LICENSE

CERTIFICATE

I, **Abdus Samad Azad** (UT1712910001) certify that the BCA Pre-Final year Project Report entitled
“Development of Chat Web Application” is done by me and my partner and it is an authentic work carried out by me at Anandaram Dhekial Phookan College. The matter embodied in this project work has not been submitted earlier for the award of any degree or diploma to the best of my knowledge and belief.

Signature of the Student
Date:

Certified that the Project Report entitled "**Development of Online Chat Web Application**” done by the above student is completed under my guidance.

Signature of the Supervisor
Date:

Organisation Name: Anandaram Dhekial Phookan College, Nagaon

UNDERTAKING: ANTI-PLAGIARISM

I, hereby, declare that the material/ content presented in the report are free from plagiarism and is properly cited and written in my own words. In case, plagiarism is detected at any stage, I shall be solely responsible for it.

Signature of Student
Abdus Samad Azad
UT1712910001

ACKNOWLEDGEMENTS

The success and completion of this project requires a lot of guidance and assistance from many peoples and I am extremely fortunate to get all these along with the completion of our project work.

I would like to take this opportunity to express our gratitude towards all the people who have in various ways, helped in the successful completion of our project.

I must thank Stack Overflow for helping me out everytime I encountered an error. I would like to thank Google and other awesome websites and forums for helping me with the information I needed. I would also like to thank those awesome developer whose libraries and packages I am using!

I would like to convey my gratitude to Mr. Deepjyoti Borah for his constant support and guidance through the tough as well as easy phases of the project in a result oriented manner with concern attention. I would also like to convey my gratitude to Mr. Dhiraj and Mr. Mayur Sir for helping me whenever I run into an issue.

Table of Content

Introduction

1. **Description of the Organization**: I am doing my BCA pre-final year project under Anandaram Dhekial Phookan College, Nagaon affiliated by Guwahati University.

2. **Data Collection**: In order to develop this web application, we collected data from verious sources. These data helped us developing this application in a smooth way. Following are a few of the places from where we collected our data:

    - **1:1 Discussion**: We talk about the idea with people from our friend circles. At first, we describe them our idea and asked what features they would like to see in the application.
    - **Group Discussion**: We raised about our project in a group of friends/classmates randomly and recorded their opinion about it.

System Analysis

Chat Application is a web-based chat application which enables two human(or sometime, robots) message each other over the Internet. It works in real-time, means, the message an end-user types, gets *almost* instantly delivered to the user on other end. This makes communication between two party flawless, easy and super fast!

This little application has so many advantages over a snailmail or even an email service. And a few disadvantages too! Let's talk about advantages first. Because, messages gets delivered almost instantly, users could communicate super faster! And hence, the less chances of miscommunication.

And the disadvantages are, well, let us know if you find any. We will try our best to fix that!

1. **Process(es)**: This application includes following Processes:

    - **Auth(Login/Signup)**: Authenactication process is one of the fundamental features in this application. This helps us, the developers, identify the users, adminstrating them etc.

    - **Live Chatting**: This is the process where the communication between two users happens.

2. **I/O of each Process(es)**:

    - **Auth**: User logs in by using email and password. When signing up, they have to provide a valid Email(for sending verification mail), Name, Password. If everything wents well, they will be registered in the database successfully.

    - **Chat**: User enters a message in chat-box, which is sent to server via AJAX call. User could also upload images, PNG etc which will be converted into base64 string before performing AJAX.

I/O	DOM Element
Login	`email`, `password`
Signup	`email`, `password`, `name`
Chat	`message-box`

Software Requiremnt Specification

Project Planning

The approach which is used to develop this application, is Feature Driven Development. FDD is methodology which comes under Agile Development. In this method, a software is developed completely based on the pre-determined feature.

We, a team of two students, developed this application from ground-up. And we learned a lot while we developed this application. Following are the names of the students:

1. **Abdus Samad Azad** (www.thisisabdus.dev)
2. **Shakir Mirza**

Initial features we've planned for this project were:

- **User Authenatication**: We needed a way to identify who is sending a

message. And for that, nothing else is better than authentication.
    - **Email Verification**: We certainly don't want the internet bots to sign-up automatically. We don't want people to mis-use it by using fake email addresses either. So, we've implemented this feature.
- **Live Messaging**: The most important feature.
- **Text to Speech**: Application could read the sent messages loud. This feature could help people who are visually-impaired to understand what other person has to say.
- **Status**: It should also display if an user is *typing* a message. It should also inform who is actually typing the message.
- **Image Sharing**: *A picture is worth a thousand words*. So, the feature.

Project Perspective

This product is released under MIT Open-Source license. This product doesn't come with a warrenty. One could use it however they want to. Could modify the source code. And even release it again as a proprietary software. However, developers aren't responsible for any harm/damage caused by this software.

- **User Interface**
  User Interface of this software includes the following areas:
    - *Login/Signup Page*: Nicely-designed Login/Signup page for users to Login/Signup
    - *Messaging UI*: User Interface for sending messages
- **Hardware Interface**
  Minimum requirments for the web application are:
    - 1 GigaByte RAM
    - Dual Core CPU
    - 10 GigaByte of Storage
- **Software Interface**
    - Code Editor/IDE: For writing codes. I have used Visual Studio Code.
    - A reliable database: For storing presistant information. We are using MongoDB for this project.
    - Server: For serving static and dynamic content. We are using NodeJS for creating server and managing back-end codebase.
    - Version Control System: For managing codebase effectively.

- **Required Dependencies**
  Following are the libraries/frameworks this project depends upon.

  - **`@sendgrid/mail(^6.3.1)`**: An API wrapper library. It sends email using SendGrid's API. I am using this in order to send verification emails.

  - **`bcrypt(^3.0.6)`**: BCrypt is a library for hashing and salting passwords. I certainly don't want to store passwords in plain text like Facebook.

  - **`express(^4.16.4)`**: *NodeJS Framework Trusted By All*! A framework which helps developers creating and managing NodeJS servers easily.

  - **`cookie-parser(^1.4.4)`**: A library for parsing cookies from Express' raw `request` object.

  - **`dotenv(^8.0.0)`**: For loading envirnment variables from a `.env` file, all at once.

  - **`express-handlebars(^3.0.2)`**: Handlebars template engine implemented in ExpressJS with some added features.

  - **`jsonwebtoken(^8.5.1)`**: Package which generates a auth token. I am using this for authenatication.

  - **`mongoose(^5.5.4)`**: ORM driver for MongoDB. As MongoDB is a NoSQL database, mongoose helps in defining a schema.

  - **`socket.io(^2.2.0)`**: For creating websocket server and client.

  - **`Responsive Voice`**: Library for making the browser speak. I could've used the browser's API to accomplish this. But it might produce compatiblity issue.

- **Product Function**
  This web-application will allow only authorized user to access the main chat area. Unauthorized users must create a new account in order to get access to the main chat area. Following are the steps how this application works under the hood:

  - *Sign-up*: User register himself/herself by providing a valid email, name and a password. Once server recieves it, it will check if the email is already existed in database. If not, server will send a verification mail to the provided email.
  - *Sign-in*: User have to provide email and password in order to sign in. These informations will be sent to back-end via an AJAX call so that

server could process it.
  - *Authentication*: Once server recieves email and password, it will start verifying email and password against database. If succeed, server will issue a new *json web token*(hence, authorizing the user to access protected resources) and send it back to front-end as a response of the previous AJAX call.
  - *Sending Messages*: When the user is authorized, he/she could send message by visiting message room(usually redirected automatically).

Software Requirement Specification

- **Physical Specification**
  TODO: ERD
  TODO: DFD
  TODO: FLOWCHART

- **Input Specification**
  This block will help us understand what type of data is expected form a user.

  - *Input Name: Log-In*

Field Name	Field Type	Field Size (No of Characters)	Description
`email`	String	Max*	stores email of the user
`password`	String	Max*	stores password of the user

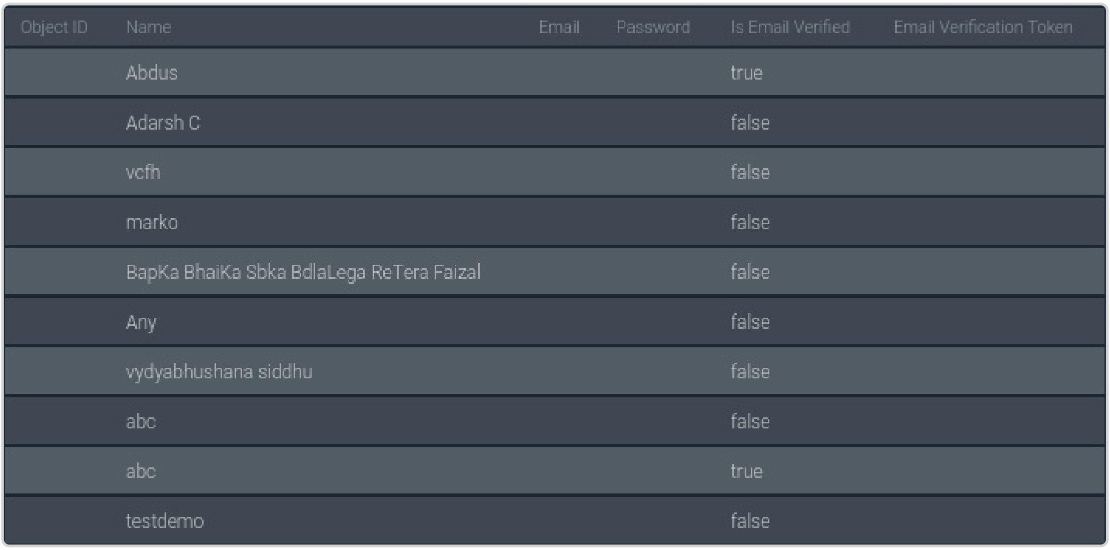
  - *Input Name: Sign-up*

Field Name	Field Type	Field Size (No of Characters)	Description
`email`	String	Max*	stores email of the user
`password`	String	Max*	stores password of the user
`name`	String	Max*	stores Name of the

name	string	Max	user

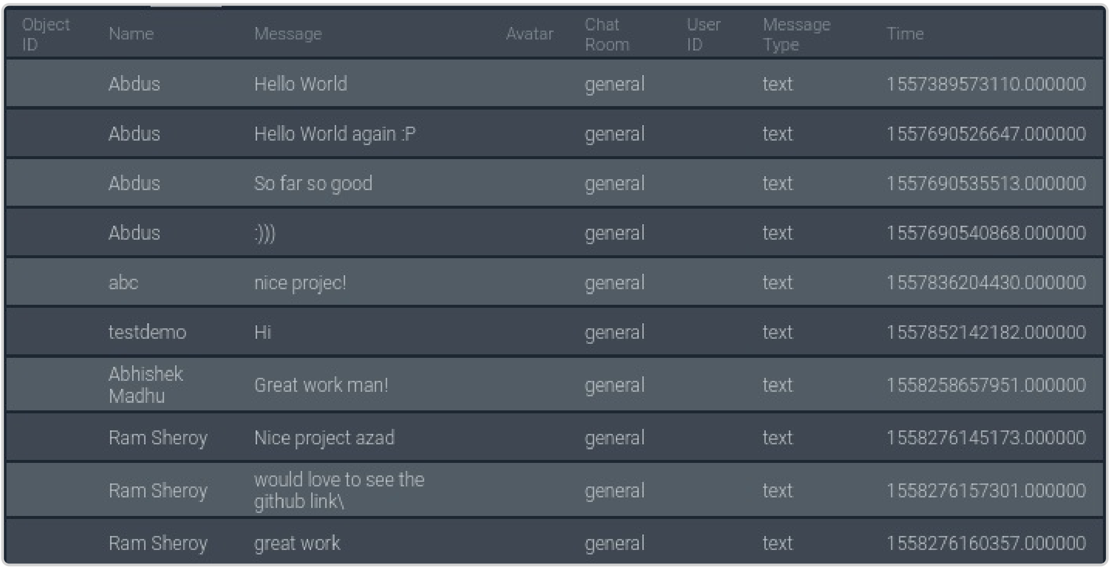
*Number of Characters equivalant to 4 MegaByte

- *Database Specification*: Following are the database collections for *user* and *message*.
  Fig: User Collection



Object ID	Name	Email	Password	Is Email Verified	Email Verification Token
	Abdus			true	
	Adarsh C			false	
	vcfh			false	
	marko			false	
	BapKa BhaiKa Sbka BdlaLega ReTera Faizal			false	
	Any			false	
	vydyabhushana siddhu			false	
	abc			false	
	abc			true	
	testdemo			false	

Fig: Message Collection



Object ID	Name	Message	Avatar	Chat Room	User ID	Message Type	Time
	Abdus	Hello World		general		text	1557389573110.000000
	Abdus	Hello World again :P		general		text	1557690526647.000000
	Abdus	So far so good		general		text	1557690535513.000000
	Abdus	:)))		general		text	1557690540868.000000
	abc	nice projec!		general		text	1557836204430.000000
	testdemo	Hi		general		text	1557852142182.000000
	Abhishek Madhu	Great work man!		general		text	1558258657951.000000
	Ram Sheroy	Nice project azad		general		text	1558276145173.000000
	Ram Sheroy	would love to see the github link\		general		text	1558276157301.000000
	Ram Sheroy	great work		general		text	1558276160357.000000

Source Code And Snapshots

Source Code

Following are the source code we wrote while building this web-application

package.json: It contains important information regarding the package(i.e. this application). This is basically a JSON file which must contain package version, package name, dependency list etc. And may contain npm-scripts which is used to automate the development process.

```
{
  "name": "chatter-box",
  "version": "0.0.1",
  "description": "Channel based chat app",
  "main": "app.js",
  "homepage": "https://quick-chat.now.sh",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1",
    "start": "NODE_ENV=production node app.js",
    "start:dev": "nodemon app.js",
    "md2pdf": "markdown-pdf -s /home/lxde/Documents/projects/github/chat-
app/docs/project-report.css",
    "deploy": "now --target production --public"
  },
  "engines": {
    "node": "12.2.0"
  },
  "author": "@thisisAbdus <dev.abdus@gmail.com>",
  "license": "MIT",
  "dependencies": {
    "@sendgrid/mail": "^6.3.1",
    "bcrypt": "^3.0.6",
    "cookie-parser": "^1.4.4",
    "dotenv": "^8.0.0",
    "express": "^4.16.4",
    "express-handlebars": "^3.0.2",
    "jsonwebtoken": "^8.5.1",
    "mongoose": "^5.5.4",
    "socket.io": "^2.2.0"
  },
  "devDependencies": {
    "chokidar": "^3.0.0",
    "duplexer": "^0.1.1",
    "markdown-pdf": "^9.0.0",
    "split": "^1.0.1",
    "through": "^2.3.8"
  }
}
```

app.js: `app.js` is the entry point of this project. This file is to be run in order to start this application.

```
const dotenv = require('dotenv').config();
const express = require('express');
const socket = require('socket.io');
const exphbs = require('express-handlebars');
const cookieParser = require('cookie-parser');
const routes = require('./routes/routes');
const { userSchema, messageSchema } = require('./db');
const { decodeToken } = require('./auth/jwt.auth');

// app setup
const app = express();
const server = app.listen(process.env.PORT || 3000, () =>
  console.log('Listening on 3000')
);

// view engine
app.engine('hbs', exphbs({ defaultLayout: 'main', extname: 'hbs' }));
app.set('view engine', 'hbs');

// middleware
app.use((req, res, next) => {
  // req.port = server.address().port;
  next();
});
app.use(express.static('static'));
app.use(express.json({ limit: '50mb' }));
app.use(cookieParser());
app.use(express.urlencoded({ extended: false, limit: '50mb' }));
app.use(routes);

// socket.io setup
let io = socket(server);
let totalConnectedClient = {};

io.on('connection', socket => {
  let roomName = socket.handshake.query.roomname;
  socket.join(roomName);

  totalConnectedClient[roomName] = totalConnectedClient[roomName]
    ? totalConnectedClient[roomName] + 1
    : 1;

  // on socket disconnection
  socket.on('disconnect', socket => {
    totalConnectedClient[roomName] = totalConnectedClient[roomName]
      ? totalConnectedClient[roomName] - 1
      : 1;
  });

  // emit a new chat message
  socket.on('chat', data => {
    decodeToken(data.jwt)
      .then(async d => {
        console.log(d);
        const user = await userSchema.findById(d.id);
        console.log(decodeToken(data.jwt));
        data.name = user.name;

        io.to(roomName).emit('chat', data);
        data = new messageSchema({
          chatRoom: data.chatRoom,
          user_id: user._id,
          messageType: data.type,
          name: user.name,
          message: data.message,
          imgSrc: data.imgSrc,
          time: data.time,
          avatar: data.avatar,
        });
        data.save();
      })
      .catch(e => {
        console.log(e.message);
      });
  });

  // typing... status
  socket.on('typing', data => {
    decodeToken(data.jwt)
      .then(async d => {
        const user = await userSchema.findById(d.id);
        data.name = user.name;
        data.onlineCount = totalConnectedClient;
        socket.broadcast.to(roomName).emit('typing', data);
      })
      .catch(e => {
        console.log(e.message);
      });
  });

  // for sending onlineCount every second
  setInterval(e => {
    io.to(roomName).emit('onlineCount', {
      count: totalConnectedClient[roomName],
    });
  }, 1000);
});
```

lib/sendMail: This is a small library(more of a helper function) I've created to send verification emails. Following are the source-code.

```
const sgMail = require('@sendgrid/mail');
sgMail.setApiKey(process.env.SENDGRID_API_KEY);
const msg = {
  to: 'dev.abdus@gmail.com',
  from: 'Chat Application <azad3652@gmail.com>',
  subject: 'Chat App - Account Verification',
  text: ` `,
  // html: 'Please Check Email Soon',
};

module.exports = (to, url) => {
  msg.to = to;
  msg.html = `Thank you for using our Application! Click on the following link to
confirm your email Address <a href="${url}">${url}</a>`;

  return new Promise((resolve, reject) => {
    sgMail.send(msg, err => (err ? reject(err) : resolve(true)));
  });
};
```

routes/routes.js: Route file for managing routes like `/signin`, `/room/general` etc

```
const r = require('express').Router();
const { messageSchema, userSchema } = require('../db');
const roomRoute = require('./rooms');
const {
  isLoggedIn,
  handleSignUp,
  handleSignIn,
} = require('../controller/auth.controller');

/** GET: HOMEPAGE */
r.get('/', isLoggedIn, (req, res) => {
  console.log(req.auth);
  if (req.auth.code === 100) return res.redirect('/room/general');
  else res.render('index', { layout: 'index' });
});

/** POST: Sign In */
r.post('/signin', handleSignIn, (req, res) => {
  res.send(req.handleSignIn);
});

/** POST: Sign up */
r.post('/signup', handleSignUp, (req, res) => {
  console.log(req.handleSignup);
  res.send(req.handleSignup);
});

/** GET: Chat Messages */
r.get('/messages/:room', (req, res) => {
  messageSchema
    .find({ chatRoom: req.params.room })
    .sort({ time: 1 })
    .then(data => res.json(data))
    .catch(err => res.json(err));
});

/** GET: Logout */
r.get('/logout', (req, res) => {
  req.auth = {
    code: 401,
    message: 'Unauthorized',
    userID: null,
  };
  res.clearCookie('jwt');
  return res.redirect('/');
});

/** GET: Email Verify */
r.get('/verify/:token', (req, res) => {
  userSchema
    .findOne({ emailVerificationToken: req.params.token })
    .exec()
    .then(user => {
      if (!user || user.length === 0) {
        return res.render('emailVerification', {
          message: 'No User Found With This Token',
          code: '404',
          layout: 'emailVerified',
          token: req.params.token,
        });
      } else {
        user.isEmailVerified = true;
        user.emailVerificationToken = '';
        user.save();

        return res.render('emailVerification', {
          message: 'User Verified',
          code: 100,
          layout: 'emailVerified',
          token: req.params.token,
        });
      }
    });
});

r.use('/room', isLoggedIn, roomRoute);

// exports
module.exports = r;
```

utils/helpers.js: Home for all *helper* functions.

```
const parseJWT = cookie => {
  return cookie.jwt ? cookie.jwt : null;
};

module.exports = {
  parseJWT,
};
```

static/: This directory contains all kind of static files which doesn't needs any processing. These files includes(but not limited to) HTML, CSS, JavaScript etc. Static files are served from / route. For instance, CSS would be served from `/css/`

static/css/main.css: Contains CSS rules used in the project.

```
@import url('https://fonts.googleapis.com/css?family=Poppins:300,400,700,900');

* {
  box-sizing: border-box;
}

body {
  margin: 0;
  font-family: 'Poppins', sans-serif;
}

a {
  color: #0059ff;
  text-decoration: none;
}

nav {
  height: 10vh;
  padding: 0;
  margin: 0;
  background: #36393f;
}
.channel-container {
  min-height: 90vh;
  background: #2f3136;
}
.channel-container a {
  display: block;
  padding: 0.5rem;
  text-decoration: none;
  color: #fff;
  transition: 0.5s ease-out all;
}
.channel-container a::before {
  content: '#';
}
```

```css
.channel-container a:hover {
  background: lightgray;
  color: #cb3837;
}
.info {
  width: 100%;
  text-align: center;
  padding: 10px 0;
  color: #555555;
  background: transparent;
}
#chat {
  display: flex;
  flex-direction: column;
  width: 60%;
  margin: auto;
  /* box-shadow: 0px 0px 10px 0px #141414 inset; */
}
#chat .online-count {
  z-index: 2000;
  max-width: 200px;
  align-self: flex-end;
  border-radius: 4px;
  padding: 0.2rem 0.4rem;
  background: #c4c4c469;
  position: fixed;
  top: 3px;
  right: 3px;
}
#chat .new-room {
  opacity: 0.3;
  color: #0059ff;
  z-index: 2000;
  position: fixed;
  right: 3px;
  top: 2rem;
  padding: 0.2rem 0.4rem;
  background: #ffa14a69;
  border-radius: 4px;
  cursor: pointer;
}
#chat .new-room:hover {
  opacity: 1;
}
#chat .room-card {
  position: fixed;
  height: 100vh;
  width: 100vw;
  color: #fff;
  background: #03254b;
  left: 0;
  top: 0;
  padding: 25vh 0;
  text-align: center;
  z-index: 2000;
}
```

```
.room-card-hide {
  display: none;
}
.room-card input,
.room-card button {
  padding: 10px 6px;
}
#chat .chat-window {
  min-height: 83vh;
  max-height: 83vh;
  overflow: hidden;
  position: relative;
}
.hide-typing-status {
  width: 100%;
  text-align: center;
  position: absolute;
  bottom: 0;
  left: 0;
  background: #1414141f;
  color: #4d4d4d62;
  border-top-left-radius: 4px;
  border-top-right-radius: 4px;
  transition: 0.2s ease-out all;
  display: none;
}
.reveal-typing-status {
  display: block;
}
#chat .chat-window .hide-scroll-bar {
  min-height: 83vh;
  max-height: 83vh;
  width: 102%;
  overflow-y: scroll;
}
#chat .chat-window .card {
  width: 90%;
  padding: 0.4rem 0.2rem;
  margin: 0 auto;
  display: flex;
  justify-content: space-between;
  align-items: flex-start;
  border-bottom: 1px solid #dadada;
  /* background: #36393f;
    color: #fff; */
}
#chat .chat-window .card .user-img {
  width: 40px;
  height: 40px;
  padding: 0.2rem 0;
  box-sizing: content-box;
}
#chat .chat-window .card .user-img img {
  width: 100%;
  height: 100%;
  border-radius: 5px;
```

```css
}
#chat .chat-window .card .message-meta {
  width: calc(100% - 60px);
  padding: 0.2rem;
}
#chat .chat-window .card .message-meta .meta {
  font-weight: 700;
  margin-bottom: 4px;
  color: #9657b0;
}
#chat .chat-window .card .message-meta .message {
  max-width: 100%;
  font-weight: 300;
  margin-bottom: 4px;
}
#chat .chat-window .card .message-meta .message img {
  height: 100%;
  width: 100%;
  max-height: 350px;
  max-width: 150px;
  border-radius: 4px;
  margin: 0;
}
#chat .chat-box {
  text-align: center;
  margin: 0.4rem auto;
  width: 100%;
  background: white;
  position: relative;
}
/* #chat .chat-box .message-option {

} */
#chat .chat-box input,
#chat .chat-box button {
  padding: 0.5rem 0.2rem;
  background: transparent;
  border: 1px solid #141414;
  border-radius: 4px;
}
#chat .chat-box input {
  width: 60%;
  border: none;
  border: 1px solid #141414;
}
#chat .chat-box button {
  width: calc(100% - 85%);
}
#chat .chat-box .image-share-button {
  width: auto;
  padding: 0.5rem 1rem !important;
}

/* IMAGE SHARE  */
#img-share {
  position: fixed;
  top: 0;
  left: 0;
  width: 100vw;
  height: 100vh;
  background: #020202c5;
  color: #fff;
  display: none;
}
#img-share .form-wrapper {
  position: relative;
  display: table-cell;
  height: 100vh;
  width: 100vw;
  vertical-align: middle;
  text-align: center;
}
#img-share .form-wrapper input {
  border: 1px solid #00ff6f00;
  background: white;
  border-radius: 4px;
  color: #141414;
}
#img-share .form-wrapper .img-share-submit-cancel {
  margin: 0.6rem 0;
}
#img-share .form-wrapper .img-share-submit-cancel button,
#img-share .form-wrapper .img-share-submit-cancel button:hover {
  padding: 0.3rem 0.5rem;
  border-radius: 4px;
  cursor: pointer;
}
#img-share .form-wrapper .image-preview {
  max-width: 200px;
  max-height: 200px;
  margin: 0.9rem auto;
}
#img-share .form-wrapper .image-preview img {
  width: 100%;
  height: 100%;
  border-radius: 4px;
}
/* MEDIA QUERY */
@media (max-width: 700px) {
  #chat {
    width: 100%;
  }
  #chat .chat-window {
    min-height: 83vh;
    max-height: 83vh;
    overflow-y: auto;
    /* overflow: -moz-scrollbars-none; */
  }
  #chat .chat-window .hide-scroll-bar {
    min-height: 83vh;
    max-height: 83vh;
    width: 100%;
    overflow-y: auto;
  }
  #chat .chat-window .card {
    width: auto;
  }
  #chat .chat-window .card .user-img {
    width: 30px;
    height: 30px;
  }
  #chat .chat-window .card .message-meta {
    width: calc(100% - 40px);
  }
}
.model {
  padding: 0.8rem;
  z-index: 3000;
  margin: 0;
  position: fixed;
  top: 0;
  left: 0;
  width: 100%;
  height: 100vh;
  background: #ffffff;
  visibility: visible;
  opacity: 1;
  transition: 0.6s cubic-bezier(0.68, -0.55, 0.27, 1.55) all;
}

.model.hide {
  visibility: hidden;
  opacity: 0;
}

.model .model-content-wrapper {
  max-width: 40rem;
  margin: 4rem auto;
  box-shadow: 0 0 3rem 0 lightgray;
  border-radius: 0.3rem;
  padding: 1rem;
  transition: 0.6s cubic-bezier(0.68, -0.55, 0.27, 1.55) all;
}
.model .model-content-wrapper.hide {
  transform: translateY(-200%);
}

.model .model-content-wrapper .action {
  margin-top: 2rem;
  text-align: right;
}
.model .model-content-wrapper .action button {
  text-transform: uppercase;
  cursor: pointer;
  padding: 0.4rem 0.7rem;
  background: #ffffff;
  border: 1px solid #141414;
  border-radius: 0.3rem;
```

```css
  color: #141414;
  background: #ffffff;
  font: inherit;
}
.model .model-content-wrapper .action button.close {
  color: red;
  border-color: red;
}
/* HOME PAGE */
#index {
  background: #fff;
}

#home {
  background: linear-gradient(#0059ffd3, #0059ffe0), url(/img/chat.svg);
  background-size: cover;
  min-height: 80vh;
  max-width: 90%;
  margin: 10vh auto 10vh auto;
  border-radius: 0.3rem;
  display: flex;
  align-items: center;
  justify-content: space-around;
  flex-wrap: wrap;
  box-shadow: 0 0 10px 0 lightgray;
  transition: 0.4s ease all;
}

#home:hover {
  box-shadow: 0 0 10px 0 #c4c4c4;
}

#home .signup,
#home .login,
#home .forgot-password-form {
  width: 100%;
  opacity: 0;
  transform: translateY(-400%);
  position: absolute;
  transition: 0.2s ease-in-out all;
}

#home .show {
  opacity: 1;
  transform: translateY(0);
}

#home .signup form,
#home .login form,
#home .forgot-password-form {
  padding: 0.3rem;
}

#home .signup form input,
#home .login form input,
#home .forgot-password-form form input,
#login-instead,
#signup-instead,
#forgot-password,
#back-to-login {
  display: block;
  width: 30%;
  padding: 0.7rem;
  margin: 0.3rem auto;
  border: 1px solid lightgray;
  border-radius: 0.3rem;
}

#home .signup form input[type='submit'],
#home .login form input[type='submit'],
#home .forgot-password-form form input[type='submit'] {
  font: inherit;
  font-weight: 900;
  text-transform: uppercase;
  color: #fff;
  background: #141414;
  border: 1px solid #141414;
  cursor: pointer;
  transition: 0.2s ease all;
}

#home .signup form input[type='submit']:hover,
#home .login form input[type='submit']:hover,
#home .forgot-password-form form input[type='submit']:hover {
  background: #03254b;
}

#home .signup form .message-box,
#home .login form .message-box,
#home .forgot-password-form form .message-box {
  width: 30%;
  margin: auto;
  padding: 0.7rem;
  border-radius: 0.3rem;
}

.error-message {
  color: #ff0000;
  background: #f8cbcb;
  border: 1px solid #ff0000;
}

.info-message {
  color: green;
  background: #b7fab7;
  border: 1px solid green;
}

#home .signup form .hide,
#home .login form .hide,
#home .forgot-password-form form .hide {
  height: 0;
  width: 0;
  border: 0;
  padding: 0;
  overflow: hidden;
}

#home .login form .form-title,
#home .signup form .form-title,
#home .forgot-password-form .form-title {
  width: 100%;
  margin: 0.7rem 0;
  font-size: 2rem;
  text-align: center;
  font-weight: 900;
  color: ivory;
}

#login-instead,
#signup-instead,
#forgot-password,
#back-to-login {
  border: none;
  font-weight: 400;
  color: #fff;
  padding: 0.7rem 0;
  text-align: center;
  cursor: pointer;
}

@media (max-width: 800px) {
  #home .signup form input,
  #home .login form input,
  #home .forgot-password-form form input {
    width: 65%;
    padding: 1rem;
  }
  #login-instead,
  #signup-instead,
  #forgot-password,
  #back-to-login {
    width: 65%;
  }

  #home .signup form .message-box,
  #home .login form .message-box,
  #home .forgot-password-form form .message-box {
    width: 65%;
  }
}
@media (max-width: 500px) {
  #home .signup form input,
  #home .login form input,
  #home .forgot-password-form form input,
  #login-instead,
  #signup-instead,
  #forgot-password,
  #back-to-login,
  #home .signup form .message-box,
  #home .login form .message-box,
  #home .forgot-password-form form .message-box {
    width: 85%;
  }
}

/* PARTIAL: FOOTER */
footer {
  padding: 2rem;
  text-align: center;
  display: grid;
  grid-template-rows: auto auto auto;
  grid-row-gap: 1rem;
}

footer #social a {
  margin: 0 0.2rem;
  color: gray;
  font-size: 1.3em;
  transition: 0.3s ease all;
}

footer #social a:hover {
  color: #141411;
}
```

static/js: Contains all client-side javascript files. And served from `/javascript/` route.

static/js/functions.js: Stores functions inside it so the codes doesn't look cluttered.

```
const tts = message => {
  if (!message.startsWith('/tts ')) return;
  message = message.slice(4);
  responsiveVoice.speak(message, 'UK English Male');
  console.log(message);
  return message;
};

// FUNCTIONS
function getCookie(cname) {
  var name = cname + '=';
  var decodedCookie = decodeURIComponent(document.cookie);
  var ca = decodedCookie.split(';');
  for (var i = 0; i < ca.length; i++) {
    var c = ca[i];
    while (c.charAt(0) === ' ') {
      c = c.substring(1);
    }
    if (c.indexOf(name) === 0) {
      return c.substring(name.length, c.length);
    }
  }
  return '';
}

// for parsing date
const messageTime = dateMili => {
  let dateStr = new Date(dateMili).toString();
  let dateNowStr = new Date(Date.now()).toString();
  let date =
    dateStr.split(' ')[2] +
    ' ' +
    dateStr.split(' ')[1] +
    ' ' +
    dateStr.split(' ')[3];
  let dateNow =
    dateNowStr.split(' ')[2] +
    ' ' +
    dateNowStr.split(' ')[1] +
    ' ' +
    dateNowStr.split(' ')[3];
  let time = dateStr.split(' ')[4].split(':');
  time = time[0] + ':' + time[1];

  if (date === dateNow) return `at ${time}`;
  else return `on ${date} at ${time}`;
};

// Function Emit Chat
const chatEventEmitter = () => {
  if (inputField.value.trim() !== '') {
    socket.emit('chat', {
      jwt: getCookie('jwt'),
      type: 'text',
      message: inputField.value,
      time: Date.now(),
      avatar:
        getCookie('avatar') !== ''
          ? getCookie('avatar')
          : 'https://pixel.nymag.com/imgs/daily/vulture/2018/11/02/02-avatar-
2.w700.h700.jpg',
      chatRoom: window.location.pathname.split('/')[2],
    });
    inputField.value = '';
    typingStatus.style.display = 'none';
  }
};

// converts image to base64 uri
const toDataURI = (fileInput, cb) => {
  let reader = new FileReader();
  reader.readAsDataURL(fileInput.files[0]);
  reader.onload = () => {
    cb(reader.result);
  };
};

// Function that will write messages in message-window
const writeMessage = message => {
  if (message.type === 'image') {
    return `<div class="card">
                <div class="user-img">
                    <img src="${message.avatar}" alt="">
                </div>
                <div class="message-meta">
                    <div class="meta">${message.name} ${messageTime(
      message.time
    )}</div>
                    <div class="message"><img src="${
                      message.imgSrc
                    }" alt="" /></div>
                </div>
            </div>
        `;
  } else {
    return `
            <div class="card">
                <div class="user-img">
                    <img src="${message.avatar}" alt="">
                </div>
                <div class="message-meta">
                    <div class="meta">${message.name} ${messageTime(
      message.time
    )}</div>
                    <div class="message">${
                      tts(message.message)
                        ? tts(message.message)
                        : message.message
                    }</div>
                </div>
            </div>
        `;
  }
};
let socket = io({
  query: 'roomname=' + window.location.pathname.split('/')[2],
});

// query DOM
let chatWindow = document.getElementById('chat-window');
let inputField = document.getElementById('message-input');
let sendButton = document.getElementById('send-message');
let nameOfTypers = document.getElementById('typers');
let typingStatus = document.querySelector('.hide-typing-status');
let onlineCounter = document.querySelector('#online-count');

// Emmit a message on clicking send
sendButton.addEventListener('click', e => {
  chatEventEmitter();
});
```

```javascript
// Emit an event on pressing enter
inputField.addEventListener('keydown', e => {
  if (e.key === 'Enter') {
    chatEventEmitter();
  }
  // Emit typing... status
  socket.emit('typing', {
    jwt: getCookie('jwt'),
  });
});

// hide typing status is every 4 sec
setInterval(e => {
  typingStatus.style.display = 'none';
}, 4000);

// get message and write it to window
socket.on('chat', e => {
  // Play notification sound
  let audio = new Audio('/sounds/all-eyes-on-me.mp3');
  audio.play();

  // write data on chat window
  chatWindow.innerHTML += writeMessage(e);

  // get the last .card, check if sender and reciver is same, and modify
accordingly
  if (e._id === getCookie('_id')) {
    Array.from(document.querySelectorAll('.card')).pop().style.background =
      '#c4c4c469';
  }

  // show the latest chats
  chatWindow.scrollTop = chatWindow.scrollHeight;
});

// typing status reciever
socket.on('typing', e => {
  typingStatus.style.display = 'block';
  nameOfTypers.innerHTML = `${e.name.split(' ')[0]}`;
});

// online count reciever (1sec int)
socket.on('onlineCount', e => {
  onlineCounter.innerHTML = e.count;
});

let oldMessagesContainer = document.getElementById('old-messages');

// Fill old messages in DB
fetch('/messages/' + window.location.pathname.split('/')[2])
  .then(res => res.json())
  .then(res => {
    oldMessagesContainer.innerHTML = ''; // clear container text
    for (let i in res) {
      if (res[i].messageType === 'image') {
        oldMessagesContainer.innerHTML += `
                <div class="card">
                    <div class="user-img">
                        <img src="${res[i].avatar}" alt="">
                    </div>
                    <div class="message-meta">
                        <div class="meta">${res[i].name} ${messageTime(
          res[i].time
        )}</div>
                        <div class="message"><img src="${
                          res[i].imgSrc
                        }" alt="" /></div>
                    </div>
                </div>
            `;
      } else {
        oldMessagesContainer.innerHTML += `
                <div class="card">
                    <div class="user-img">
                        <img src="${res[i].avatar}" alt="">
                    </div>
                    <div class="message-meta">
                        <div class="meta">${res[i].name} ${messageTime(
          res[i].time
        )}</div>
                        <div class="message">
                            ${
                              res[i].message.split('/tts ').length > 1
                                ? res[i].message.split('/tts ')[1]
                                : res[i].message
                            }
                        </div>
                    </div>
                </div>
            `;
      }

      // show the latest chats
      chatWindow.scrollTop = chatWindow.scrollHeight;

      // get the last .card, check if sender and reciver is same, and modify
accordingly
      if (res[i].user_id === getCookie('_id')) {
        Array.from(document.querySelectorAll('.card')).pop().style.background =
          '#c4c4c469';
      }
    }
  });
```

static/js/homepage.js: It contains javascript needed in order make homepage work as expected.

```
const toggleButton__div = document.querySelector('a');
```

```javascript
const login__div = document.querySelector('#login');
const signup__div = document.querySelector('#signup');
const loginInstead__div = document.querySelector('#login-instead');
const signupInstead__div = document.querySelector('#signup-instead');
const forgotPassword__div = document.querySelector('#forgot-password');
const forgotPasswordForm__div = document.querySelector('#forgot-password-form');
const backToLogin__div = document.querySelector('#back-to-login');
const formMessageContainer__div = document.querySelectorAll('.message-box'); //
[0] -> login; [1] -> signup; [2] -> reset password
const closeModel__button = document.querySelectorAll('.model .action .close');

const toggleForm = () => {
  login__div.classList.toggle('show');
  signup__div.classList.toggle('show');
  forgotPasswordForm__div.classList.remove('show');
};

forgotPassword__div.onclick = () => {
  login__div.classList.remove('show');
  signup__div.classList.remove('show');
  forgotPasswordForm__div.classList.add('show');
};

backToLogin__div.onclick = () => {
  login__div.classList.add('show');
  signup__div.classList.remove('show');
  forgotPasswordForm__div.classList.remove('show');
};

loginInstead__div.onclick = toggleForm;
signupInstead__div.onclick = toggleForm;

/** Close any open model on clicking `close` button */
closeModel__button.forEach(c => {
  c.addEventListener('click', () => {
    const elementToHide = document.querySelector(`#${c.classList[1]}`);
    const elementToHide__content = document.querySelector(
      `#${c.classList[1]} > .model-content-wrapper`
    );

    elementToHide.classList.add('hide');
    elementToHide__content.classList.add('hide');
  });
});

/** Handle SignUp form submission */
const signUpForm = signup__div.childNodes[1];

signUpForm.addEventListener('submit', e => {
  e.preventDefault();

  const formData = JSON.stringify({
    name: signUpForm.elements['name'].value,
    email: signUpForm.elements['email'].value,
    password: signUpForm.elements['password'].value,
  });
  fetch('/signup', {
    body: formData,
    method: 'POSt',
    headers: {
      'Content-Type': 'application/json',
    },
  })
    .then(data => data.json())
    .then(data => {
      if (data.code === 100) {
        const verifyEmailModel = document.querySelector('#verifyEmailModel');
        const verifyEmailModel__content = document.querySelector(
          '#verifyEmailModel .model-content-wrapper'
        );
        // show the email verification model
        verifyEmailModel.classList.remove('hide');
        verifyEmailModel__content.classList.remove('hide');

        // show success message
        // signInForm.elements['email'].value =
signUpForm.elements['email'].value;
        // signInForm.elements['password'].value =
        //   signUpForm.elements['password'].value;
        // formMessageContainer__div[0].innerText = `Please Login`;
        // formMessageContainer__div[0].classList.add('info-message');
        // formMessageContainer__div[0].classList.remove('error-message');
        // formMessageContainer__div[0].classList.remove('hide');
        loginInstead__div.click();
      } else {
        formMessageContainer__div[1].innerText = data.message;
        formMessageContainer__div[1].classList.remove('info-message');
        formMessageContainer__div[1].classList.add('error-message');
        formMessageContainer__div[1].classList.remove('hide');
      }
    })
    .catch(console.log);
});

/** Handle SignIn form Submission */
const signInForm = login__div.childNodes[1];

signInForm.addEventListener('submit', e => {
  e.preventDefault();

  const formData = JSON.stringify({
    email: signInForm.elements['email'].value,
    password: signInForm.elements['password'].value,
  });

  fetch('/signin', {
    body: formData,
    method: 'POSt',
    headers: {
      'Content-Type': 'application/json',
    },
  })
    .then(data => data.json())
    .then(data => {
      console.log(data);
      if (data.code === 100) {
        location.replace('/room/general');
      } else {
        formMessageContainer__div[0].innerText = data.message;
        formMessageContainer__div[0].classList.remove('info-message');
        formMessageContainer__div[0].classList.add('error-message');
        formMessageContainer__div[0].classList.remove('hide');
      }
    })
    .catch(console.log);
});
```

static/js/imageShare.js: This JavaScript file helps in sending images to server.

```javascript
let imageShareWindow = document.getElementById('img-share');
let imageShareButton = document.getElementById('image-share-button');
let cancelImageShareButton = document.getElementById('cancel-image-share');
let imageSubmitButton = document.getElementById('image-submit-button');
let imageInputField = document.getElementById('image-input-field');
let imagePreviewer = document.getElementById('image-preview');
let img = document.createElement('img');

// for opening share window
imageShareButton.addEventListener('click', e => {
  e.preventDefault();
  imageShareWindow.style.display = 'block';
});

// for canceling image sharing
cancelImageShareButton.addEventListener('click', e => {
  imageShareWindow.style.display = 'none';
});

// to load preview image as soon as file selected
imageInputField.addEventListener('change', e => {
  toDataURI(imageInputField, e => {
    img.src = e;
    imagePreviewer.appendChild(img);
    img = document.createElement('img');
  });
});

// share and emit event
imageSubmitButton.addEventListener('click', e => {
  toDataURI(imageInputField, uri => {
    socket.emit('chat', {
      type: 'image',
      jwt: getCookie('jwt'),
      imgSrc: uri,
      time: Date.now(),
      avatar:
        getCookie('avatar') !== ''
          ? getCookie('avatar')
          : 'https://banner2.kisspng.com/20180319/pde/kisspng-computer-icons-icon-
design-avatar-flat-face-icon-5ab06e33bee962.1221186015215111987782.jpg',
      chatRoom: window.location.pathname.split('/')[2],
    });
  });

  // clear image fields and hide share window
  imagePreviewer.removeChild(imagePreviewer.childNodes[0]);
  imageShareWindow.style.display = 'none';
  imageInputField.value = '';
});
```

static/js/main.js: The main client-side JavaScript file.

```
let socket = io({
  query: 'roomname=' + window.location.pathname.split('/')[2],
});

// query DOM
let chatWindow = document.getElementById('chat-window');
let inputField = document.getElementById('message-input');
let sendButton = document.getElementById('send-message');
let nameOfTypers = document.getElementById('typers');
let typingStatus = document.querySelector('.hide-typing-status');
let onlineCounter = document.querySelector('#online-count');

// Emmit a message on clicking send
sendButton.addEventListener('click', e => {
  chatEventEmitter();
});

// Emit an event on pressing enter
inputField.addEventListener('keydown', e => {
  if (e.key === 'Enter') {
    chatEventEmitter();
  }
  // Emit typing... status
  socket.emit('typing', {
    jwt: getCookie('jwt'),
  });
});

// hide typing status is every 4 sec
setInterval(e => {
  typingStatus.style.display = 'none';
}, 4000);

// get message and write it to window
socket.on('chat', e => {
  // Play notification sound
  let audio = new Audio('/sounds/all-eyes-on-me.mp3');
  audio.play();

  // write data on chat window
  chatWindow.innerHTML += writeMessage(e);

  // get the last .card, check if sender and reciver is same, and modify
accordingly
  if (e._id === getCookie('_id')) {
    Array.from(document.querySelectorAll('.card')).pop().style.background =
      '#c4c4c469';
  }

  // show the latest chats
  chatWindow.scrollTop = chatWindow.scrollHeight;
});

// typing status reciever
socket.on('typing', e => {
  typingStatus.style.display = 'block';
  nameOfTypers.innerHTML = `${e.name.split(' ')[0]}`;
});

// online count reciever (1sec int)
socket.on('onlineCount', e => {
  onlineCounter.innerHTML = e.count;
});

let oldMessagesContainer = document.getElementById('old-messages');

// Fill old messages in DB
fetch('/messages/' + window.location.pathname.split('/')[2])
  .then(res => res.json())
  .then(res => {
    oldMessagesContainer.innerHTML = ''; // clear container text
    for (let i in res) {
      if (res[i].messageType === 'image') {
        oldMessagesContainer.innerHTML += `
                <div class="card">
                    <div class="user-img">
                        <img src="${res[i].avatar}" alt="">
                    </div>
                    <div class="message-meta">
                        <div class="meta">${res[i].name} ${messageTime(
          res[i].time
        )}</div>
                        <div class="message"><img src="${
                          res[i].imgSrc
                        }" alt="" /></div>
                    </div>
                </div>
            `;
      } else {
        oldMessagesContainer.innerHTML += `
                <div class="card">
                    <div class="user-img">
                        <img src="${res[i].avatar}" alt="">
                    </div>
                    <div class="message-meta">
                        <div class="meta">${res[i].name} ${messageTime(
          res[i].time
        )}</div>
                        <div class="message">
                            ${
                              res[i].message.split('/tts ').length > 1
                                ? res[i].message.split('/tts ')[1]
                                : res[i].message
                            }
                        </div>
                    </div>
                </div>
            `;
      }

      // show the latest chats
      chatWindow.scrollTop = chatWindow.scrollHeight;

      // get the last .card, check if sender and reciver is same, and modify
accordingly
      if (res[i].user_id === getCookie('_id')) {
        Array.from(document.querySelectorAll('.card')).pop().style.background =
          '#c4c4c469';
      }
    }
  });
```

views/: This is the directory where I have stored all the stuffs I need to render a webpage. It basically contains some template file written in handlebars and `express-handlebars` package converts it to regular html.

views/index.hbs: The homepage!

```
<div id="home">
  <div id="login" class="login show">
    <form action="">
      <div class="form-title">Welcome Back!</div>
      <div class="message-box hide"></div>
      <input type="email" name="email" placeholder="Email">
      <input type="password" name="password" placeholder="Password">
      <input type="submit" value="Login">
      <div id="forgot-password">Forgot Password? </div>
      <div id="signup-instead">New Here? Create an Account</div>
    </form>
  </div>
  <div id="signup" class="signup">
    <form action="">
      <div class="form-title">Create a New Account</div>
      <div class="message-box hide"></div>
      <input type="text" name="name" placeholder="Name">
      <input type="email" name="email" placeholder="Email">
      <input type="password" name="password" placeholder="Password">
      <input type="submit" value="Sign Up">
      <div id="login-instead">Already have an account? Login Instead</div>
    </form>
  </div>
  <div id="forgot-password-form" class="forgot-password-form">
    <form action="">
      <div class="form-title">Reset Password</div>
      <div class="message-box error-message">
        This feature is abandoned for now. I don't want to work on it for the time
being.
        Filling this form and submitting won't work.
      </div>
      <input type="email" name="name" placeholder="Email" disabled>
      <input type="submit" value="Reset" disabled>
      <div id="back-to-login">Go Back to Login</div>
    </form>
  </div>
</div>
{{> footer}}
{{> verifyEmailModel }}
```

views/chat.hbs: For rendering chat page!

```
<div id="chat">
  <span class="online-count">
    <i class="fas fa-circle" style="color: #00ff00"></i> <span id="online-
count">0</span> Online
  </span>
  <span style="position: fixed; top: 35px; right: 3px; padding: 3px; box-shadow: 0
0 10px 0 lightgray; background: #ffffff77; z-index: 2000">
    <a style="color: #141414" href="/logout">Log Out</a>
  </span>
  <div class="chat-window">
    <div class="hide-typing-status"> <span id="typers"></span> is typing</div>
    <div class="hide-scroll-bar" id="chat-window">
      <div id="old-messages">
        <div class="info">Loading Old Messages.... Please Wait!</div>
      </div>
    </div>
  </div>
  <div class="chat-box">
    <button class="image-share-button" id="image-share-button"><i class="fas fa-
image"></i></button>
    <input type="text" autofocus name="" id="message-input" placeholder="Start
Typing...">
    <button id="send-message">Send</button>
  </div>
</div>


{{> imgShareModel }}
```

views/emailVerification.hbs: This template generates some html codes which could be used to render Email Verification page!

```
<div id="emailVerification">
  <h1>Email Verification</h1>
  <div>
    {{message}} <br><br>
    <code style="background: #141414; color: #fff; padding: 3px 6px; border-
radius: 4px; word-break: break-all">{{ token }}</code>
  </div>
</div>
<br /><br />
For any query, please contact <a
href="mailto:mail@thisisabdus.dev">mail@thisisabdus.dev</a>

<div style="margin-top: 14rem">{{>footer}}</div>
```

views/layouts/: For storing different layouts.

views/layouts/main.hbs: Main(and default) layout.

```html
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <link rel="stylesheet"
href="https://use.fontawesome.com/releases/v5.5.0/css/all.css" integrity="sha384-
B4dIYHKNBt8Bc12p+WXckhzcICo0wtJAoU8YZTY5qE0Id1GSseTk6S+L3BlXeVIU"
    crossorigin="anonymous">
  <link rel="stylesheet" href="/css/main.css">
  <title>Socket APP</title>
</head>

<body>
  {{{ body }}}

  <script src="//cdnjs.cloudflare.com/ajax/libs/socket.io/2.0.3/socket.io.js">
</script>
  <script src="//code.responsivevoice.org/responsivevoice.js"></script>
  <script src="/js/functions.js"></script>
  <script src="/js/main.js"></script>
  <script src="/js/imageShare.js"></script>
</body>

</html>
```

views/layouts/index.hbs: This is the layout I've used for homepage.

```html
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <link rel="stylesheet"
href="https://use.fontawesome.com/releases/v5.5.0/css/all.css" integrity="sha384-
B4dIYHKNBt8Bc12p+WXckhzcICo0wtJAoU8YZTY5qE0Id1GSseTk6S+L3BlXeVIU"
    crossorigin="anonymous">
  <link rel="stylesheet" href="/css/main.css">
  <title>Socket APP</title>
</head>

<body id="index">
  {{{ body }}}

  <script src="/js/homepage.js"></script>
</body>

</html>
```

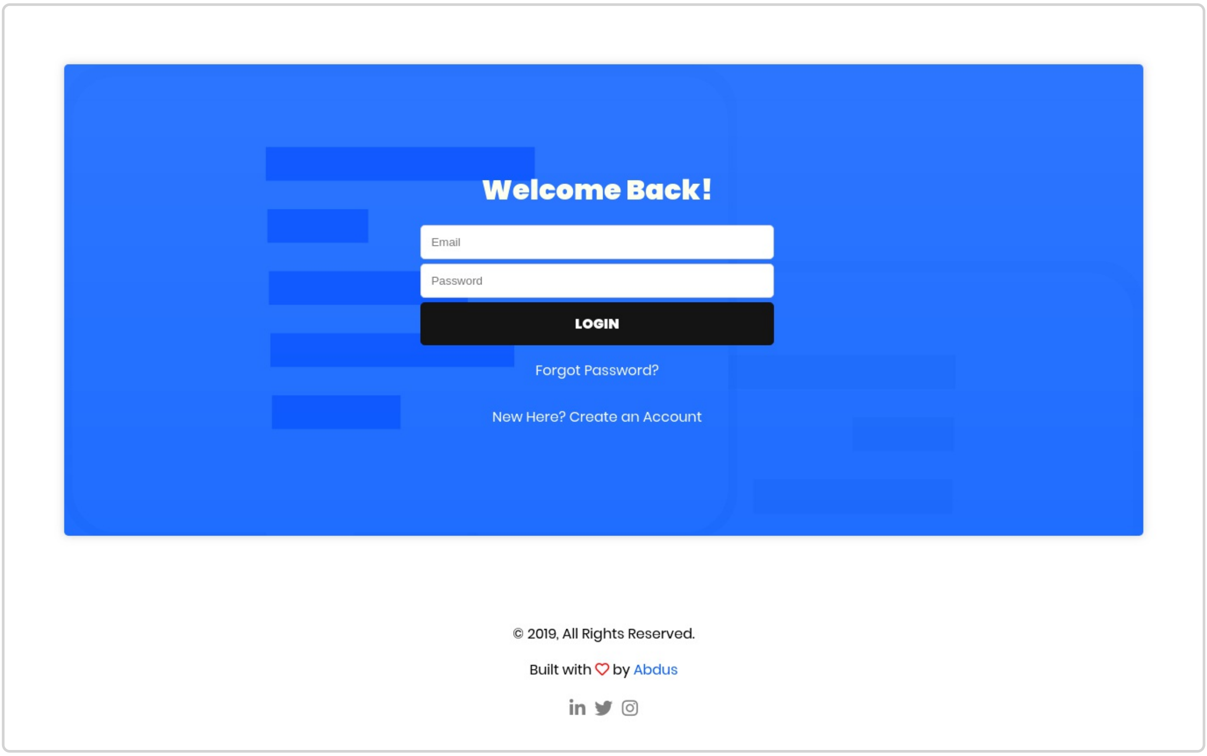
views/layouts/emailVerified.hbs: Renders a nice webpage once the user verifies email.

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <link rel="stylesheet"
href="https://use.fontawesome.com/releases/v5.5.0/css/all.css" integrity="sha384-
B4dIYHKNBt8Bc12p+WXckhzcICo0wtJAoU8YZTY5qE0Id1GSseTk6S+L3BlXeVIU"
    crossorigin="anonymous">
  <link rel="stylesheet" href="/css/main.css">
  <title>Email Verification</title>
</head>

<body style="padding: 1rem">
  {{{ body }}}
</body>

</html>
```

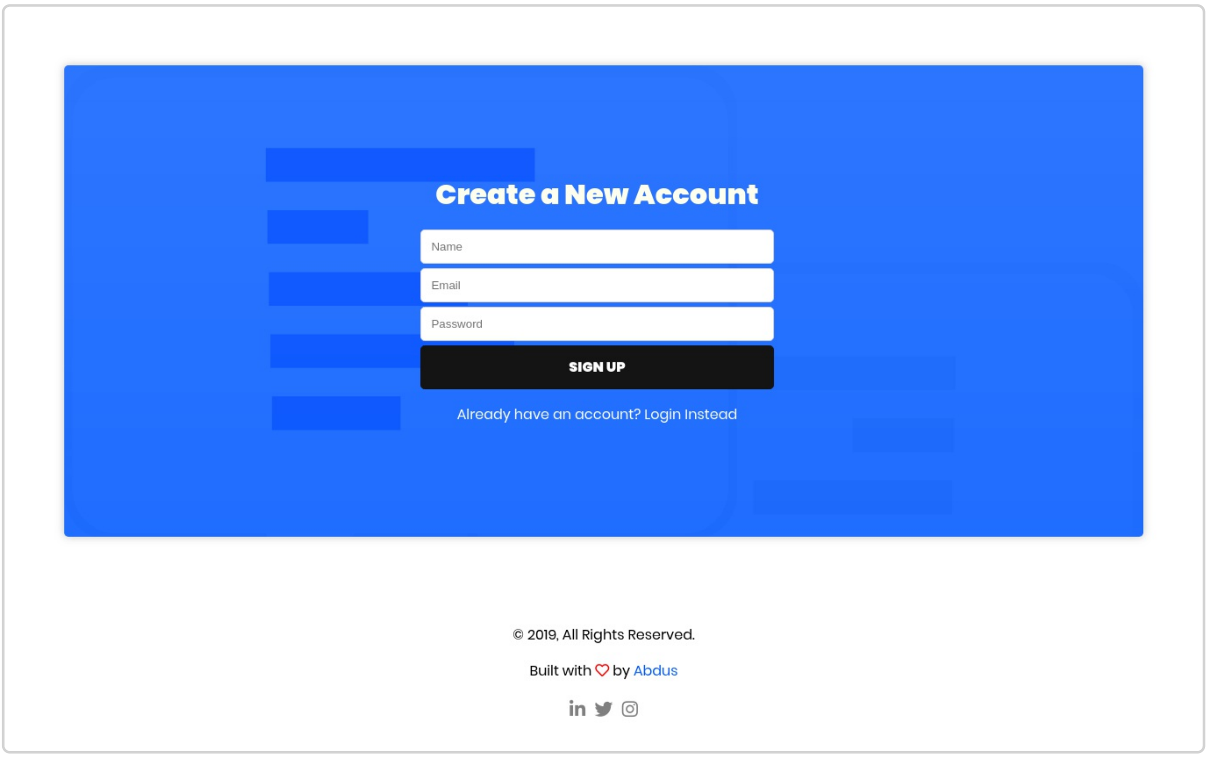
Snapshots

Here are a few snapshots form the application.

- **Login Page**



- **Signup Page**



Create a New Account

Name

Email

Password

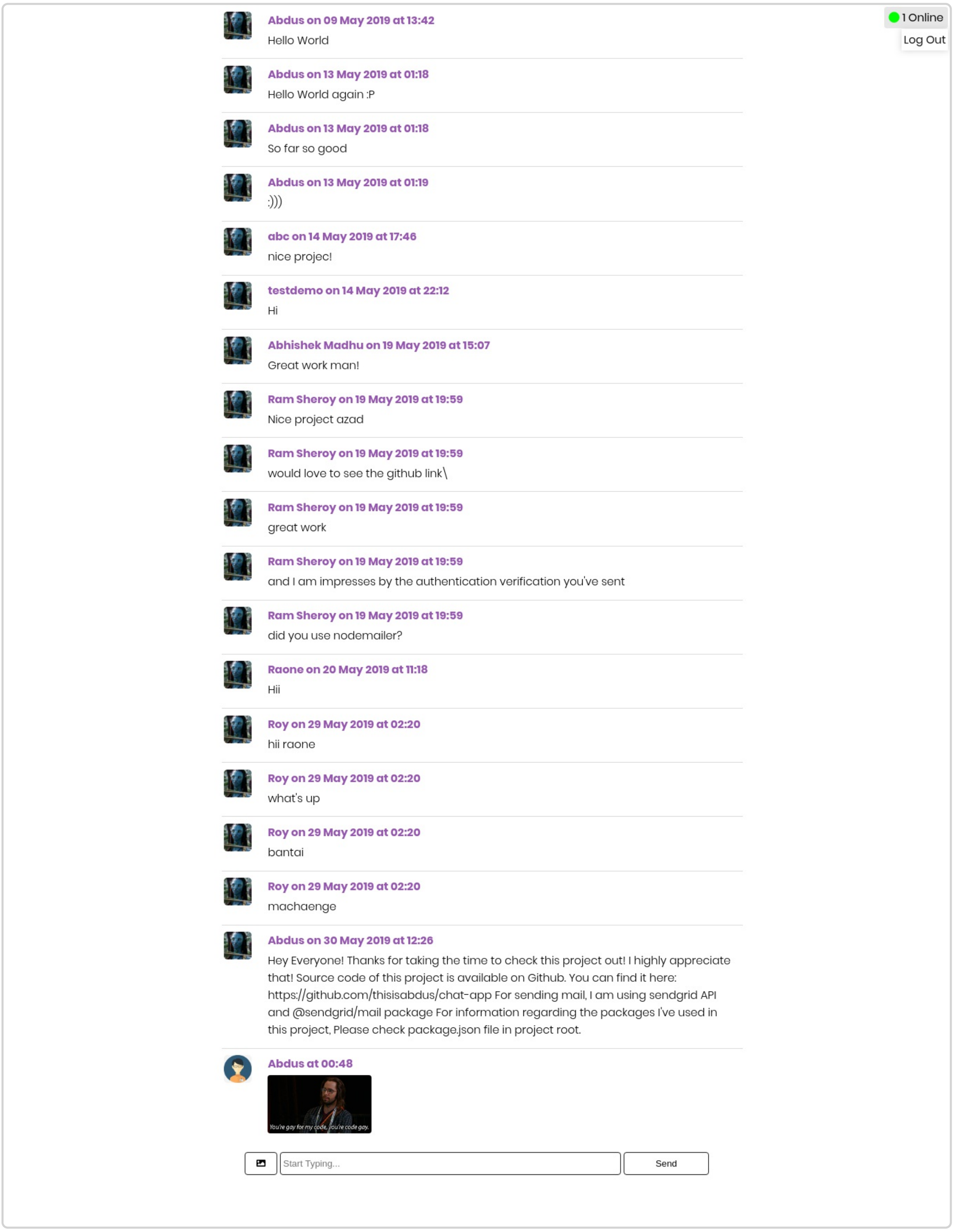
SIGN UP

Already have an account? Login Instead

© 2019, All Rights Reserved.

Built with ♡ by Abdus

- **Main Chat Window**



Abdus on 09 May 2019 at 13:42
Hello World

Abdus on 13 May 2019 at 01:18
Hello World again :P

Abdus on 13 May 2019 at 01:18
So far so good

Abdus on 13 May 2019 at 01:19
:)))

abc on 14 May 2019 at 17:46
nice projec!

testdemo on 14 May 2019 at 22:12
Hi

Abhishek Madhu on 19 May 2019 at 15:07
Great work man!

Ram Sheroy on 19 May 2019 at 19:59
Nice project azad

Ram Sheroy on 19 May 2019 at 19:59
would love to see the github link\

Ram Sheroy on 19 May 2019 at 19:59
great work

Ram Sheroy on 19 May 2019 at 19:59
and I am impresses by the authentication verification you've sent

Ram Sheroy on 19 May 2019 at 19:59
did you use nodemailer?

Raone on 20 May 2019 at 11:18
Hii

Roy on 29 May 2019 at 02:20
hii raone

Roy on 29 May 2019 at 02:20
what's up

Roy on 29 May 2019 at 02:20
bantai

Roy on 29 May 2019 at 02:20
machaenge

Abdus on 30 May 2019 at 12:26
Hey Everyone! Thanks for taking the time to check this project out! I highly appreciate that! Source code of this project is available on Github. You can find it here: https://github.com/thisisabdus/chat-app For sending mail, I am using sendgrid API and @sendgrid/mail package For information regarding the packages I've used in this project, Please check package.json file in project root.

Abdus at 00:48