MVP for a Citizen Complaints and Engagement System documantation.

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Project structure

The project is organized into two main directories: one for the backend and another for the frontend

```
CITIZEN-COMPLAINT-SYSTEM/
│
├── backend/
│   ├── 2FA/
│   ├── configriation/
│   ├── middlewares/
│   ├── models/
│   ├── node_modules/
│   ├── routers/
│   ├── scripts/
│   ├── .env
│   ├── package.json
│   ├── package-lock.json
│   └── server.js
│
├── Citizen-frontend/
│   ├── node_modules/
│   ├── public/
│   └── src/
│       ├── assets/
│       ├── components/
│       │   ├── citizensPage/
│       │   ├── Dashboards/
│       │   ├── loginregister/
│     │   ├── protection/
│     │   └── resetpassword/
│     ├── App.css
│     └── App.js
```

1. Backend (`/backend`)

Handles server-side logic, API routes, authentication, and database interaction using **Node.js** and **Express.js**.

Main Folders and Files:

- **2FA/** – Handles two-factor authentication logic.
- **configriation/** – Contains configuration files such as database connection settings and environment variables.
- **middlewares/** – Includes custom middleware functions used across the backend (e.g., authentication checks).
- **models/** – Defines Mongoose schemas for MongoDB collections.
- **routers/** – Contains all Express route handlers for different resources and features.
- **scripts/** – include custom scripts for creating admin role and user etc.
- **.env** – Environment variables file tostore configurations.
- **server.js** – Entry point of the backend server.

2. Frontend (/Citizen-frontend)

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Built using **React.js**, this directory handles the client-side interface and communication with backend APIs.

Substructure:

- **node_modules/** – Automatically generated folder that stores frontend dependencies.
- **src/** – Main source directory containing all React components and styles.
    - **assets/** – Stores static assets such as images.
    - **components/**
        - **citizensPage/** – UI components specifically for citizen interactions.
        - **Dashboards/** – Dashboard interfaces for different user roles admin and agencies.
        - **loginregister/** – Login components.

        - **protection/** – Components for route protection
        - **resetpassword/** – Components for handling password reset functionality.
    - **App.js** – Root component that defines main routing and layout.
    - **App.css** – Global stylesheet for the application.

I. Project Overview:

MVP (Minimum Viable Product) of a citizen complaints and engagement system focuses on the essential features needed to validate its core functionality and gather user feedback.

- **Solution:**
  A web-based platform that allows citizens to submit complaints, track their status, and receive updates.
- The complaint will be on its appropriate government agency based on its category

II. Core Features (MVP):

1. **1. Citizen features:**
    - **Form:** A simple form to capture complaint details (eg,person information, location, complaint description ,etc).
    - **Submission Tracking:** A system to generate a unique complaint ID for each submission and send it to citizen's(user's) email for use it later to track complaints updates. Citizens can see the agency's **response** when they track their complaint.
2. **2. Admin Dashboard Features:**
    - **Home:** A overview page displaying total complaints ,number of pending ,in progress and resolved complaints, with filters by category, location, and status.
    - **Complaint Details: Showing** pending ,in progress and resolved complaints, with filters by category, location,,date-range and status and admin will be able to View detailed information about each complaint, including submitted details, and status updates etc.

    - **Agencies:** Here is where admin will be able to register government agency user who will supposed to respond complaints based on his/her category.
    - **User roles**: Admin is able to perform all CRUD operations of role and assign privileges to the particular role.

- **Data Visualization:** Basic charts and graphs to visualize complaint trends. Track the number of complaints submitted per month with classified on categories, location,etc

3. **3 Agency Dashboard:**

- **Home:** A overview page displaying total complaints ,number of pending ,in progress and resolved complaints, based on category .
- **Complaint :**View detailed information about each complaint, including submitted details, and be able to respond it and updated status.
- Agencies can **view only the complaints relevant to their category**.
- Agencies can **update the complaint status** and **add a response**.

Common Features for admin and agencies:

Profile management: User has an account can updated their profile data updating password , enable or disable 2-factor authentication , etc

III. Development Approach:

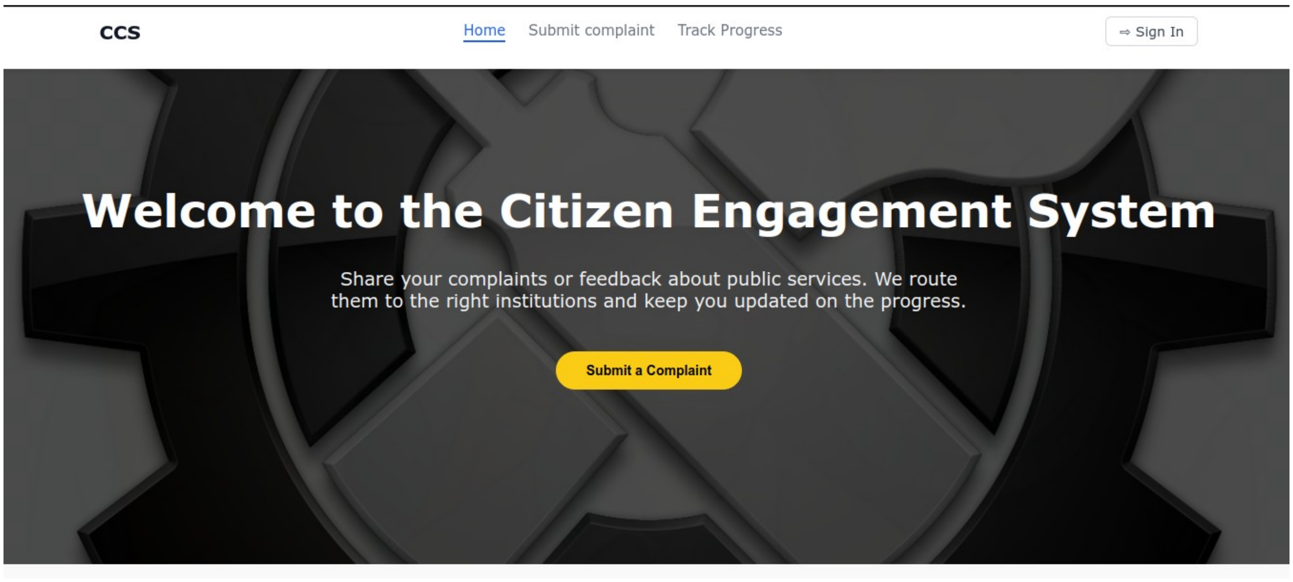
- **• Technologies Used:**
- **Frontend:** Developed using React.js, along with HTML, CSS, and JavaScript to create a responsive and interactive user interface.
- **Backend:** Implemented using Node.js with Express.js to handle server-side logic and API routes.
- **Database:** MongoDB was used as the primary database, with Mongoose for schema modeling and data interaction.

• Deployment:

- **Frontend:** Deployed on **Vercel**
- **Backend:** Hosted on **Render**
- **Database: MongoDB Atlas**

Sample UI

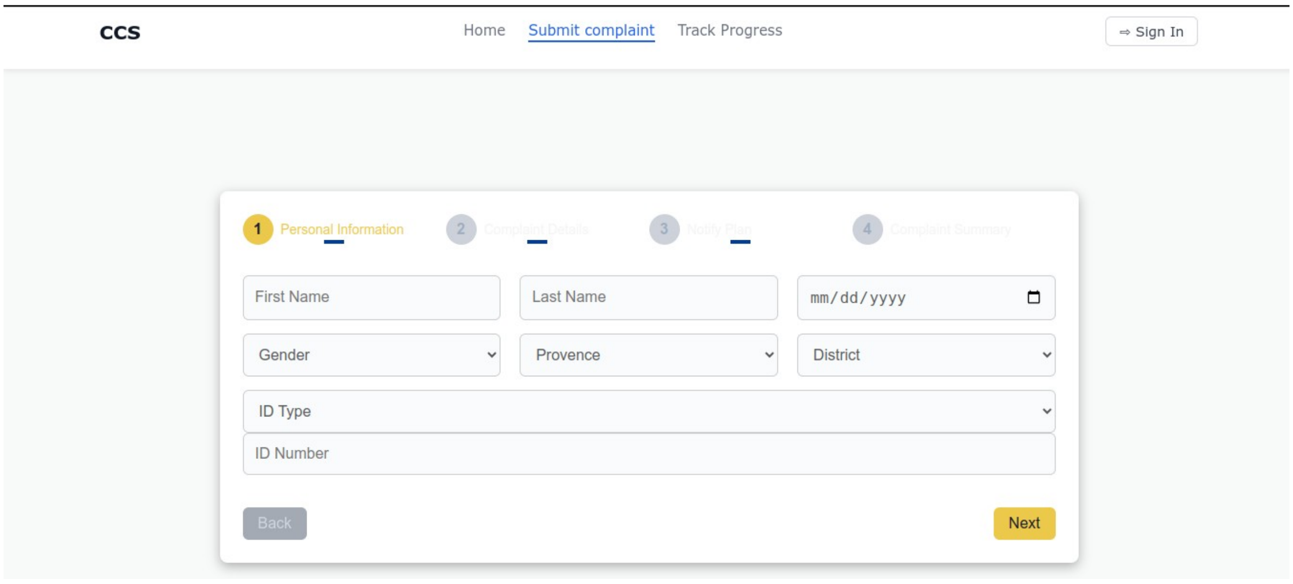
1.This home page:



Welcome to the Citizen Engagement System

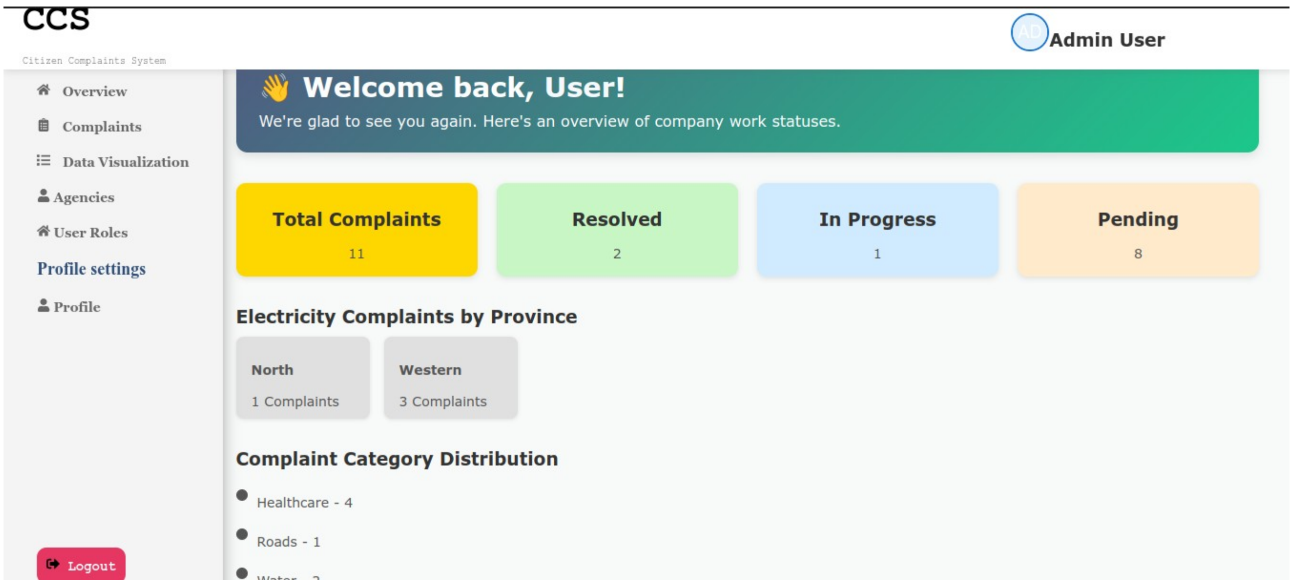
Share your complaints or feedback about public services. We route them to the right institutions and keep you updated on the progress.

2.page found when submit complaint clicked ,



then follow the process to to submit complaint

3.Admin dashboard show home page with complaints summary



CCS

Citizen Complaints System

AD Admin User

- Overview
- Complaints
- Data Visualization
- Agencies
- User Roles
- Profile settings
- Profile

Logout

👋 Welcome back, User!

We're glad to see you again. Here's an overview of company work statuses.

Total Complaints	Resolved	In Progress	Pending
11	2	1	8

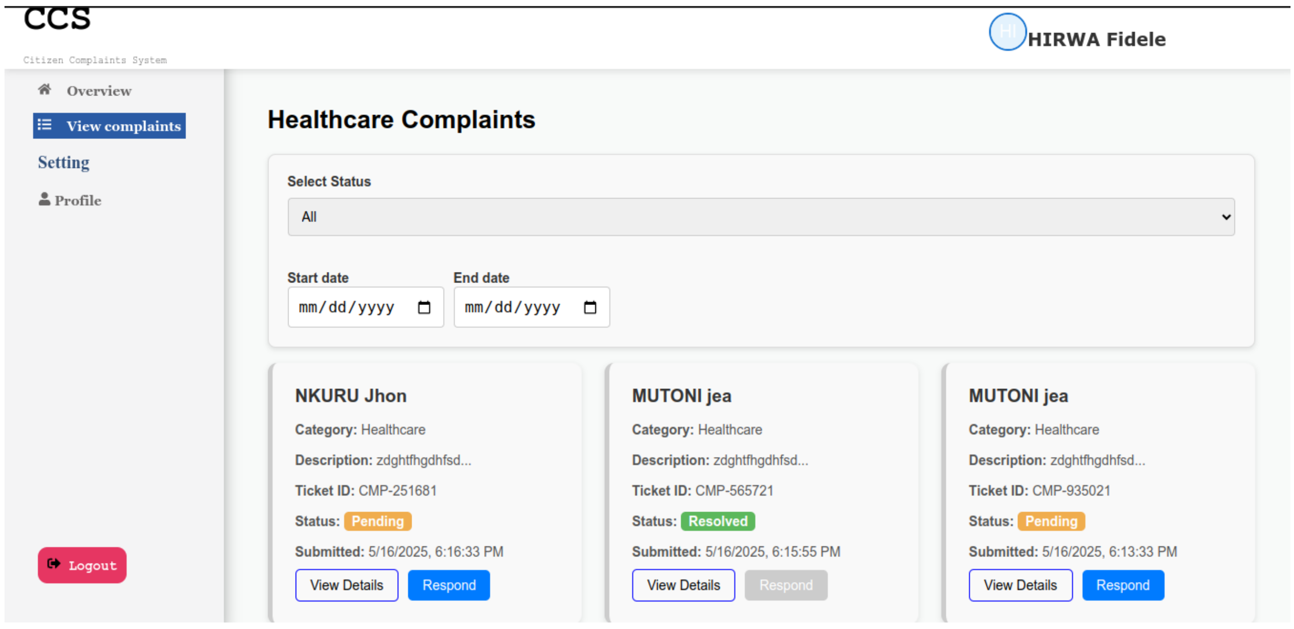
Electricity Complaints by Province

North	Western
1 Complaints	3 Complaints

Complaint Category Distribution

- Healthcare - 4
- Roads - 1
- Water - 2

4. Agencies Dashboard show coming sample complaints on Healthcare category



CCS

Citizen Complaints System

HI HIRWA Fidele

- Overview
- View complaints
- Setting
- Profile

Logout

Healthcare Complaints

Select Status: All

Start date: mm/dd/yyyy

End date: mm/dd/yyyy

NKURU Jhon
Category: Healthcare
Description: zdghtfhgdhfsd...
Ticket ID: CMP-251681
Status: Pending
Submitted: 5/16/2025, 6:16:33 PM
View Details | Respond

MUTONI jea
Category: Healthcare
Description: zdghtfhgdhfsd...
Ticket ID: CMP-565721
Status: Resolved
Submitted: 5/16/2025, 6:15:55 PM
View Details | Respond

MUTONI jea
Category: Healthcare
Description: zdghtfhgdhfsd...
Ticket ID: CMP-935021
Status: Pending
Submitted: 5/16/2025, 6:13:33 PM
View Details | Respond