

GRIEVEASE : MAKING GRIEVANCE SUBMISSION AND TRACKING EASY WHILE MAPPING GOVERNMENT BENEFITS.

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I. ABSTRACT

For a number of citizens it is even hard to decipher and to take advantage of the right government programmes: information is scattered, eligibility rules are complicated, and there is no support to find the right programme. Traditionally, searching has meant a person needing to go through the laborious process of searching for the information available at their local government office. To address this issue, we have created a Government Scheme Recommendation System which is an online information system that contains intelligent user profiles, data driven recommendations and grievance management capabilities.

The frontend design is through a user portal and a chatbot UI to allow a natural flow and conversation for the citizens to enter their details, ask questions and lodge a grievance. The backend, which is an API server, pulls together profiles and scheme data from a MySQL User and Schemes database. It pulls

all this data together to build a unified XGBoost based machine learning model to predict and recommend schemes to really facilitate the discovery of schemes in real-time.

In one configuration, there is a robust grievance management module, which is supported by Status Tracker and Grievance Handler, assessment tools such as Fairlearn and AIF360 to help assure a transparent and fair process of handling and resolution of grievances. This process is already organized much like a structured pathway of a software development lifecycle (SDLC); requirements gathering, system design, development, testing and deployment.

It gives a more personalized, transparent and data driven experience to citizens to find out about schemes and lodge grievances over the existing system of manual processes. The objective is to render the government welfare program more democratic and citizens can contribute to it and make sure it serves people in a manner that ameliorates its services through automation.

Keywords: Government Scheme Recommendation, Machine Learning Prediction, Citizen Grievance Management, Fairness Evaluation, Web Application for Public Services, AI in Governance

II. INTRODUCTION

Government welfare schemes serve as a fundamental tool to support all citizens and promote inclusive development opportunities. However, Locating appropriate government schemes and their accessibility presents challenges because information exists across various sources and eligibility requirements are complex and there is no personal support. Generally, Citizens have traditionally depended on manual methods which include word of mouth and physical visits to government offices that prove to be tedious and inaccurate and delayed. The rise of Digital governance and intelligent web based tools have enhanced citizen access to government welfare schemes.

This research will discuss the design and Of A web-based recommendation system for government schemes will be developed through this research which uses React frontend together with MySQL database backend and XGBoost machine learning to provide intelligent matching between citizens and eligible schemes based on their profiles. This research will be situated in the research that takes place within e-governance and artificial intelligence frameworks for public services and explores standard functionality through user profile management and real-time scheme recommendations and grievance submission and fairness mediation during grievance processes.

The system aims to reduce citizen interactions with welfare services through a system that accepts personal information and enables users to ask domain-specific questions through a chatbot and receive personalized scheme recommendations. The system features a grievance management module which demonstrates transparency in grievance handling and enables real-time status tracking and fairness audit of grievance management processes using various tools (e.g. Fairlearn and AIF360). This research study aims to produce a citizen-driven, data-driven, and transparent solution that improves the reachability, efficiency, and fairness in using government schemes.

III. LITERATURE REVIEW

G-Cloud in Governance 2012:

R. Garg et al. studies G-Cloud's influence on e-Governance. It is understood as a solution that enhances transparency, efficiency, and accessibility in public service delivery competently. The research mainly applied the description of cloud services as the one reducing bureaucratic delay in service delivery to citizens. Outcomes have shown that some other challenges such as inaccessibility to the Internet and digital illiteracy act as constraining factors.

Smart E-Grievance System 2018:

New Delhi, Joshi and B.P/patil, some suggested Smart E-Grievance that will help input image/video/text and geolocation better communication with authorities and personnel in smart cities. The system is using Hadoop MapReduce as input for effective issues in prioritizing complaints.

Blockchain Complaint Redressal 2020:

K.J. Surve and S.S. Patil developed the Smart Complaint Redressal System in which complaints are made, tracked, and recorded using Ethereum smart contracts and stored on IPFS. Users are ensured that the complaints will be tracked by them without any form of tampering. Direct tracking of the complaint's progress was provided to the user in real-time.

ClouT Smart City Platform 2015:

The ClouT platform developed by D. Uckelmann et al. integrates IoT, cloud-based and social media data for citizen-centric smart services. The platform is deployed in different cities such as Santander and Fujisawa and has demonstrated results towards participatory urban planning and safety.

E-Government Websites Evaluation (2005):

Shu et al. are considering the evaluation of e-government sites based on user behavior, navigation efficiency, and information clarity. According to the results, simple and orderly designs yield an increase in satisfaction and participation of citizens.

Sentiment Analysis for the Evaluation of Schemes Machine Learning for Categorization of Complaints (2018):

Y. Wang and L. Liu presented SVM and Naive Bayes models for the automatic categorization of consumer protection complaints. This methodology proved much more efficient and faster processing of the complaints based on the automated categorization.

E-A Models in e-Gov (2013):

M. Kumar and V. Khari evaluated the most promising Enterprise Architecture frameworks for the alignment of e-Gov, namely, TOGAF and Zachman. Dual Mapping with SDLC would ensure efficiency in inter-agency integration and service planning.

Reddit Sentiment Mining (2023):

S. Kumi et al. performed sentiment analysis on Reddit data from Saskatoon Canada to unearth civic issues. The analysis via the BERTopic and SiEBERT models revealed housing and healthcare as the main problems.

Complaint Optimization Algorithm (2019):

M. Heinrichsmeyer et al. have described an algorithm to ease the handling of complaints during the usage phase of the product. The system automated the manual 8D-methods so that quicker responses can be made from recognized past patterns.

V. METHODOLOGY

Government Scheme Recommendation System - Architecture

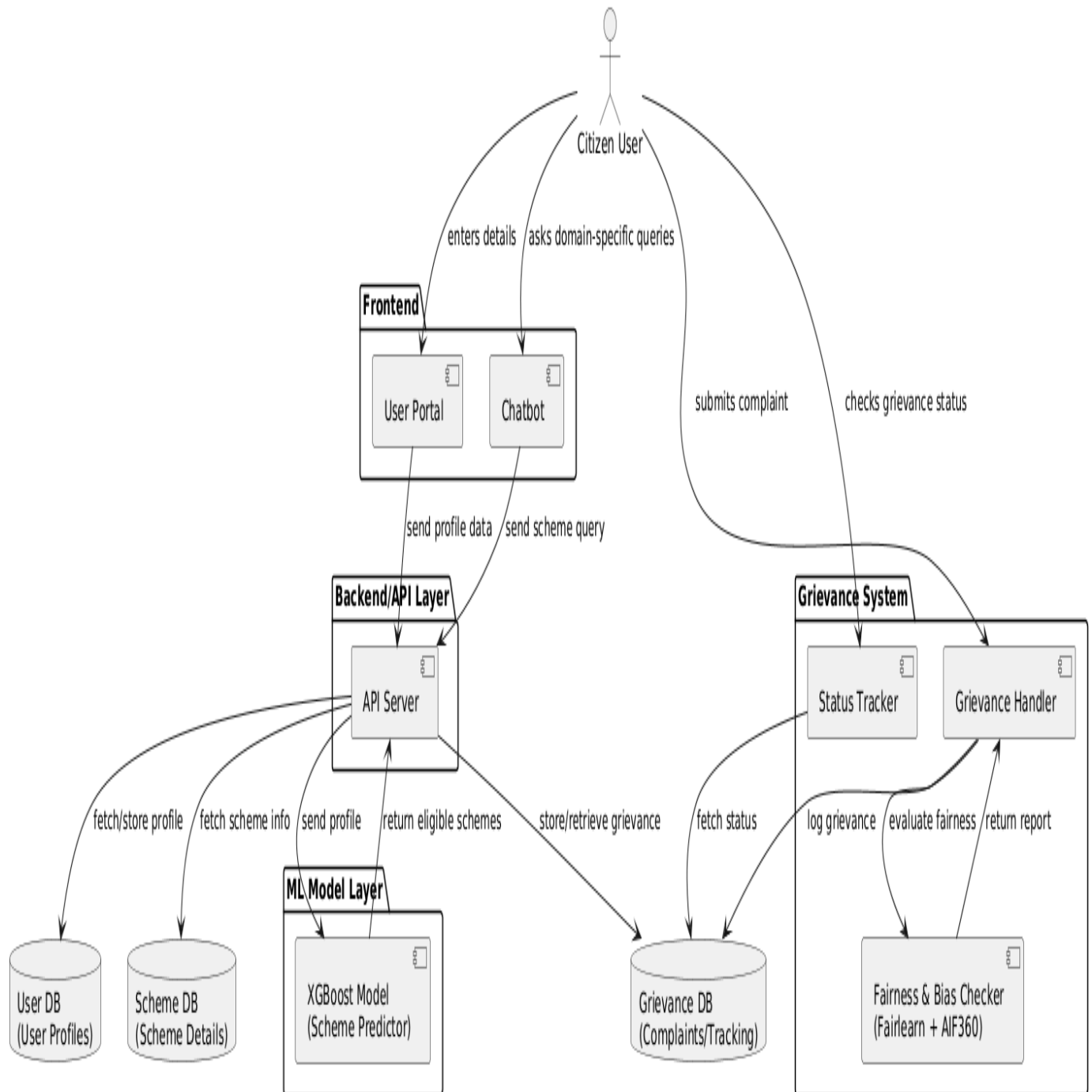


Fig.1.1 Architecture diagram

PROPOSED SOLUTION

The proposed solution is the development of a **basic PHP website** integrated with a **MySQL database** using **XAMPP**. The website functions as a **Government Scheme Recommendation System**, allowing citizens to register, log in, receive scheme recommendations, submit grievances, and track grievance statuses. The system follows a **layered architecture**, each with specific responsibilities to ensure a smooth, modular, and scalable development process.

1. Frontend Layer (User Interface)

- **Components:**
 1. **User Portal:** For registration, login, entering user details, and viewing recommendations.
 2. **Chatbot:** A basic FAQ/chat interface for asking scheme-related queries.
- **Functions:**
 1. Collects citizen input (personal details, queries).
 2. Sends data to the backend for processing.
 3. Displays scheme recommendations and grievance status.
- **Implementation:**
 1. Developed using HTML, CSS, JavaScript, and PHP.
 2. Simple form-based chatbot interface.

2. Backend Layer (Application Logic)

- **Component:**
 1. **API Server:** PHP scripts handling frontend and database interactions.
- **Functions:**
 1. Processes data received from frontend.
 2. Fetches user details and scheme information

from MySQL database.

3. Performs eligibility checks based on profile data.

4. Handles grievance submission and status updates.

- **Implementation:**

1. PHP APIs (api_server.php) for processing and database interaction.

2. Use of mysqli for MySQL operations.

3. ML Model Layer (Recommendation Engine)

- **Component:**
 1. **Eligibility Prediction Model** (Simulated with PHP rule-based logic initially).
- **Functions:**
 1. Predicts eligible schemes based on user profiles (age, income, location, etc.).
- **Implementation:**
 1. Basic decision-tree logic using if-else conditions in PHP.
 2. Future scope to integrate an XGBoost model via Python microservice.

4. Grievance System Layer (Complaint Management)

- **Components:**
 1. **Status Tracker:** Allows citizens to check grievance status.
 2. **Grievance Handler:** Admin-side tool for grievance management.
- **Functions:**
 1. Stores user-submitted complaints in the grievance database.

2. Assigns unique grievance IDs and tracks status (pending, reviewed, resolved).
3. Allows admin to view and update complaint statuses.

- **Implementation:**

1. Pages like submit_grievance.php and view_grievance.php for citizens.
2. Admin portal (admin_dashboard.php) for grievance handling.

2.5 Database Layer (MySQL Storage)

- **Components:**

1. **User Database:** Stores citizen details.
2. **Scheme Database:** Stores government scheme information.
3. **Grievance Database:** Stores grievance records and status updates.

- **MySQL Tables:**

1. users
2. schemes
3. grievances

Existing Solutions

There are various platforms available for citizens to access government schemes, including the UMANG , MyGov portal, state government websites, and department-specific portals. While these tools provide useful information, but fail because the information is scattered and not personalized, and there is no review system to help users understand which schemes are truly helpful, Many government sites have poor user interfaces, while rural areas require physical visits to understand. Overall ,the current platforms are not user-friendly or personalized, which makes it hard for people to find the right schemes. This shows the need for a better, smarter, and more accessible solution like GRIEVEASE.

Why is GRIEVEASE Different ?

It does help the users with inquiring about the schemes according to their need and eligibility. It further helps in personalizing the recommendations, easy navigation for quick and accurate selection of schemes, a user-friendly chatbot, and a review system for feedback.

CONCLUSION

Many people are unaware of the government schemes they are eligible for, and finding the right one can be confusing and time-consuming. GRIEVEASE aims to address this by assisting users in conveniently finding government schemes according to what they need and can qualify for. It gives plain suggestions, enables people to search through available schemes at a glance, and includes a friendly chatbot for guidance. Users can also provide ratings or reviews on schemes that they find useful, which can help others in the future. Overall, GRIEVEASE facilitates scheme discovery to be easy, quick and allows citizens to make better use of government support.

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RESULT (WEBSITE SCREENSHOTS)

Welcome to Government Scheme Recommendation & Grievance Portal

Your one-stop platform for accessing government schemes and submitting grievances efficiently.

Register Now

Explore Schemes



Our Services



Scheme Recommendations

Get personalized government scheme recommendations based on your profile.

Learn More



Grievance Submission

Submit your grievances directly to concerned government departments.

Learn More



Grievance Status

Track the status of your submitted grievances in real-time.

Learn More

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india-citizen-connect.lovable.app

S


Scheme Recommendations
Get personalized government scheme recommendations based on your profile.
[Learn More](#)


Grievance Submission
Submit your grievances directly to concerned government departments.
[Learn More](#)


Grievance Status
Track the status of your submitted grievances in real-time.
[Learn More](#)


Quick Access


Access our services quickly through these links or register to get personalized recommendations.


 [User Registration](#)

 [Scheme Recommendation](#)

 [Grievance Submission](#)

 [Grievance Status](#)


 [User Login](#)

 [Admin Login](#)

https://india-citizen-connect.lovable.app/schemes

india-citizen-connect.lovable.app/user-register

S

**Government Scheme**
Recommendation & Grievance Portal

[Home](#) [Schemes](#) [Grievance](#) [Login](#) [Register](#)

User Registration

Create a new account to access government schemes

Full Name
Sriraman K

Email
220701288@rajalakshmi.edu.in

Phone Number
6379148919

Interest Domain
Science & Technology

Password
.....

Confirm Password
.....

[Register](#)

Already have an account? [Login here](#)



User Login

Sign in to access your account

Email

220701288@rajalakshmi.edu.in

Password

☒ Remember me

[Forgot password?](#)

Login

Don't have an account? [Register here](#)

[Login as Administrator](#)



Scheme Recommendations

Get personalized government scheme recommendations based on your profile

Quick Email Lookup

Detailed Criteria

Email

220701288@rajalakshmi.edu.in

We'll look up your profile details to recommend schemes

[Find My Profile](#)

Government Scheme Portal

A comprehensive platform for citizens to access government schemes and submit their grievances.

Quick Links

[Scheme Recommendations](#)
[Submit Grievance](#)
[Check Grievance Status](#)
[Admin Login](#)

Contact

Ministry of Electronic Services
Government of India
New Delhi, 110001
Email: support@govschemes.gov.in
Phone: +91-11-23xxx789



Scheme Recommendations

Get personalized government scheme recommendations based on your profile

Quick Email Lookup

Detailed Criteria

Instructions

Fill in the details below to get personalized scheme recommendations. The more details you provide, the more accurate our recommendations will be.

Basic Information

Age

20

Gender

Male

Annual Income Level

₹3,00,000 - ₹5,00,000 per annum

Caste Category

General

Occupation & Education

Occupation

Private Sector

Educational Qualification

Below 10th grade

First-Generation Graduate

Are you the first graduate in your family?



Currently Studying

Are you currently enrolled in an educational institution?



Location & Housing

Residential Status

Urban

Housing Status

Kutcha House

Financial & Assets

Bank Account

Do you have a bank account?



Land Ownership

Medium Holding (2-10 acres)

Employment Status

Self-Employed

Family & Dependents

Marital Status

Single

Number of Dependents

0

Children, elderly or others dependent on you

Other Eligibility Criteria

Disability Status

Do you have any disability?



Identification Documents

Do you have valid ID documents (Voter ID/PAN/etc)?



Self-Help Group Member

Are you a member of any SHG or cooperative?



Aadhaar Linked

Is your mobile number linked with Aadhaar?



Previous Scheme Beneficiary

Have you availed benefits from any gov. scheme before?



Get My Recommendations

Your Recommended Schemes

Our fairness-enhanced AI model has analyzed your profile and recommended these schemes based on your eligibility and needs.

PM Vidya Lakshmi

Education

Education loan scheme for higher studies in India and abroad.

Eligibility: Students pursuing higher education

Benefits: Low-interest education loans, simplified application process

Match Score: 100%

191 people rated this scheme

176 15

Apply Now

PM Awas Yojana

Housing

Housing subsidy scheme to provide affordable housing to urban and rural poor.

Eligibility: Economically weaker sections and low income groups

Benefits: Interest subsidy, housing loans, affordable homes

Match Score: 86%

320 people rated this scheme

302 18

Apply Now

PM Mudra Yojana

Business

Loans up to ₹10 lakhs for small business enterprises.

Eligibility: Small business owners and entrepreneurs

Benefits: Collateral-free loans, flexible repayment options

Match Score: 76%

318 people rated this scheme

287 31

Apply Now

PM Kisan Samman Nidhi

Agriculture

Income support for farmers with up to ₹6000 per year in three equal installments.

Eligibility: All small and marginal farmers with land ownership

Benefits: Financial assistance, direct bank transfer

Match Score: 65%

257 people rated this scheme

245 12

Apply Now

Ayushman Bharat

Healthcare

Health insurance scheme providing coverage up to ₹5 lakhs per family per year.

Eligibility: Economically vulnerable families as per SECC data

Benefits: Cashless treatment, wide hospital network, comprehensive coverage

Match Score: 54%

450 people rated this scheme

421 29

Apply Now

PM Shram Yogi Maandhan

Labour

Pension scheme for unorganized sector workers with monthly income up to ₹15,000.

Eligibility: Unorganized sector workers aged 18-40 years

Benefits: Assured pension of ₹3,000 per month after 60 years

Match Score: 43%

152 people rated this scheme

143 9

Apply Now

Government Scheme Portal

A comprehensive platform for citizens to access government schemes and submit their grievances.

Quick Links

- Scheme Recommendations
- Submit Grievance
- Check Grievance Status
- Admin Login

Contact

Ministry of Electronic Services
Government of India
New Delhi, 110001
Email: support@govschemes.gov.in
Phone: +91-11-23xxx789

Grievance Submission

Submit your concerns or issues to the appropriate government department

Email

220701288@rajalakshmi.edu.in

Department

Electronics & Information Technology

Subject

Unable to Access Scheme Details

Grievance Details

The science and technology-related schemes are not showing up even though I am eligible based on my profile. Kindly verify if the eligibility model is working correctly.

Note: Your grievance will be forwarded to the relevant department. You will receive a reference number for tracking your submission.

Submit Grievance

Admin Dashboard

Manage grievances and scheme recommendations

Generate Reports

Total Grievances

5

Last updated today

Pending Grievances

2

Requires attention

Total Users

4

Registered users

Grievances

User Schemes

Grievance Management

Search grievances...

Reference ID	Email	Subject	Department	Date	Status	Action
GRV-123456	citizen1@example.com	Water supply issue in neighborhood	Housing & Urban Affairs	2025-01-15	Pending	Pending
GRV-234567	citizen2@example.com	Scholarship application not processed	Education	2025-01-18	In Progress	In Progress
GRV-345678	citizen3@example.com	Street light not working for two weeks	Urban Development	2025-01-20	Pending	Pending
GRV-456789	citizen4@example.com	Incorrect property tax calculation	Finance	2025-01-22	Resolved	Resolved

Admin Dashboard

Manage grievances and scheme recommendations

Generate Reports

Total Grievances

5

Last updated today

Pending Grievances

2

Requires attention

Total Users

4

Registered users

Grievances

User Schemes

User Interest and Scheme Matches

Name	Email	Interest Domain	Matched Schemes	Action
Ramesh Kumar	ramesh@example.com	Agriculture	PM Kisan Samman Nidhi, Soil Health Card Scheme	Edit Schemes
Priya Sharma	priya@example.com	Education	National Scholarship Portal, PM POSHAN	Edit Schemes
Ahmed Khan	ahmed@example.com	Housing	PM Awas Yojana, CLSS for MIG	Edit Schemes
Sunita Patel	sunita@example.com	Healthcare	Ayushman Bharat, PM Jan Arogya Yojana	Edit Schemes