# Online grievance redressal system

## Objective:

Grievance Redressal System is an online platform to receive and act on complaints reported by students of private or public institutions, enabling prompt actions on any issue raised by them and to avail services more effectively.

## Users of the System:

1. Admin
2. Employee(Developer)
3. User

## Functional Requirements:

- Users should be able to create new account, log-in to their existing accounts which will give them the authority to use the services provided by the system.
- Authenticated users should be able to issue complaints, check complaint status.
- Employee can log-in to their accounts as created by administrator.
- Employee can access all the complaints, suggestions from users.
- Give response to complaints with activity reports.
- Admin can Create, and monitor accounts of authorities
- **An employee can manage a maximum of 10 complaints per day.**

While the above ones are the basic functional features expected, the below ones can be nice to have add-on features:

- Online Surveys.
- Facility to upload photos of the complaint. for eg, garbage problem.
- Email integration for intimating new compliant.
- Multi-factor authentication for the sign-in process

## Output/ Post Condition:

- Queries and responses answered report
- Escalation reports based on responsibility matrix
- Standalone application / Deployed in an app Container
- Monthly Report

Non-Functional Requirements:

| | |
|---|---|
| **Security** | • App Platform –UserName/Password-Based Credentials<br>• Sensitive data has to be categorized and stored in a secure manner<br>• Secure connection for transmission of any data |
| **Performance** | • Peak Load Performance<br>• Online grievance redressal system -< 3 Sec<br>• Admin application < 2 Sec<br>• Non Peak Load Performance<br>• Online grievance redressal system < 2 Sec |

| | |
|---|---|
| | • Admin Application < 2 Sec |
| **Availability** | • 99.99 % Availability |
| **Standard Features** | • Scalability<br>• Maintainability<br>• Usability<br>• Availability<br>• Failover |
| **Logging & Auditing** | • The system should support logging(app/web/DB) & auditing at all levels |
| **Monitoring** | • Should be able to monitor via as-is enterprise monitoring tools |
| **Cloud** | • The Solution should be made Cloud-ready and should have a minimum impact when moving away to Cloud infrastructure |
| **Browser Compatible** | • IE 7+<br>• Mozilla Firefox Latest – 15<br>• Google Chrome Latest – 20<br>• Mobile Ready |

## Technology Stack

| | |
|---|---|
| Front End | React<br>Google Material Design<br>Bootstrap / Bulma |
| Server Side | Spring Boot<br>Spring Web (Rest Controller)<br>Spring Security<br>Spring AOP<br>Spring Hibernate |
| Core Platform | OpenJDK 11 |
| Database | MySQL or H2 |

**Platform Pre-requisites (Do's and Don'ts):**

1. The React app should run in port 8081. Do not run the React app in the port: 3000.
2. Spring boot app should run in port 8080.

**Key points to remember:**

1. The id (for frontend) and attributes(backend) mentioned in the SRS should not be modified at any cost. Failing to do may fail test cases.
2. Remember to check the screenshots provided with the SRS. Strictly adhere to id mapping and attribute mapping. Failing to do may fail test cases.
3. Strictly adhere to the proper project scaffolding (Folder structure), coding conventions, method definitions and return types.
4. Adhere strictly to the endpoints given below.

**Application assumptions:**

1. The login page should be the first page rendered when the application loads.
2. Manual routing should be restricted by using AuthGaurd by implementing the canActivate interface. For example, if the user enters as http://localhost:3000/signup or http://localhost:3000/home the page should not navigate to the corresponding page instead it should redirect to the login page.
3. Unless logged into the system, the user cannot navigate to any other pages.
4. Logging out must again redirect to the login page.
5. To navigate to the admin side, you can store a user type as admin in the database with a username and password as admin.
6. Use admin/admin as the username and password to navigate to the admin dashboard.

**Validations:**

1. Basic email validation should be performed.
2. Basic mobile validation should be performed.

**Project Tasks:**

**API Endpoints:**

| USER | | | |
|---|---|---|---|
| Action | URL | Method | Response |
| Login | /login | POST | true/false |
| Signup | /signup | POST | True/false |
| Add Compliant | /add Compliant | POST | Compliant added |
| List logged in user Compliant | /compliant/{id} | GET | Array of Compliant |
| Update Compliant | /compliant/{id} | PUT | Compliant Updated. |
| Update Status | /status/{id} | PUT | Status Updated. |
| ADMIN | | | |
| Action | URL | Method | Response |
| Get All Compliant | /admin | GET | Array of Compliant |
| Add Employee | /admin/addEmployee | POST | Employee added |
| Update Employee | /admin/updateEmployee /{id} | PUT | Employee Updated |
| Delete Developer | /admin/deleteEmployee /{id} | DELETE | Delete Successful |
| Map Compliant | /admin/mapCompliant /{issueId} | POST | Save the Changes |
| Update Compliant | /admin/updateCompliant /{id} | PUT | Update Success |

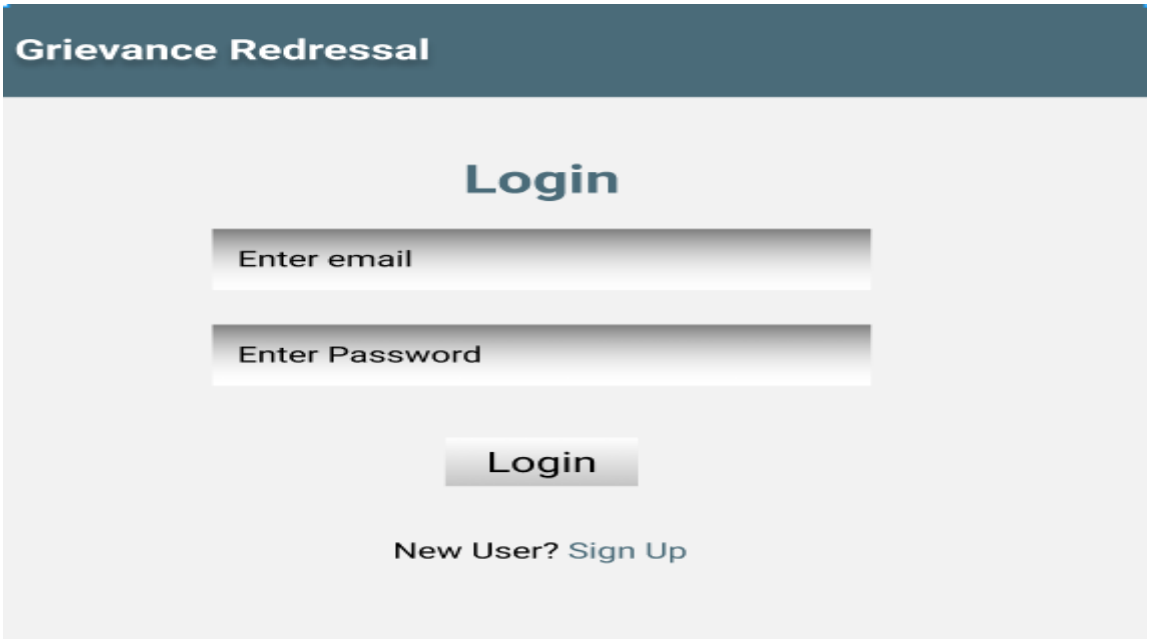
| | | | |
|---|---|---|---|
| Get All Opened Status | /admin/openStatus | GET | Array of Status |
| Get All Closed Status | /admin/closedStatus | GET | Array of Status |

**Frontend:**

**Customer:**

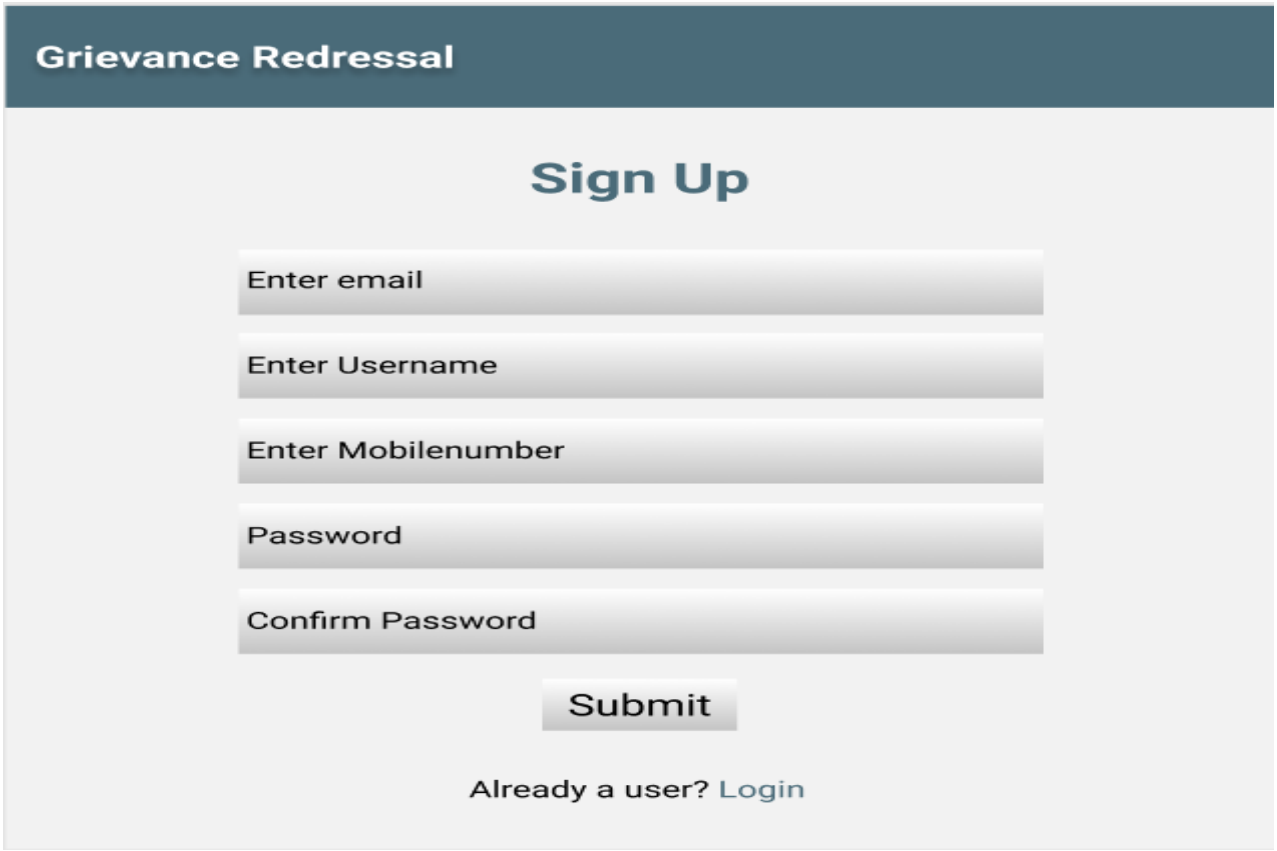
**Login:**

Output Screenshot:



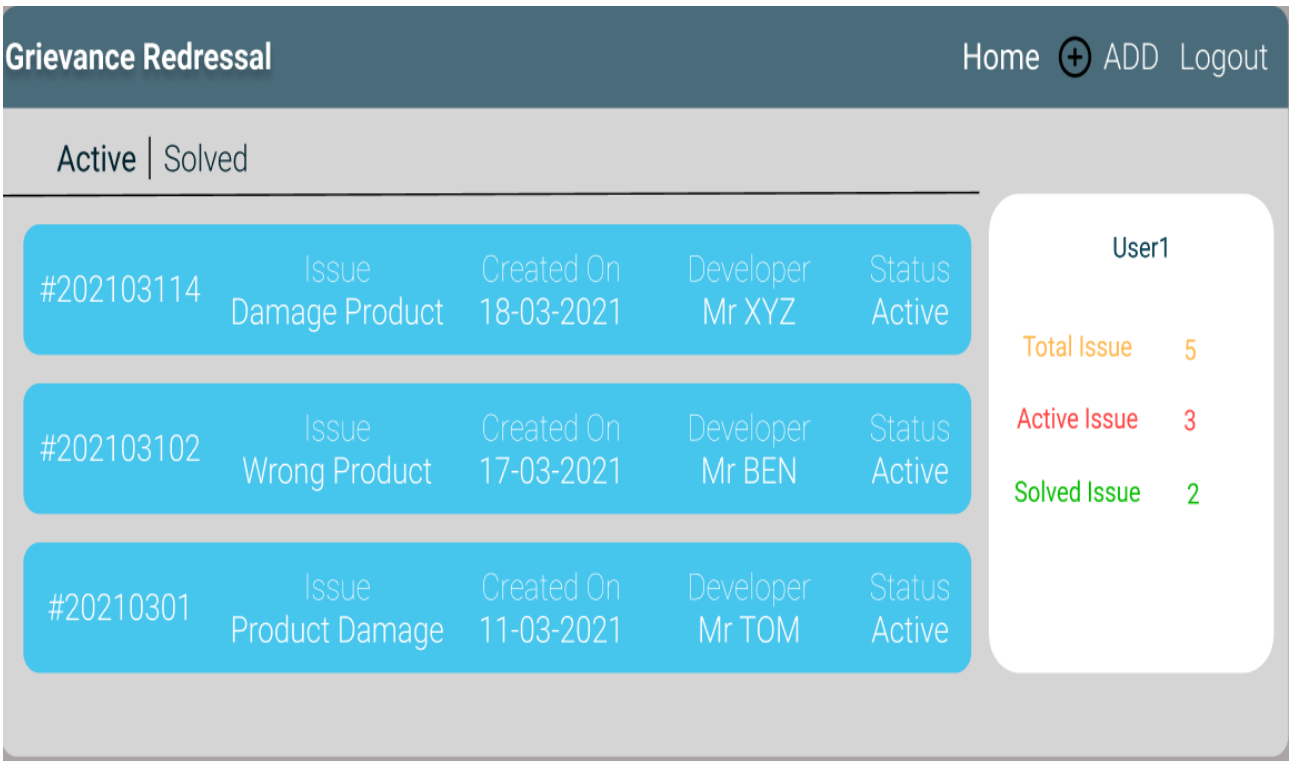

**Signup:**

Output Screenshot:



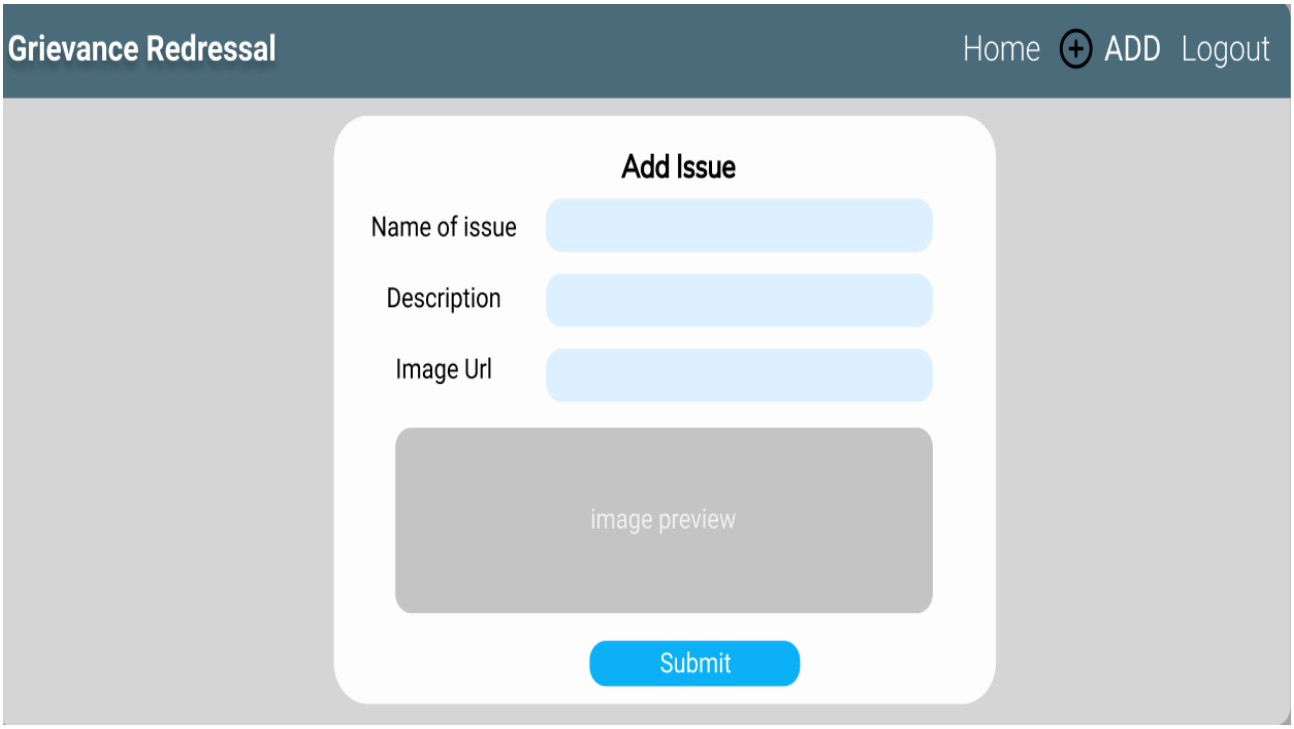

**Home:**

Output Screenshot:




**Add Issue:**

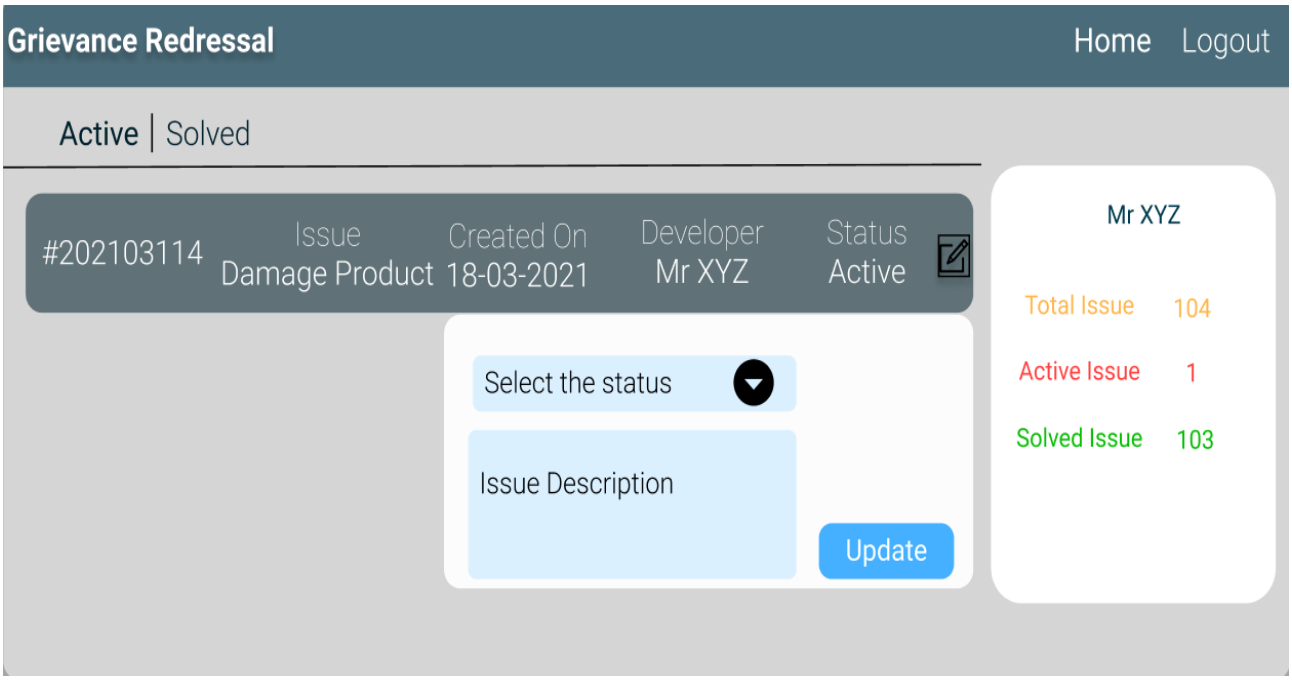
Output Screenshot:




**Developer:**

**Home:**

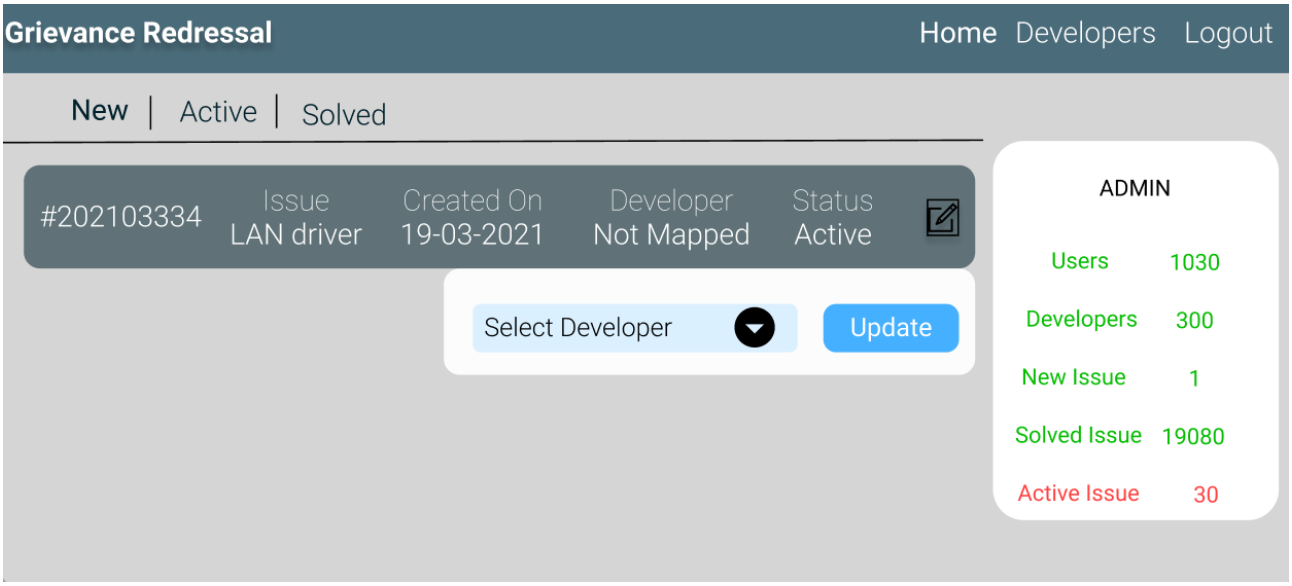
Output Screenshot:




**Admin:**

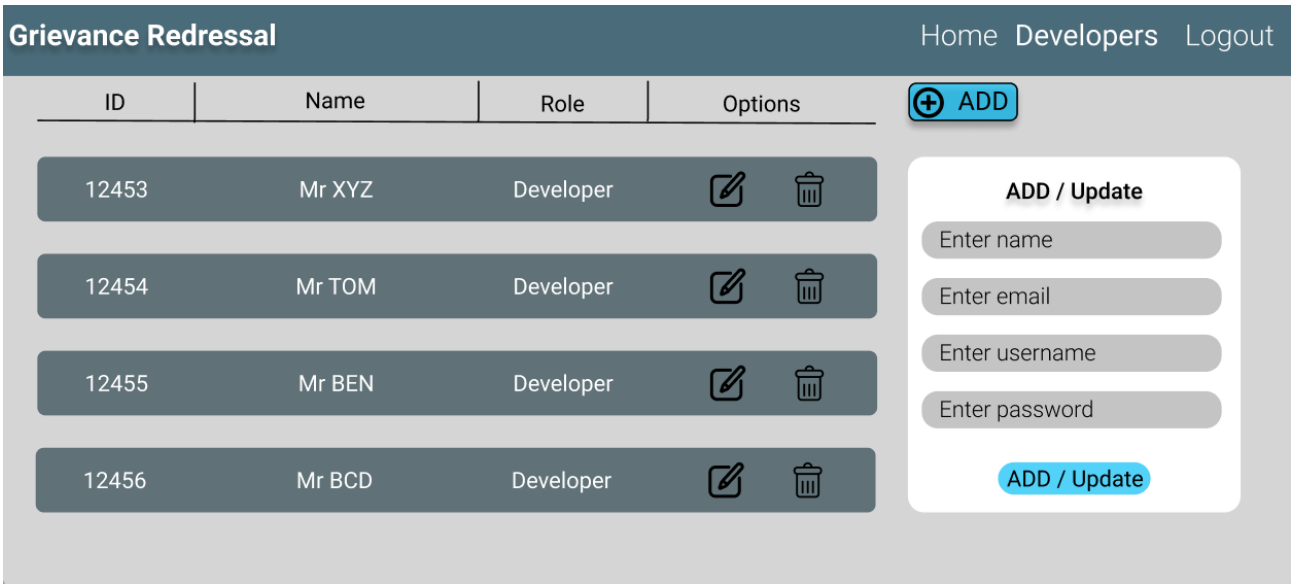
**Home:**

Output Screenshot:




**Manage User:**

Output Screenshot:




**Backend:**

**Class and Method description:**

**Model Layer:**

1. UserModel: This class stores the user type (Admin or the Employee or the User) and all user information.
    a. Attributes:
        i. email: String
        ii. password: String
        iii. username: String
        iv. mobileNumber: String
        v. active: Boolean
        vi. role: String
    b. Methods: -

2. LoginModel: This class contains the email and password of the user.
    a. Attributes:
        i. email: String
        ii. password: String
    b. Methods: -

3. CompliantModel: This class stores the details of the Issue.
    a. Attributes:
        i. compliantId: String
        ii. compliantName: String
        iii. createdOn: Date
        iv. createdBy: UserModel
        v. resolvedBy: UserModel
        vi. status: StatusModel
    b. Methods: -
4. StatusModel: This is hold the Status of all the Issues.
    a. Attributes:
        i. statusId: String
        ii. status: String
        iii. statusDesc: Desc
    b. Methods: -

**Controller Layer:**

1. SignupController: This class control the user signup
    a. Attributes: -
    b. Methods:
        i. saveUser(UserModel user): This method helps the user to create account in the database and return true or false based on the database transaction
2. UserController: This calss controls the add/edit/update/view the users.
    a. Attributes: -
    b. Methods:
        i. List<userModel> getUsers(): This method helps the admin to fetch all users from the database.
        ii. UserModel userDataById(String id): This method helps the admin to retrieve a user from the database based on the user id.
        iii. userEditSave(UserModel data): This method helps the admin to edit a user and save it to the database.
        iv. userSave(UserModel data): This method helps the admin to add a new user to the database.
        v. UserDelete(UserDelete String id): This method helps the admin to delete a user from the database.
3. LoginController: This class controls the user login.
    a. Attributes: -
    b. Methods:
        i. checkUser(LoginModel data): This method helps the user to sign up for the application and must return true or false
4. CompliantModel: This class controls the add/edit/update/view Issue.
    a. Attributes: -
    b. Methods:
        i. List<CompliantModel > getIssue(): This method helps the admin to fetch all Compliant from the database.
        ii. List<CompliantModel> getHomeIssue(): This method helps to retrieve all the Compliant from the database.
        iii. CompliantModel IssueEditData(String id): This method helps to retrieve a Compliant from the database based on the Compliant Id.
        iv. compliantEditSave(CompliantModel data): This method helps to edit a Compliant and save it to the database.

v. compliantSave(CompliantModel data): This method helps to add a new Compliant to the database.

vi. compliantDelete (String id): This method helps to delete a Compliant from the database.

5. StatusController: This class helps to manage the open / closed issues.
    a. Attributes: -
    b. Methods:
        i. mapCompliant(String compliantId): This method helps the map the issue with status.
        ii. List<StatusModel> showOpenStaus(): This method helps to view the all opened status
        iii. List<StatusModel> showClosedStaus(): This method helps to view the all Closed status.