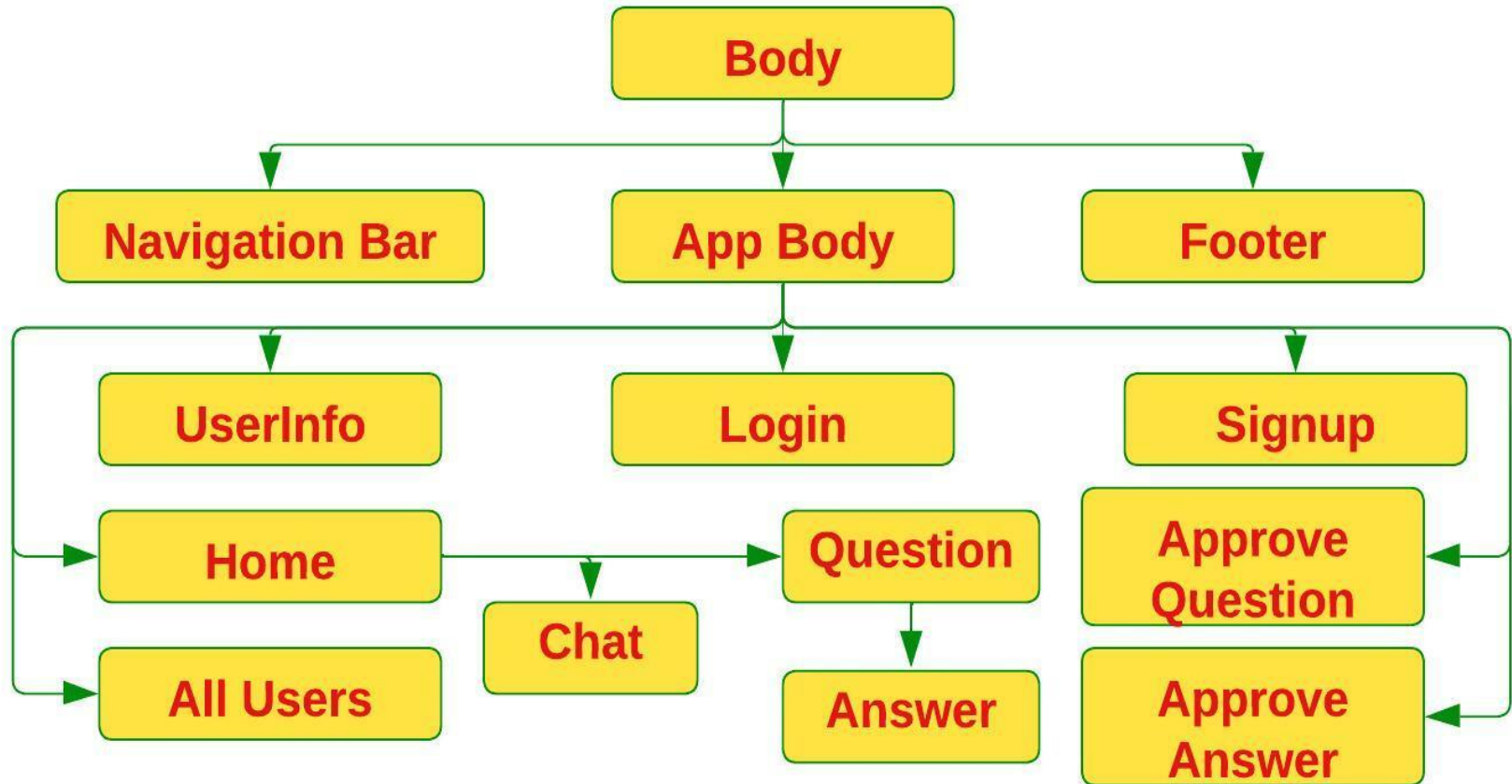
FRONTEND COMPONENTS

- The frontend components are:

- ❖ Home
- ❖ User Info
- ❖ View Question
- ❖ View Answers
- ❖ Ask Question
- ❖ Give Answer
- ❖ All Users
- ❖ Approve Question
- ❖ Approve Answer
- ❖ Chat



COMPONENT STRUCTURE



ANGULAR INJECTORS

- We have used shared services for function which are needed by more then one component.
 - ❖ AuthGuard Service
 - ❖ Make Request Service
 - ❖ Backend Service
 - ❖ Auth Service
 - ❖ Question Answer Service
 - ❖ Chat Service

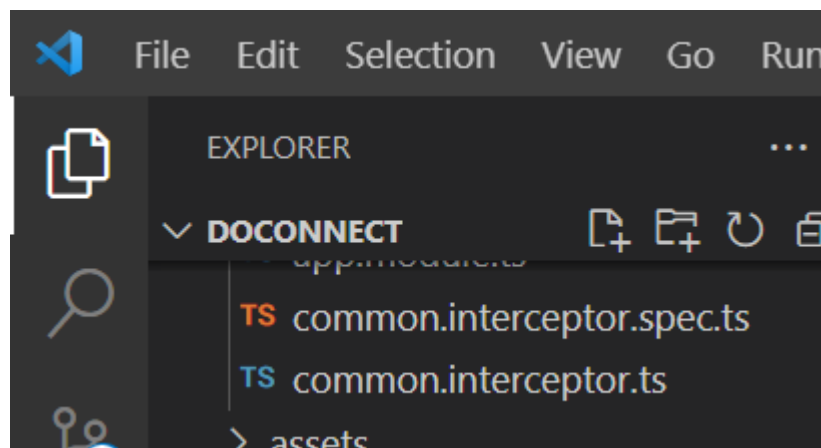
This PC > New Volume (E:) > wipro capston > doConnect > frontend > doConnect > src > app > shared

Name	Date modified	Type	Size
guards	27-07-2022 18:30	File folder	
request	27-07-2022 18:30	File folder	
services	01-08-2022 18:05	File folder	



HTTP INTERCEPTOR

- It is not a good practice to add header for authorization individually for all requests.
- So, To add Authorization Header to every request we use Http Interceptor module it is provide by Angular.
- Http Interceptor can also be used to add common attributes to all the request made by the web Application.



GUIDE TO RUN APPLICATION

1. Initialisation of Database
2. Configuration and Start Backend Services
3. Configuration and Start Frontend Application



1. INITIALIZATION OF DATABASE

- Open MySQL Command Line Client.
- Run below command according to your location.

MySQL 8.0 Command Line Client

Enter password: *****

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 415

Server version: 8.0.28 MySQL Community Server - GPL

Copyright (c) 2000, 2022, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> source E:/wipro capston/doConnect/mysql.doconnectMySQL.sql
```

ERROR:

Failed to open file 'E:\wipro capston\doConnect\mysql.doconnectMySQL.sql', error: 2

```
mysql> source E:/wipro capston/doConnect/mysql/doconnectMySQL.sql
```

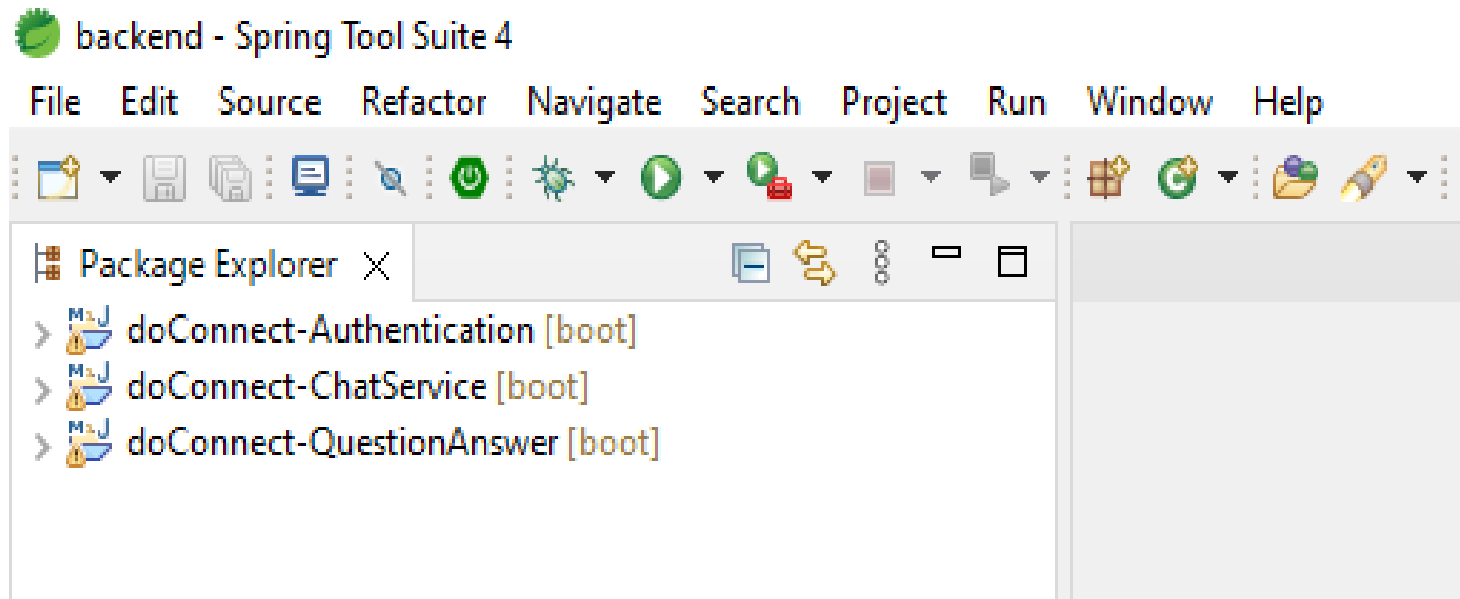


Use the above command for the initialization of the database Use your project folder location

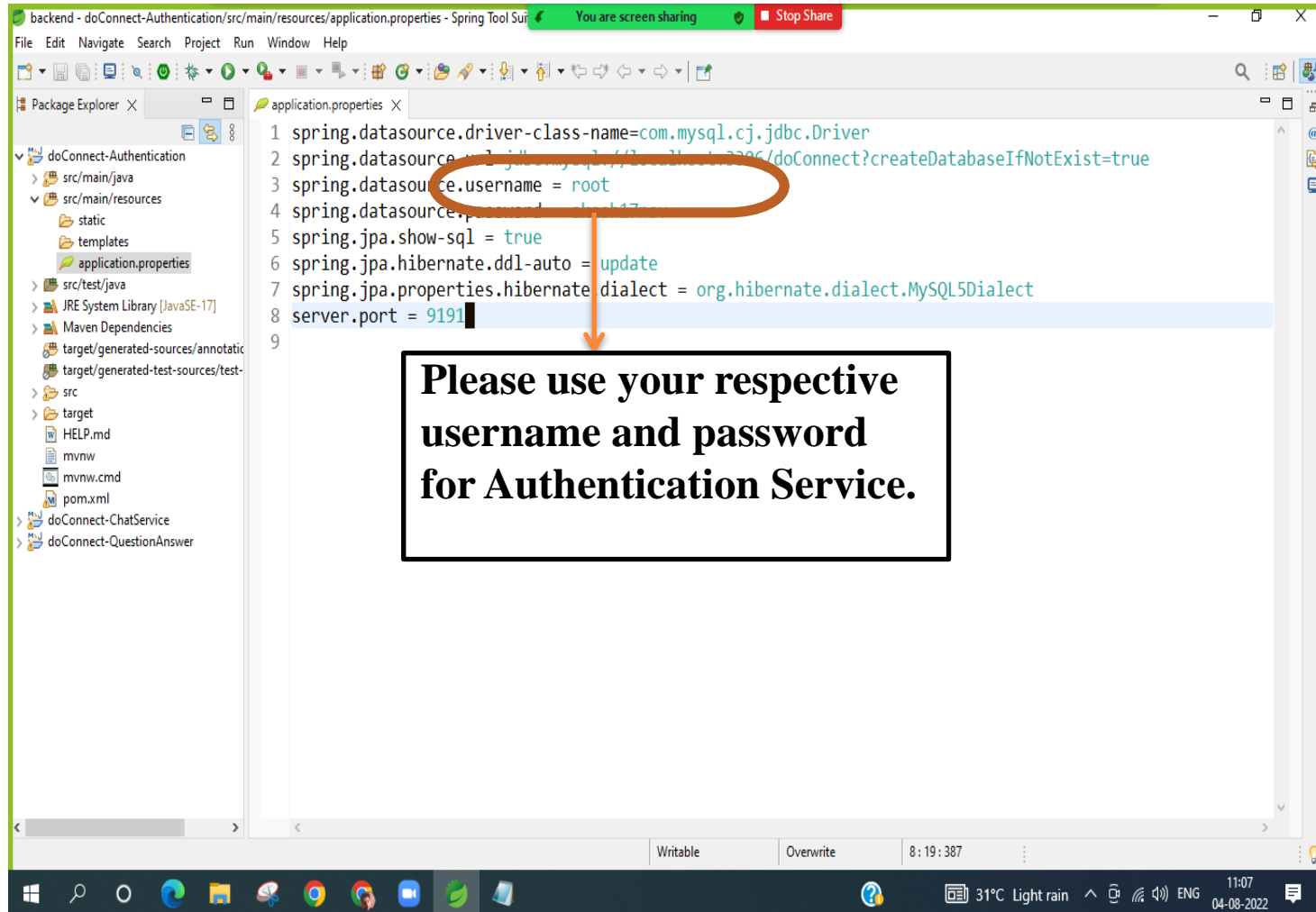


2. CONFIGURATION AND START BACKEND SERVICES

- Open “backend” folder of project in Spring Tool Suite.
- Now You Have to make Some Changes in resource.application file for all three backend services.



CONFIGURATION



The screenshot shows an IDE window titled "backend - doConnect-Authentication/src/main/resources/application.properties - Spring Tool Suite". The "Package Explorer" on the left shows the project structure, with "application.properties" selected under "src/main/resources". The main editor displays the following configuration:

```
1 spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
2 spring.datasource.url=jdbc:mysql://127.0.0.1:3306/doConnect?createDatabaseIfNotExist=true
3 spring.datasource.username = root
4 spring.datasource.password = root123456
5 spring.jpa.show-sql = true
6 spring.jpa.hibernate.ddl-auto = update
7 spring.jpa.properties.hibernate.dialect = org.hibernate.dialect.MySQL5Dialect
8 server.port = 9191
9
```

An orange oval highlights the line `spring.datasource.username = root`, and an orange arrow points from it to a callout box. The callout box contains the text: "Please use your respective username and password for Authentication Service."

At the bottom of the IDE window, the status bar shows "Writable", "Overwrite", "8:19:387", and system information: "31°C Light rain", "ENG", "11:07", and "04-08-2022".

Configure Question Answer Service

The screenshot shows an IDE window with the file `application.properties` open. The file contains the following configuration:

```
2 #setting mysql database properties
3
4 spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
5 spring.datasource.url=jdbc:mysql://localhost:3306/doConnect?
6 spring.datasource.username = root
7 spring.datasource.password = root123456
8 spring.jpa.show-sql = true
9 spring.jpa.hibernate.ddl-auto = update
10 spring.jpa.properties.hibernate.dialect = org.hibernate.dialect.MySQL5Dialect
11 server.port = 9192
12
13
14 # Setting email properties
15
16 spring.mail.host=smtp.gmail.com
17 spring.mail.port=587
18 spring.mail.username=akash967049@gmail.com
19 spring.mail.password=xxxxxxquiknifk
20 spring.mail.properties.mail.smtp.auth = true
21 spring.mail.properties.mail.smtp.starttls.enable = true
22
23
24 # setting properties for image upload
25
26 spring.servlet.multipart.enabled=true
27 spring.servlet.multipart.max-file-size=300MB
28 spring.servlet.multipart.file-size-threshold=1KB
```

Two callouts with arrows point to specific configuration values:

- Callout 1:** Points to `spring.datasource.username = root`. The text says: "Please use your respective username and password."
- Callout 2:** Points to `spring.mail.username=akash967049@gmail.com`. The text says: "Please use your respective mail ID and password."

The IDE interface includes a Package Explorer on the left showing the project structure, a toolbar at the top, and a status bar at the bottom with system information (31°C, Light rain, 11:11, 04-08-2022).

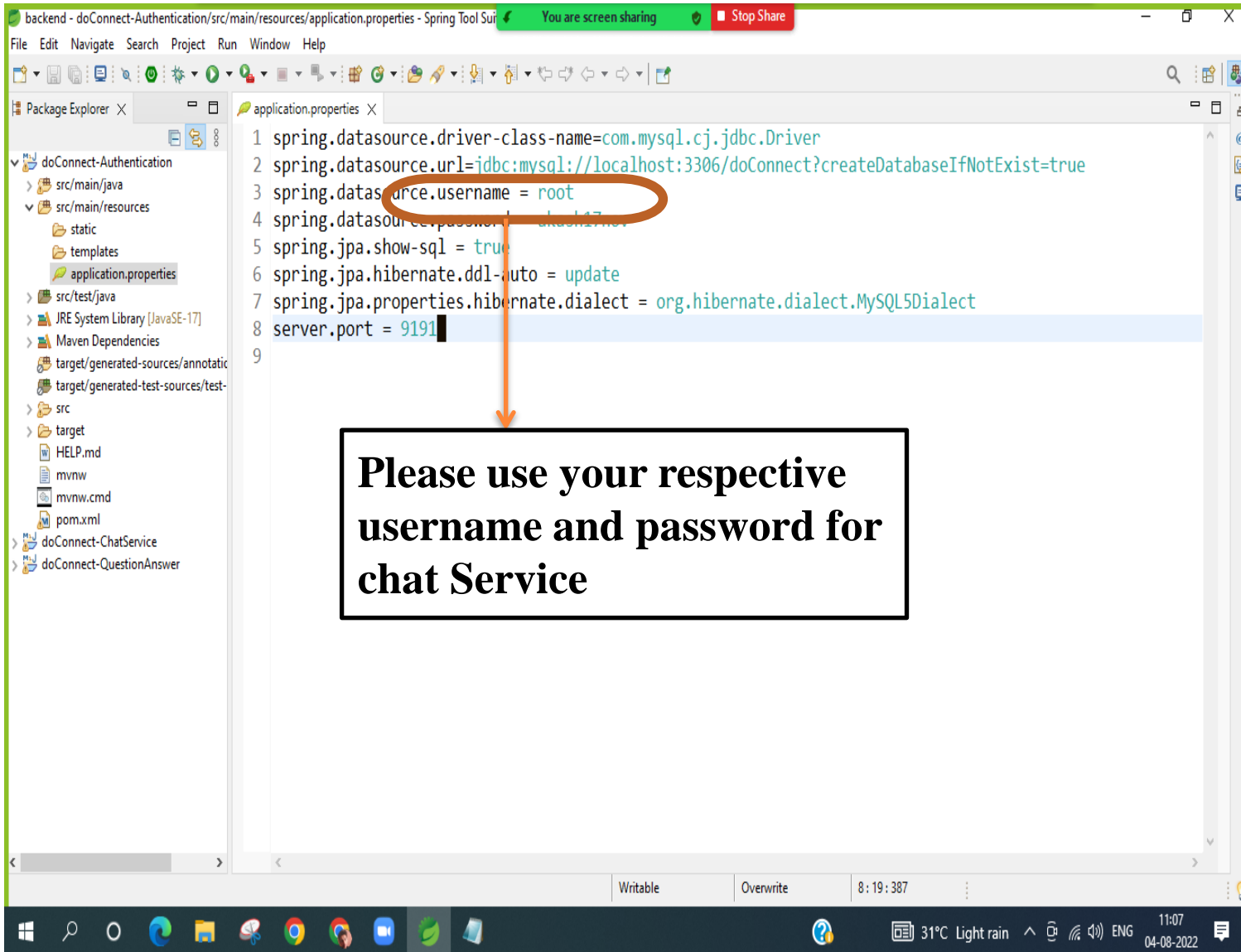
```
1 package com.aakash.org.util;
2
3 /*
4  * @Author - Aakash Verma
5  */
6
7 public class Variables {
8
9     public static final String emailUsername = "akash967049@gmail.com"
10
11 }
12
```

The Gmail account to which you want to send mail on questions asked and answer given by user.

Writable Overwrite 11:2:171

31°C Light rain 11:45 04-08-2022

Configure Chat Service



The screenshot shows the Spring Tool Suite IDE with the following configuration in `application.properties`:

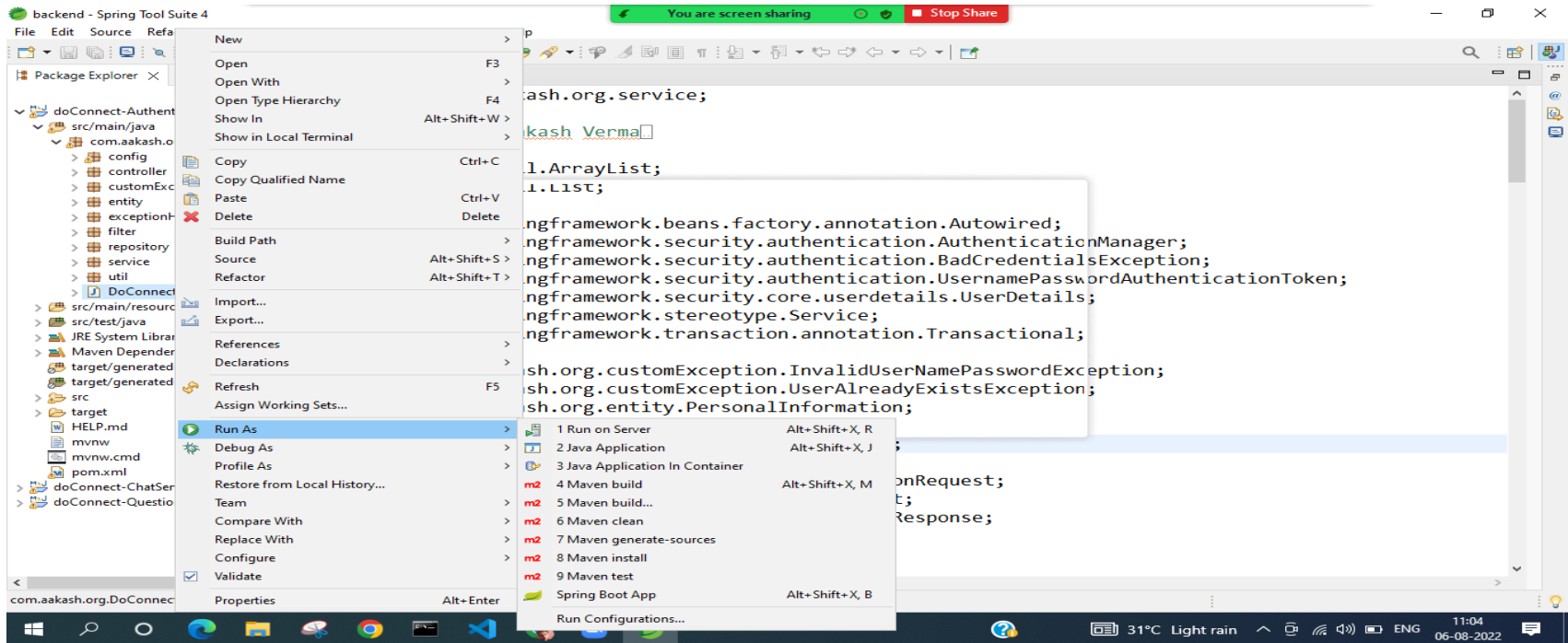
```
1 spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
2 spring.datasource.url=jdbc:mysql://localhost:3306/doConnect?createDatabaseIfNotExist=true
3 spring.datasource.username = root
4 spring.datasource.password = akash127no1
5 spring.jpa.show-sql = true
6 spring.jpa.hibernate.ddl-auto = update
7 spring.jpa.properties.hibernate.dialect = org.hibernate.dialect.MySQL5Dialect
8 server.port = 9191
9
```

An orange circle highlights the value `root` in line 3, and an orange arrow points from it to the following text box:

**Please use your respective
username and password for
chat Service**

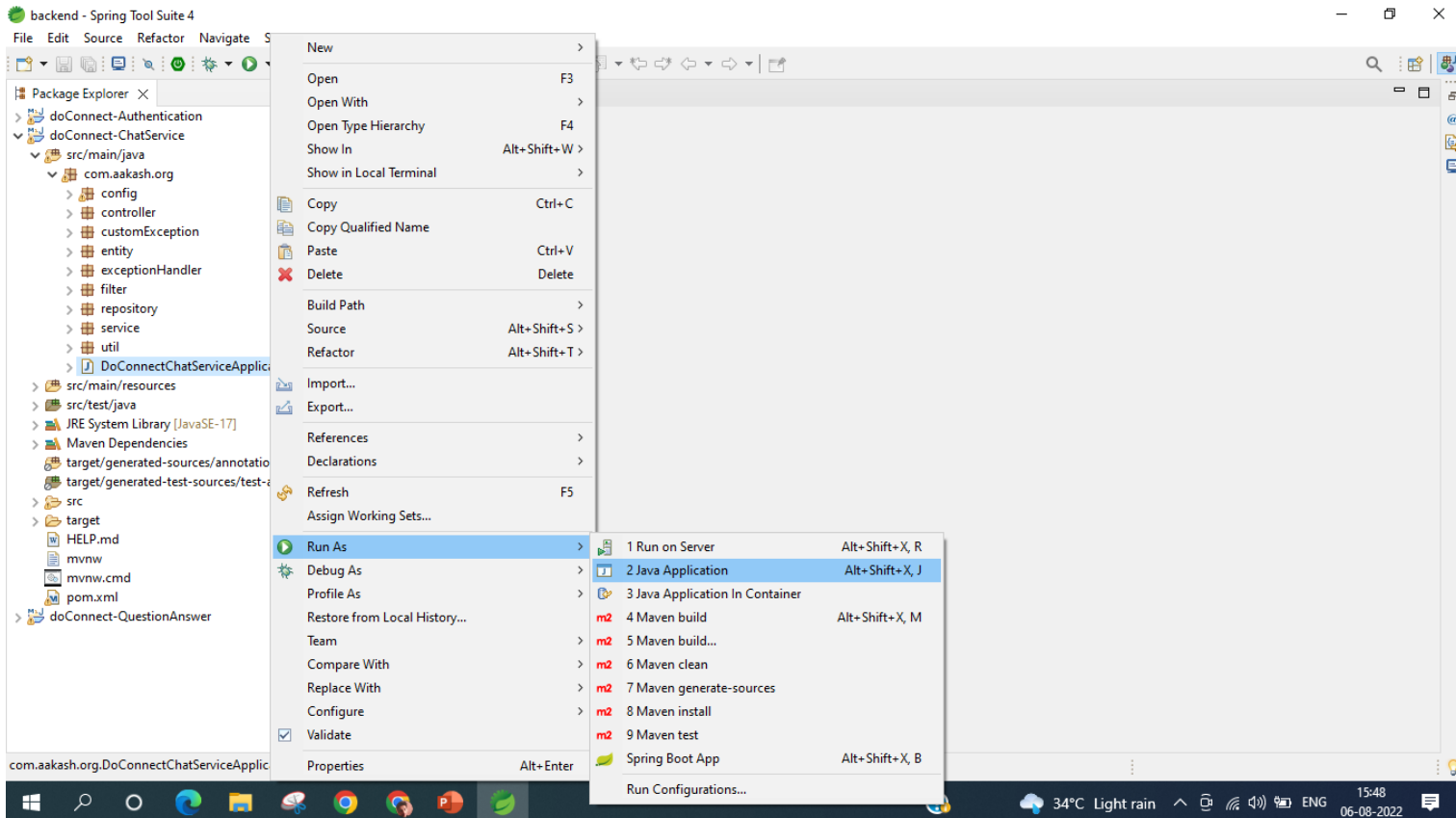
The IDE interface includes a Package Explorer on the left showing the project structure, a top toolbar, and a Windows taskbar at the bottom with system information (31°C, Light rain, 11:07, 04-08-2022).

2.1 RUN AUTHENTICATION SERVICE



Click on “Java Application” to run this service.

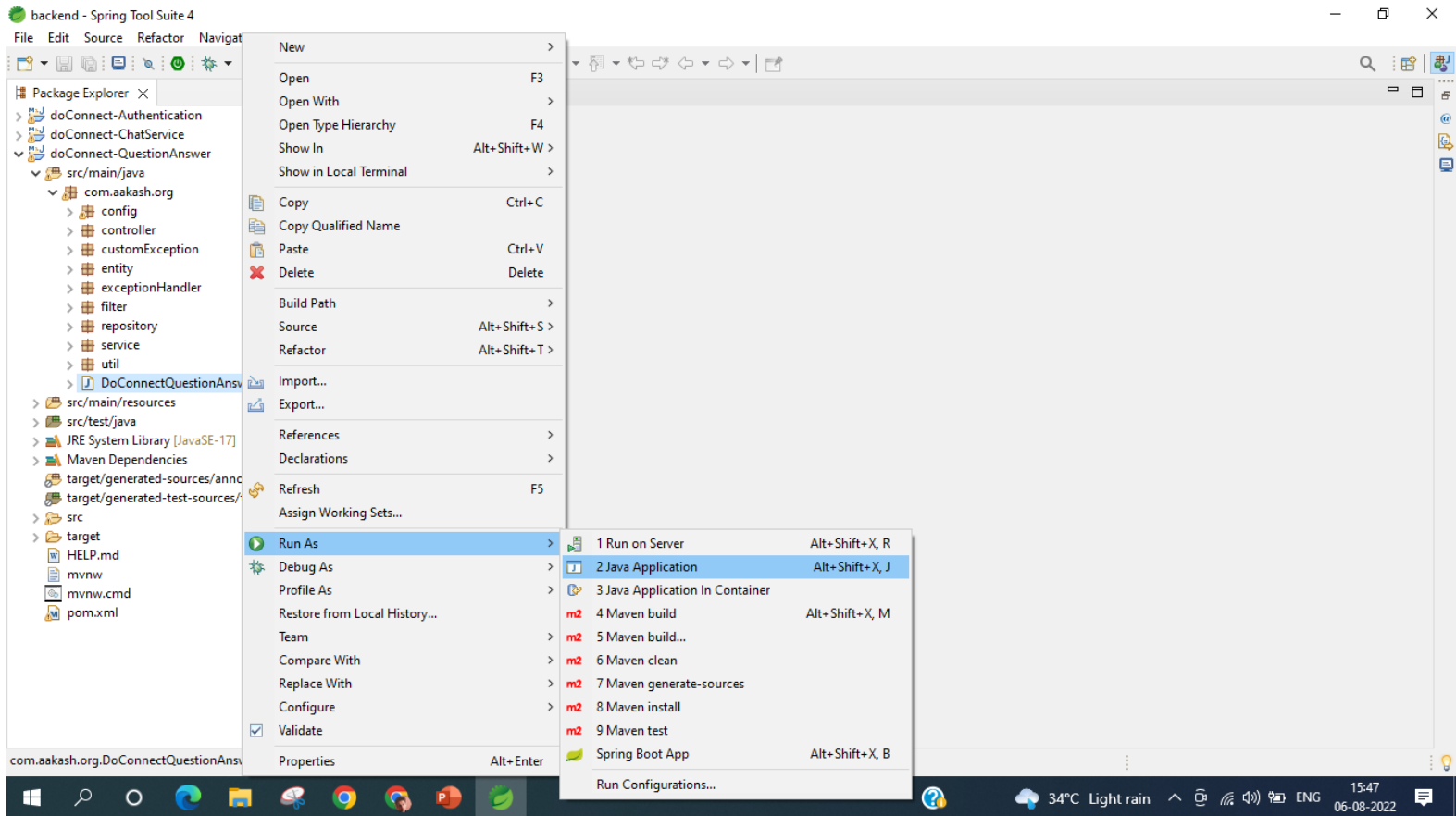
2.2 RUN CHAT SERVICE



Click on “Java Application” to run this service.



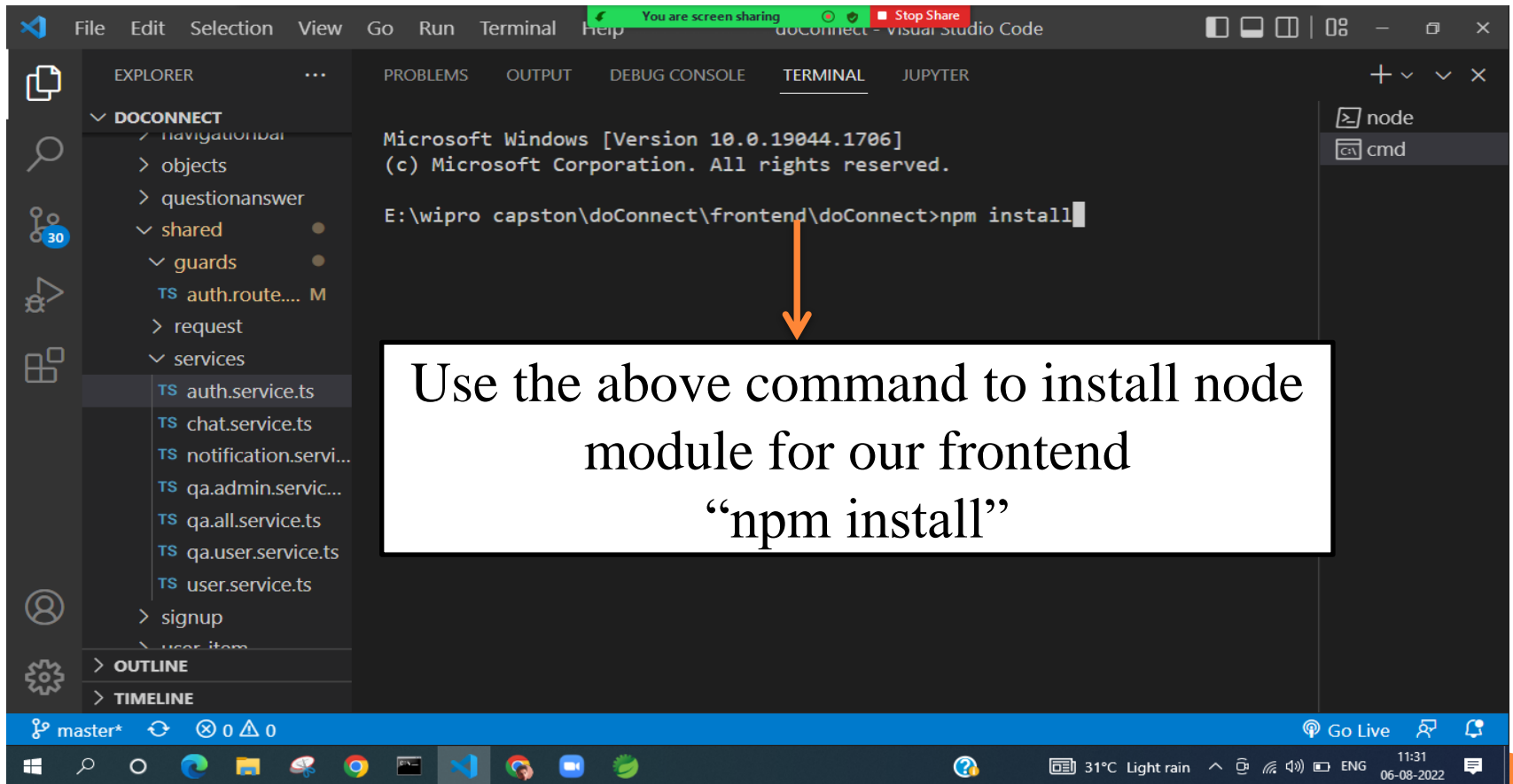
2.3 RUN QUESTION ANSWER SERVICE



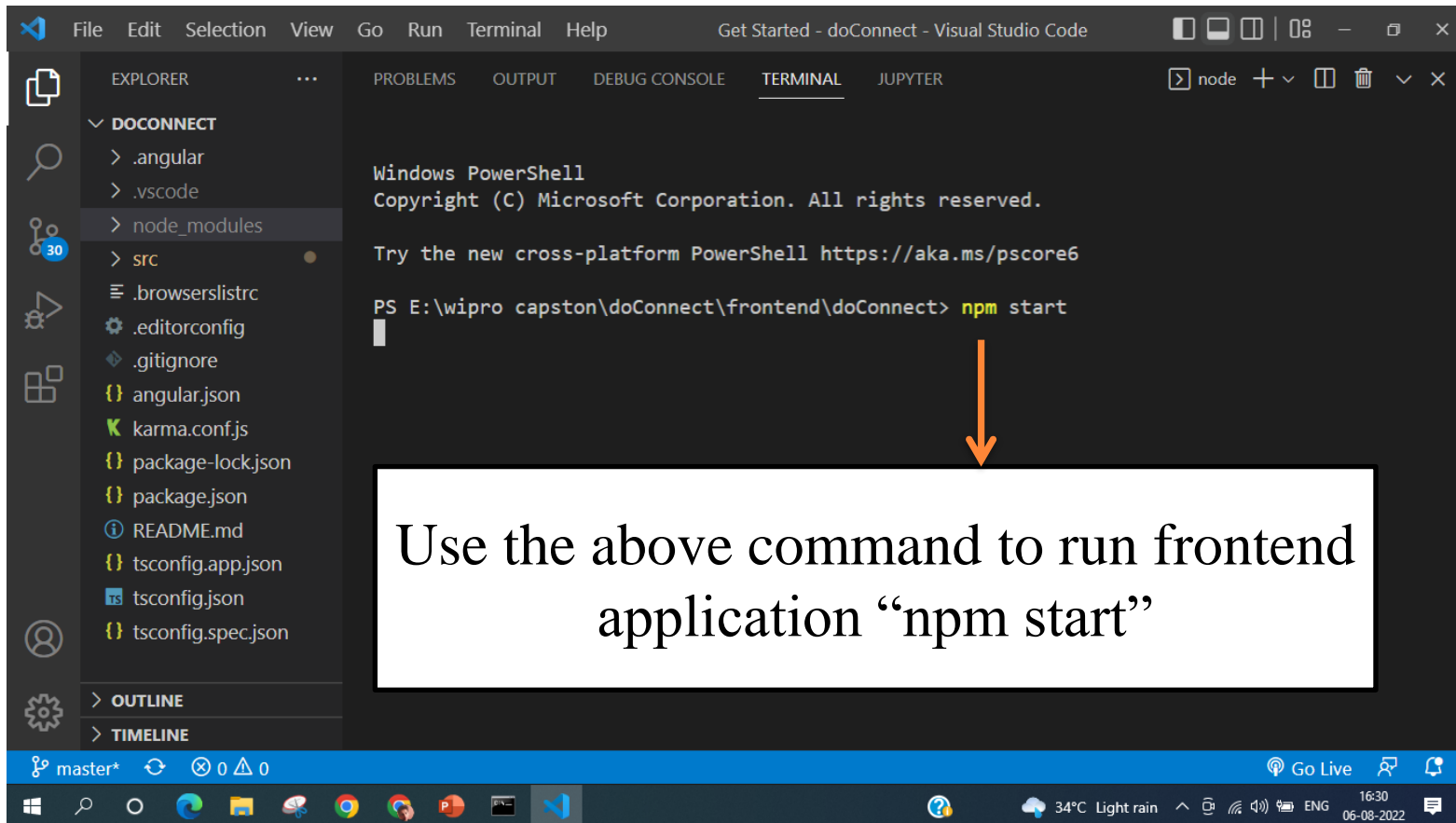
Click on “Java Application” to run this service.

3. CONFIGURE AND RUN FRONTEND WEB UI

- Open frontend/doConnect folder in VsCode



RUN FRONTEND



The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays the file structure of a project named 'DOCONNECT', with the 'src' directory selected. The Terminal panel on the right shows a Windows PowerShell session. The prompt is 'PS E:\wipro capston\doConnect\frontend\doConnect>' and the command 'npm start' has been entered. An orange arrow points from the 'npm start' command in the terminal to a white text box with a black border. The text box contains the instruction: 'Use the above command to run frontend application “npm start”'. The status bar at the bottom indicates the current branch is 'master*' and shows various system icons.

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS E:\wipro capston\doConnect\frontend\doConnect> npm start
```

Use the above command to run frontend application “npm start”

PORT DOCUMENTATION

- Backend spring boot

port => 9191 – Authentication Service

port => 9192 – Question Answer Service

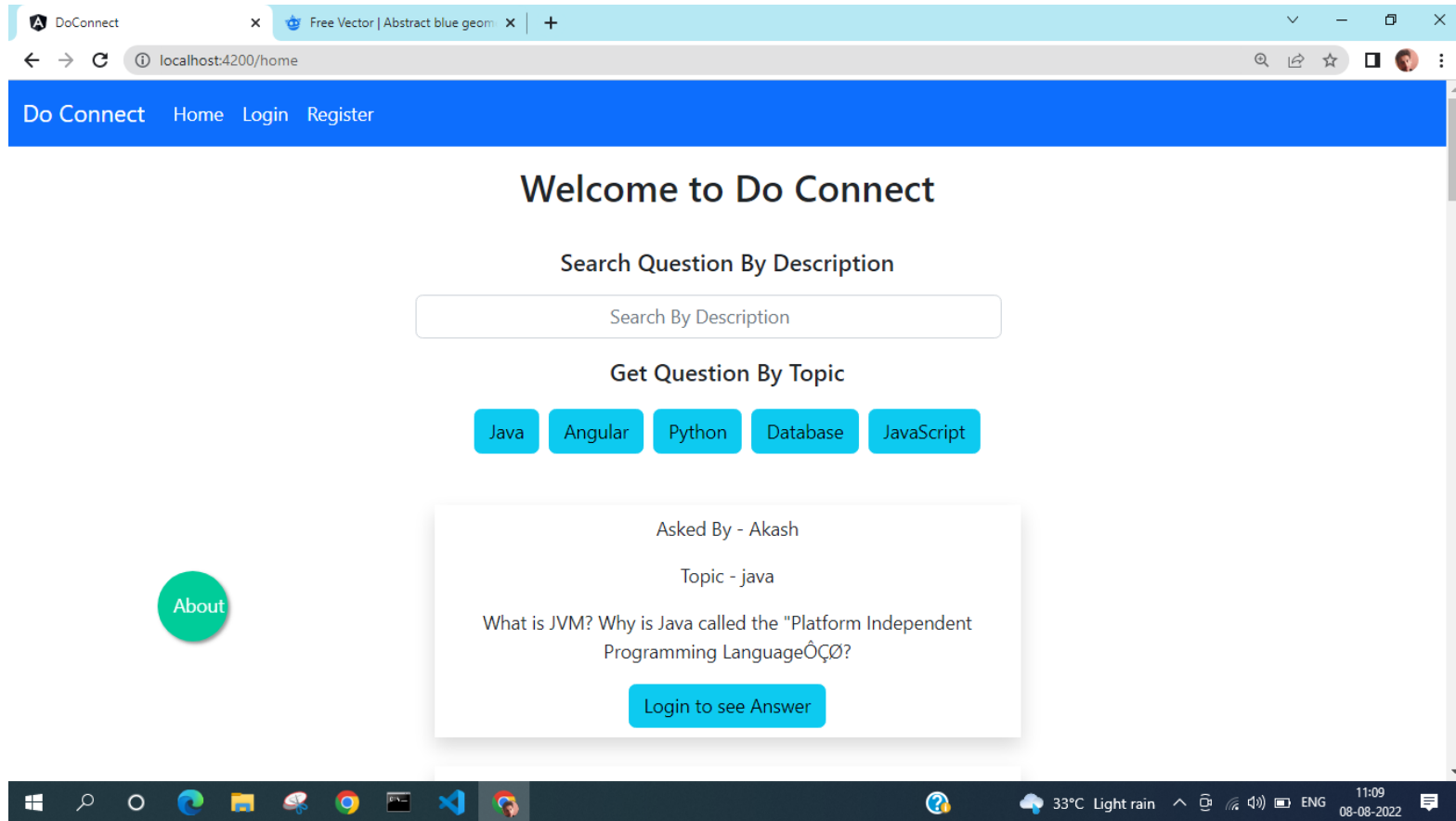
port => 9193 – Chat Services

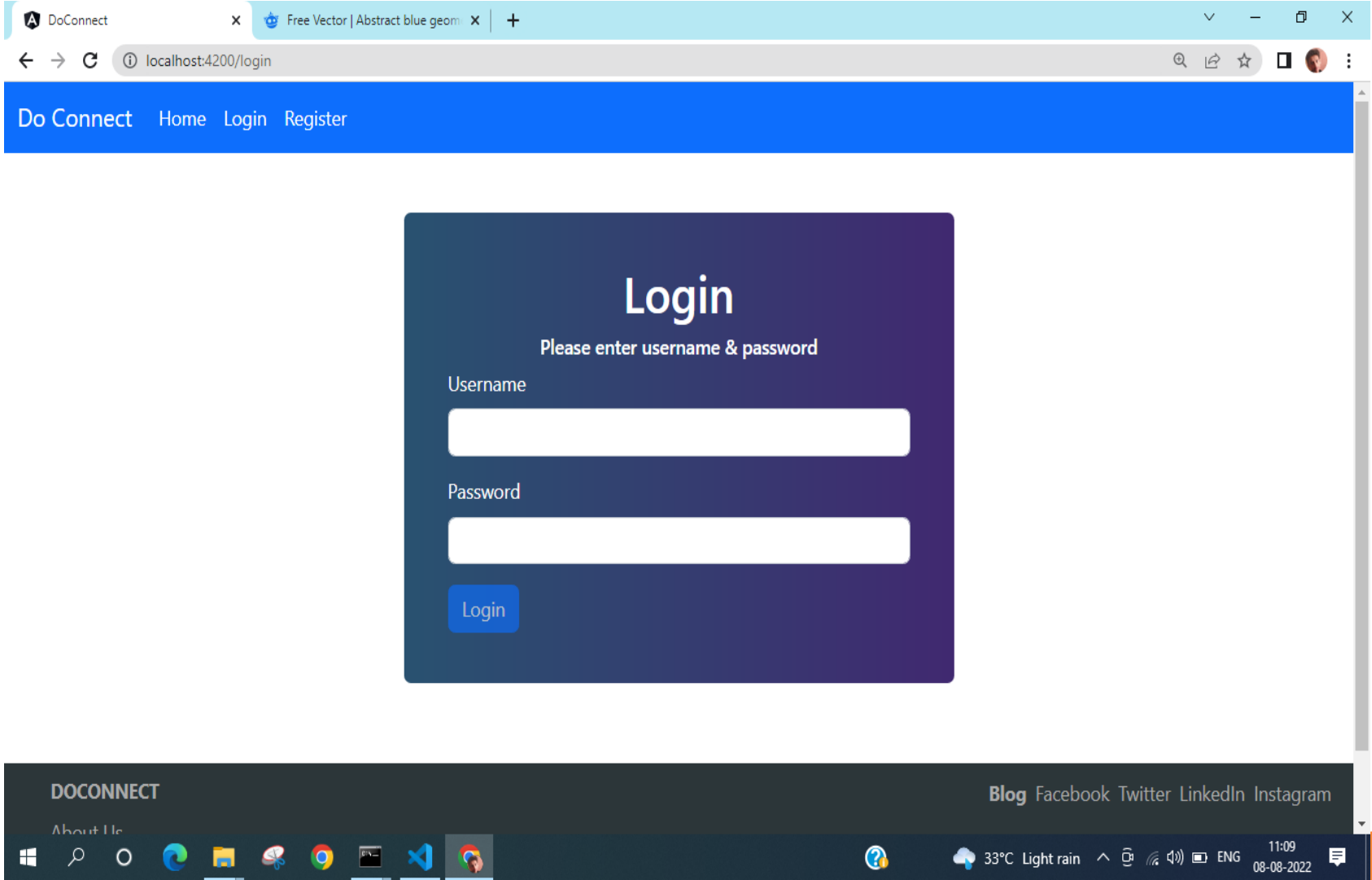
- frontend Angular

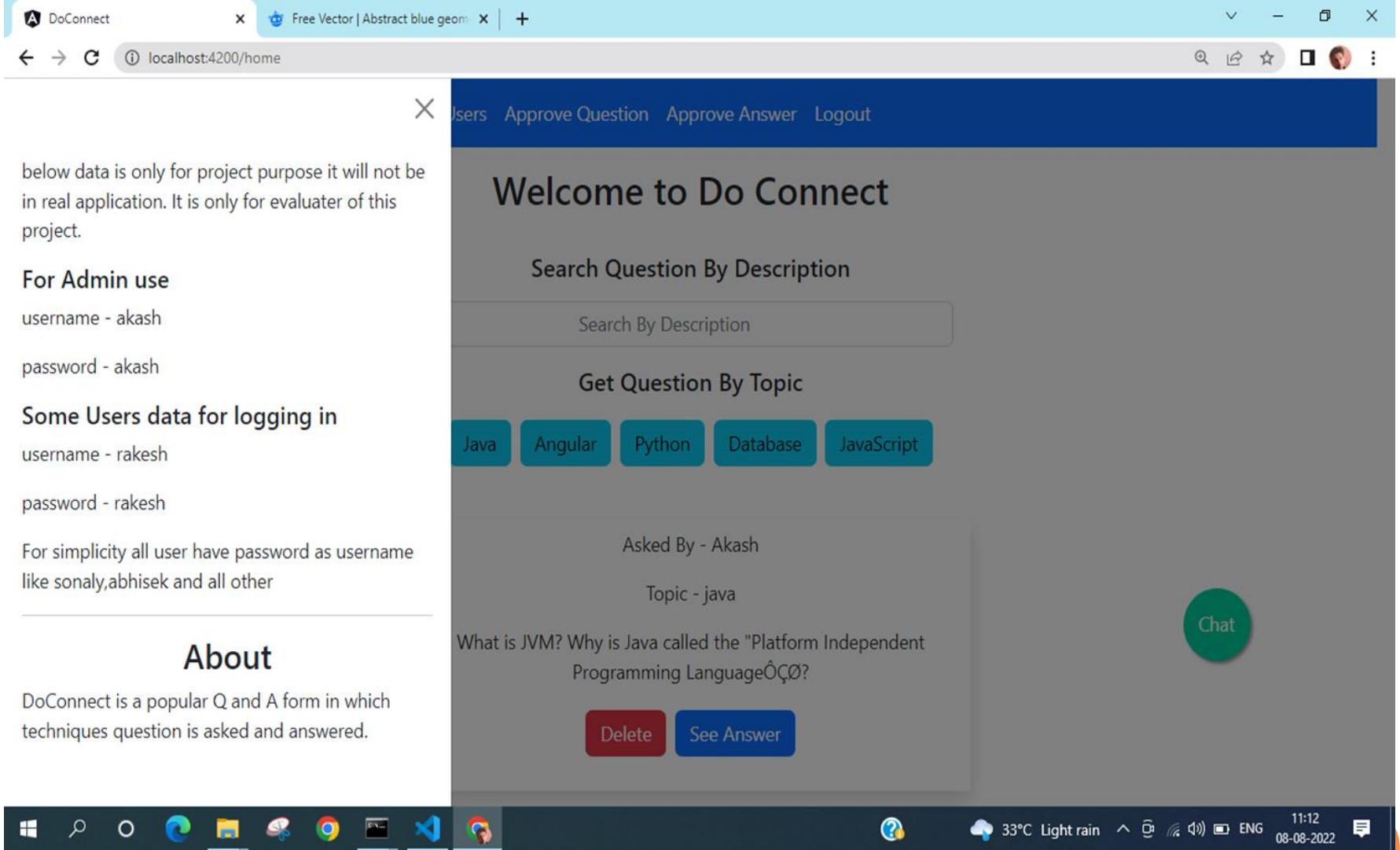
port => 4200 - DoConnect UI



GLIMPS OF PROJECT







Welcome to Do Connect

Search Question By Description

Get Question By Topic

- [Java](#) [Angular](#) [Python](#) [Database](#) [JavaScript](#)

About

Asked By - Akash

Topic - java

What is JVM? Why is Java called the "Platform Independent Programming Language"?

[Delete](#) [See Answer](#)

Chat

Delete

See Answer

Asked By - Sonaly

Topic - angular

akafdf ghgh hgghj



Delete

See Answer

About

Chat

DOCONNECT

About Us

Help

Blog Facebook Twitter LinkedIn Instagram

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33°C Light rain

11:11
08-08-2022

List of all the Answers to approve

Given By - Adamy

Answer - Java is platform independent. Because the Java compiler converts the source code to bytecode, which is Intermediate Language. Bytecode can be executed on any platform (OS) using JVM(Java Virtual Machine). ... Platform independent language means once compiled you can execute the program on any platform (OS).

Reject

Approve

Given By - Adamy

Answer - JRE identifies all the helpful class libraries needed for execution, while JVM is a subclass of JRE that decodes the bytecode into machine language and other minor tasks. JVM and JRE do not participate in development processes like debugging and compiling;



33°C Light rain



ENG



11:12

08-08-2022



List of all the questions to approve

Asked By - Abhishek

Topic - Java

What is JDBC?

Reject

Approve

Asked By - Pooja

Topic - Angular

What is use Service Class?

Reject

Approve

DoConnect

Free Vector | Abstract blue geom

localhost:4200/allusers

Do Connect

Home

Profile

Ask Question

All Users

Approve Question

Approve Answer

Logout

List of all the Users

Adarsh

User Info

Rakesh

User Info

Sonaly

User Info

Abhishek

User Info

Windows taskbar icons: Start, Search, Task View, Edge, File Explorer, Teams, Chrome, VS Code, and a custom icon.

System tray: Question mark icon, Weather (33°C Light rain), Network, Volume, Language (ENG), Time (11:12), and Date (08-08-2022).

Answers given by users

Given By - Akash

Answer - A Java virtual machine (JVM) is a process virtual machine that can execute Java bytecode. Each Java source file is compiled into a bytecode file, which is executed by the JVM. Java was designed to allow application programs to be built that could be run on any platform, without having to be rewritten or recompiled by the programmer for each separate platform. A Java virtual machine makes this possible because it is aware of the specific instruction lengths and other particularities of the underlying hardware platform.

Delete

Given By - Gaurav

Answer - Demo Answer this is to show answer content

Delete

Programming Language?

Choose File No file chosen

Give Answer

Answers given by users

Given By - Akash

DoConnect

Free Vector | Abstract blue geom

localhost:4200/home

Do ConnectHomeProfileAsk QuestionLogout

Welcome to Do Connect

Search Question By Description

Search By Description

Get Question By Topic

JavaAngularPythonDatabaseJavaScript

Asked By - Akash

Topic - java

What is JVM? Why is Java called the "Platform Independent Programming Language"?

See Answer

About

BackLive ChatAkash

so late

who are you

i am babu

yaha par kyu ho gadaha

Type message and PressRefresh

Windows taskbar with icons for Start, Search, Task View, Edge, File Explorer, Mail, Chrome, VS Code, and a profile icon.

System tray showing 33°C, Light rain, and date 08-08-2022.

Profile Update

Sonaly Verma

sonaly

Gender - Female

Date of birth -

Phone - 8115409033

Email - sonaly@gmail.com

Address -

Delete

CONCLUSION

- Question and Answer systems are used by a number of people for the basic need of answer retrieval, solving their doubts, assistance during their academics or basic discussions.
- The quality of the answers that are received, needed to be improved and the wait time for receiving the answers is to be reduced. Hence, this system was developed.



- The objective of this system is to utilize the chattels of a general online network where a question gets forwarded to someone who can provide an answer meanwhile ensuring that quality of the same is good enough in a short time.
- The burden on the users that provide the answers is decreased by directly providing them with questions that they may be intrigued in. This is different when compared with general search engines like Google.



THANK YOU

