**DBS students chatting app Report**

**Project Introduction:**

**DBS** chatting app is created to make a secure and table chatting web with

Responsive UI.To implement security of users we are using different algorithms to store password and with 2 factor authentication for users. We have commented the code as well to make sure anybody else can understand easily, to add a level of clean UI (user interface) or a solid app structure function over a secure broadcast network we are using Bootstrap5 the latest version of bootstrap, is an effort for a more modern approach to internet security on a communication medium. The Implementation of DBS is based on a new but effective set up of Python Django, JavaScript, Bootstrap, and SQLite where Bootstrap is for the app structure and UI (user interface) tool, Python for the server setup, Django for better backend and to provide a new technologies-based security to the App.

**Aims and Objectives:**

Just like other social apps, you have a list of conversations with all users, that you’re engaged in. our objective is to make it more secure and we have tried our best to make it better and secure by adding **Email Verification, user Authentication, user Authorizations (as Django handles it in a very good manner) and Password’s security.** we are using SHA256 hash to secure our password that is stored in our database.

**Technologies and Dependencies we are using:**

We are Using Python and Django for DBS Chatting App. We used DRF and JavaScript to make it more perfect and scalable.

**Language:**

1. **Backend:**
   1. Python
      1. :
         1. We are using Python best web Framework to create Chatting app
         2. **Toolkit:**
            1. We are using Django Toolkit for creating rest Api’s for messages.
2. **Frontend:**
   1. Html
   2. CSS
   3. Bootstrap5 for responsiveness
   4. JavaScript to make app as single page in chatting and messaging work.

**Security Work:**

1. **PBKDF2 Algorithm:**
   1. For Users Authentication we are using **PBKDF2 algorithm with a SHA256 hash**, a password stretching mechanism recommended by NIST. This should be sufficient for most users: it's quite secure, requiring massive amounts of computing time to break.
2. **Authentication:**
   1. we are using Django built int users’ authentication and authorization functionalities. It is based on **Django Session Framework.** Which helps to make authorization easy and making login secure instead of doing it manually.
3. **Authorization:**
   1. We are using Django Users Management to authorize Admin and other staff users as well. By this no body gets extra or less rights to do in web app, like:
      1. Users Management
      2. Messages App Management
4. **Two Factor Authentication:**
   1. To make sure about user authentication we have added extra layer of security as 2 factor authentication by email. Whenever user signup or register for the first time he has to add the email verification code that is sent by our Django App.
   2. Otherwise, user can see the message and form to verify first and then can chat to other users

**Use case Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| Level 0 | Level 1 | Level 2 | actor |
| Chat application | Authentication system | Register Login logout | user |
| Chat  application | Chat form | Send message | user |
| Chat  application | maintenance | User’s profile  Data base | admin |

**Requirements Specifications:**

|  |  |  |
| --- | --- | --- |
| NAME | FUNCT IONAL | DESCRIPTION |
| User  registration | Yes | Functionality for user to create account |
| Login | Yes | Functionality for user to get access |
| Logout | Yes | Functionality for user to delete session |
| Send message | Yes | To send message |
| Reliability |  | Trusted by users |
| Supportability |  | Being supportive |
| portability |  | Application runs in different systems |

**Authentication Service:**

Registration

Login

User

Logout

**Live Testing:**

We have tested it on PythonAnywhere.com as well it’s providing us a free 3 months hosting space to test the things on it.

**Live Website Link:**

[**https://abdullah786.pythonanywhere.com/**](https://abdullah786.pythonanywhere.com/)