GOVBOT- FOR GOVERNMENT SCHEMES

A PROJECT REPORT

Submitted by

MADHULIKA G (2116210701139)

MAHALAKSHMI K (2116210701143)

NAVEENKUMAR S (2116210701175)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

ANNA UNIVERSITY, CHENNAI

MAY 2024

RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI

BONAFIDE CERTIFICATE

Certified that this Thesis titled **"GOVBOT – FOR SCHEMES**" is the bonafide work of "**MADHULIKA G (2116210701139), MAHALAKSHMI K (2116210701143), NAVEENKUMAR S (2116210701175)"** who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred onan earlier occasion on this or any other candidate.

SIGNATURE

Dr . K.Ananthajothi M.E.,Ph.D.,

PROJECT COORDINATOR

Professor

Department of Computer Science and Engineering

Rajalakshmi Engineering College

Chennai - 602 105

Submitted to Project Viva-Voce Examination held on_____

Internal Examiner **External Examiner**

ABSTRACT

People face difficulties while accessing information about government schemes and it can be a tedious task for citizens due to several reasons. Firstly, the sheer volume of available schemes makes it difficult for individuals to navigate through them effectively. With an unlimited amount of data on various schemes, finding the right one that suits their needs and eligibility becomes a time consuming process. Moreover, the traditional methods of searching for schemes often lack user engagement, making it challenging for citizens to interact with the information effectively. As a result, individuals may miss out on valuable opportunities provided by government initiatives simply due to the inefficiency of accessing relevant information in a timely manner.

To address the challenges associated with accessing government scheme information, a chatbot solution can significantly improve the connection between the government and its citizens. By leveraging machine learning algorithms and natural language processing, the chatbot can offer instant responses to user queries regarding government schemes. When a user asks about a particular scheme, the chatbot can provide detailed information about its eligibility criteria, who can avail it, and how to avail it. This not only saves citizens valuable time but also increases user engagement by providing a more interactive and accessible platform for accessing government scheme information. Ultimately, the chatbot serves as a bridge between citizens and government initiatives, empowering individuals to make informed decisions and take advantage of the resources.

ACKNOWLEDGMENT

First, we thank the almighty god for the successful completion of the project. Our sincere thanks to our chairman **Mr. S. Meganathan B.E., F.I.E.,** for his sincere endeavor in educating us in his premier institution. We would like to express our deep gratitude to our beloved Chairperson **Dr. Thangam Meganathan Ph.D.,** for her enthusiastic motivation which inspired us a lot in completing this project and Vice Chairman **Mr. Abhay Shankar Meganathan B.E., M.S.,** for providing us with the requisite infrastructure.

We also express our sincere gratitude to our college Principal, **Dr. S. N. Murugesan M.E., PhD.,** and **Dr. P. KUMAR M.E., PhD, Director computing and information science , and Head Of Department of Computer Science and Engineering** and our project coordinator **Dr. K.Ananthajothi M.E.,Ph.D.,** for her encouragement and guiding us throughout the project towards successful completion of this project and to our parents, friends, all faculty members and supporting staffs for their direct and indirect involvement in successful completion of the project for their encouragement and support.

MADHULIKA G

MAHALAKSHMI K

NAVEENKUMAR S

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CHAPTER 1

INTRODUCTION

In the ever-evolving landscape of public service and administration, the integration of technology has become imperative for ensuring efficient delivery and accessibility. Enter the Government Scheme Bot, a groundbreaking initiative designed to streamline citizen-government interactions and provide comprehensive information on various governmental schemes and programs. As a pioneering AI-driven platform, the Government Scheme Bot stands at the forefront of modern governance, offering a user-friendly interface and real-time assistance to individuals seeking assistance or information regarding government initiatives.

At its core, the Government Scheme Bot serves as a virtual assistant, bridging the gap between citizens and governmental resources. With its advanced natural language processing capabilities, the bot can interpret and respond to queries from users with accuracy and efficiency. Whether it's information on eligibility criteria, application procedures, or benefits offered by different schemes, the bot delivers tailored responses, ensuring that users receive the guidance they need in a timely manner.

One of the primary objectives of the Government Scheme Bot is to enhance transparency and accessibility in the administration of public schemes. By centralizing information and making it readily available to the public, the bot empowers citizens to make informed decisions about their participation in various government programs. Moreover, the bot serves as a valuable tool for reducing bureaucratic barriers and simplifying complex procedures, thereby fostering greater inclusivity and participation across diverse demographic groups.

In addition to providing information, the Government Scheme Bot also facilitates the application process for eligible individuals. Through interactive interfaces and intuitive workflows, users can initiate and complete their applications with ease, eliminating the need for manual paperwork and reducing processing times. Furthermore, the bot employs robust security measures to safeguard user data and ensure compliance with privacy regulations, thereby instilling trust and confidence among users in their interactions with the platform.

1.1 PROBLEM STATEMENT

The challenge entails creating an AI-driven Chabot for explaining Government Schemes for people to make them understand the benefits of them. The AI must autonomously learn, adapt, and refine its strategies through various questions and it wants to produce an answer that can be easily understood. The primary objective is to enable the AI to perceive and respond to the questions posed by the users, the answers produced must be accurate so that it will satisfy the user needs.

1.2 SCOPE OF THE WORK

The GovBot-For Schemes will create a user-centric platform that revolutionizes the accessibility and efficiency of accessing government schemes. It entails building an intuitive interface for users to easily navigate through a centralized repository of scheme information. Through the integration of interactive features like chat bots, the application will provide personalized assistance and guidance, ensuring users can smoothly navigate the application process. Security measures will be paramount, guaranteeing the protection of user data and compliance with privacy regulations.

1.3 AIM AND OBJECTIVES OF THE PROJECT

The primary goal of this project is to engineer an autonomous AI Chat Bot for giving detailed explanation about schemes, harnessing the information of government schemes through library. Through iterative learning mechanisms, the project endeavors to create an AI Chat Bot capable of mastering the complexities of the questions posed, evolving its strategies to achieve expertise and proficiency in this and satisfying the user with their answer.

To fulfill this aim, the project delineates several key objectives. Firstly, it aims to establish a simulated user friendly environment using simple and error free environment. This will serve as the interactive platform where the AI will engage and learn. Subsequently, the project aims to empower individuals from diverse backgrounds to easily explore, understand, and benefit from the multitude of government initiatives available to them.

1.4 RESOURCES

This project has been developed through widespread secondary research of accredited manuscripts, standard papers, business journals, white papers, analysts' information, and conference reviews. Significant resources are required to achieve an efficacious completion of this project.

The following prospectus details a list of resources that will play a primary role in the successful execution of our project:

- A properly functioning workstation (PC, laptop, net-books etc.) to carry out desired research and collect relevant content.
- Unlimited internet access.
- Unrestricted access to the university lab in order to gather a variety of literature including academic resources (for e.g. Prolog tutorials, online programming examples, bulletins, publications, e-books, journals etc.), technical manuscripts, etc. Prolog development kit in order to program the desired system and other related software that will be required to perform our research.

1.5 MOTIVATION

The motivation behind this project stems from the recognition of the pervasive challenges faced by citizens in accessing and benefiting from government schemes. Often, individuals eligible for crucial support find themselves grappling with complex application procedures, bureaucratic red tape, and a lack of awareness regarding available resources. This project is driven by the belief that technology can be harnessed as a powerful tool to dismantle these barriers and empower citizens to navigate the system with ease and confidence.

Ultimately, the motivation for this project lies in its potential to make a tangible difference in the lives of millions of individuals, enabling them to access vital resources and opportunities that can uplift their livelihoods and enhance their well-being. By democratizing access to government schemes and fostering a culture of empowerment and participation among citizens, this project aims to contribute towards building a more resilient, equitable, and prosperous society for all people.

CHAPTER 2
LITRETURE SURVEY

“Digital Government: Building a Platform for Transformation" by Theresa Pardo and Sharon Dawes (2005): This seminal work explores the potential of digital platforms in transforming government services, emphasizing the importance of user-centric design and accessibility. It highlights the role of technology in enhancing citizen engagement and improving the delivery of public services, laying the groundwork for modern e-government initiatives.

"Towards Inclusive E-Governance: A Literature Review and Framework" by Stephen Dann (2013): Dann's review examines the concept of inclusive e-governance, emphasizing the need to address digital divides and ensure equitable access to government services. The paper provides a comprehensive framework for designing inclusive e-governance initiatives, encompassing factors such as accessibility, usability, and social inclusion.

"Transforming Government Through E-Democracy: The Role of ICTs in Citizen Engagement" by Panagiotis Georgiadis and Dimitris Askounis (2017): This paper explores the role of Information and Communication Technologies (ICTs) in promoting citizen engagement and participatory governance. It discusses various e-democracy tools and platforms that facilitate citizen-government interactions, highlighting their potential to enhance transparency, accountability, and inclusivity in public decision-making processes.

"Empowering Citizens Through E-Services: A Review of Success Factors" by Maria A. Wimmer and Marijn Janssen (2008): Wimmer and Janssen's review examines the success factors influencing the adoption and effectiveness of e-government services from a citizen-centric perspective. Drawing on empirical studies, the paper identifies key factors such as usability, trust, and perceived benefits, providing valuable insights for designing user-friendly and impactful e-services.

"Digital Inclusion: Towards a More Inclusive Information Society" by Ricardo Gomez and Hernan Galperin (2007): This paper explores the concept of digital inclusion and its implications for promoting social equity and economic development. It discusses strategies for overcoming barriers to digital access and participation, highlighting the role of government policies and community initiatives in fostering digital inclusion.

"User-Centered Design for Government Systems: A User Study on Project Management Information Systems" by Enrico Ferro et al. (2018): Ferro et al.'s study investigates the importance of user-centered design principles in the development of government systems, focusing specifically on project management information systems. The paper presents empirical findings on user preferences and challenges, offering insights into designing effective and user-friendly government applications.

"E-Government Adoption in Developing Countries: A Case Study of E-Government Adoption in Indonesia" by Vishanth Weerakkody and Shahid Mahmood (2012): This case study examines the adoption of e-government initiatives in Indonesia, highlighting the challenges and opportunities faced by developing countries in leveraging technology for governance. The paper offers valuable lessons learned and recommendations for enhancing the effectiveness of e-government implementation in similar contexts.

"Improving Digital Government Services: A Literature Review and Research Agenda" by Muhammad Zahid Tunio et al. (2020): Tunio et al.'s literature review provides an overview of research on improving digital government services, focusing on topics such as service quality, citizen satisfaction, and service delivery models. The paper identifies gaps in existing literature and proposes a research agenda to address emerging challenges and opportunities in the field.

“Blockchain Technology in Government: Benefits and Implications of Distributed

Ledger Technology for e-Government" by Christopher Ankobil et al. (2019): This paper explores the potential applications of blockchain technology in government services, highlighting its benefits in terms of transparency, security, and efficiency. It discusses use cases and implications of distributed ledger technology for e-government, offering insights into its transformative potential in enhancing citizen trust and government accountability.

"Citizen-Centric E-Government Services: A Case Study of Singapore" by Junhua Zhang et al. (2017): Zhang et al.'s case study examines Singapore's approach to citizen-centric e-government services, focusing on initiatives such as the SingPass platform and e-Services portal. The paper evaluates the effectiveness of these services in improving citizen engagement and satisfaction, providing valuable lessons for other countries seeking to enhance their e-government capabilities.

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CHAPTER 3

SYSTEM DESIGN

3.1 GENERAL

In this section, we would like to show how the general outline of how all the components end up working when organized and arranged together. It is further represented in the form of a flow chart below.

3.2 SYSTEM ARCHITECTURE DIAGRAM

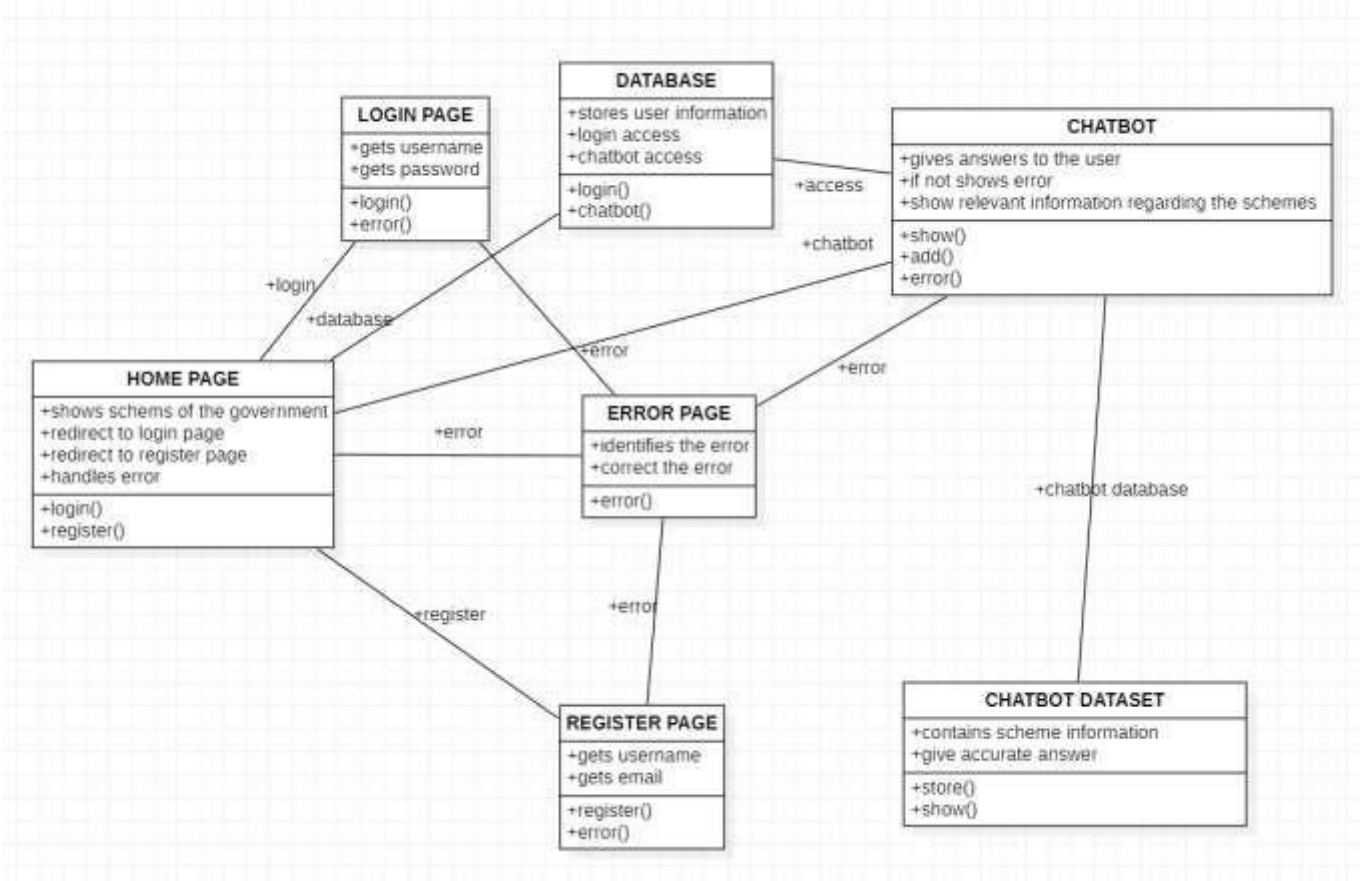

Fig 3.1: System Architecture

3.3 DEVELOPMENTAL ENVIRONMENT

3.3.1 HARDWARE REQUIREMENTS

The hardware requirements may serve as the basis for a contract for the system's implementation. It should therefore be a complete and consistent specification of the entire system. It is generally used by software engineers as the starting point for the system design.

Table 3.1 Hardware Requirements

COMPONENTS	SPECIFICATION
PROCESSOR	Intel Core i5
RAM	8 GB RAM
GPU	NVIDIA GeForce GTX 1650
MONITOR	15" COLOR
HARD DISK	512 GB
PROCESSOR SPEED	MINIMUM 1.1 GHz

3.3.2 SOFTWARE REQUIREMENTS

The software requirements document is the specifications of the system. It should include both a definition and a specification of requirements. It is aset of what the system should rather be doing than focus on how it should be done. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating the cost, planning team activities, performing tasks, tracking the team, and tracking the team's progressthroughout the development activity.

Python IDLE, and **chrome** would all be required.

CHAPTER 4
PROJECT DESCRIPTION

4.1 METHODOLODGY

The project methodology revolves around integrating Flask for API development and Tensor Flow for machine learning model implementation. Leveraging Flask's lightweight and versatile framework, we aim to streamline API integration, allowing seamless communication between various components of the project.

Our application processes the data for responding to user's queries regarding government schemes using ML models, offering eligibility criteria, who can avail it and how can avail it. NLP techniques can identify the intent behind user queries, helping the chatbot determine what information the user is seeking. NLP enables the extraction of relevant entities from user queries, such as the names of specific government schemes, demographic information about the user, or key terms related to eligibility criteria.

With the application's assistance, users can determine their eligibility criteria for the government scheme they seek. The utilization of algorithms and NLP ensures the application's accuracy and enhances user experience. The chatbot ensures users can access relevant information about government schemes, reducing the risk of missing out on valuable opportunities. It saves user time by eliminating the need to search for information online.

4.2 MODULE DESCRIPTION

The application comprises several interconnected modules designed to streamline the user experience and improve the accessibility of government schemes. Users can securely authenticate and manage their profiles, access comprehensive information on available schemes, and receive personalized assistance throughout the application process. With features for electronic submission and real-time tracking of applications, administrators can efficiently manage and review submissions. Seamless communication channels facilitate updates and notifications, while feedback mechanisms allow for continuous improvement based on user insights.

4.2.1 LOGIN PAGE

The Login Page module serves as the gateway for users to securely access the application. It includes features for user authentication, allowing registered users to log in using their credentials. This also helpful to identify users to prevent unauthorized access by outsiders. It requires a Username and a Password for that profile to login into the application. Upon successful authentication, users are granted access to their personalized dashboard and application functionalities.

4.2.2 REGISTER PAGE

The Registration Page module enables new users to create accounts and gain access to the application's features. It offers a user-friendly interface for entering registration details, including username, email address, and password. Additionally, the page may collect additional information such as demographic data or contact information as per the application's requirements.

4.2.3 HOME PAGE

The Home Page module serves as the main interface for users upon logging into the application. It provides an overview of available government schemes,

prominently featuring key information such as popular schemes, recent updates, and announcements. The page may include interactive elements such as a ChatBot for giving an prominent answer for the questions posed by the user. It also used to interact with the user to make it a interactive and more user friendly platform.It serves as a centralized hub for accessing various modules and functionalities within the application, directing users to explore scheme details, initiate applications, or access support resources as needed. The design prioritizes user engagement and ease of navigation, with intuitive layout and responsive design to ensure optimal usability across different devices and screen sizes.

4.2.4 CHATBOT

The Chatbot module integrates a conversational interface powered by natural language processing (NLP) to provide users with personalized assistance and guidance throughout their interactions with the application. Users can engage with the chatbot to ask questions, seek information about government schemes, and receive real-time support for their queries. The chatbot is designed to understand and interpret user inputs accurately, leveraging NLP algorithms to analyze and respond to queries in a human-like manner. It offers a wide range of functionalities, including answering FAQs, providing step-by-step guidance on application procedures, and offering personalized recommendations based on user preferences and eligibility criteria. The chatbot may also integrate with backend systems to fetch relevant data and perform tasks such as application status checks or document uploads on behalf of the user. Through continuous learning and optimization, the chatbot aims to enhance user satisfaction, streamline user interactions, and improve overall accessibility and usability of the application.

CHAPTER 5

RESULTS AND DISCUSSIONS

5.1 OUTPUT

The following images contain information about the modules images which are Attached below

Example instance of creating a generation

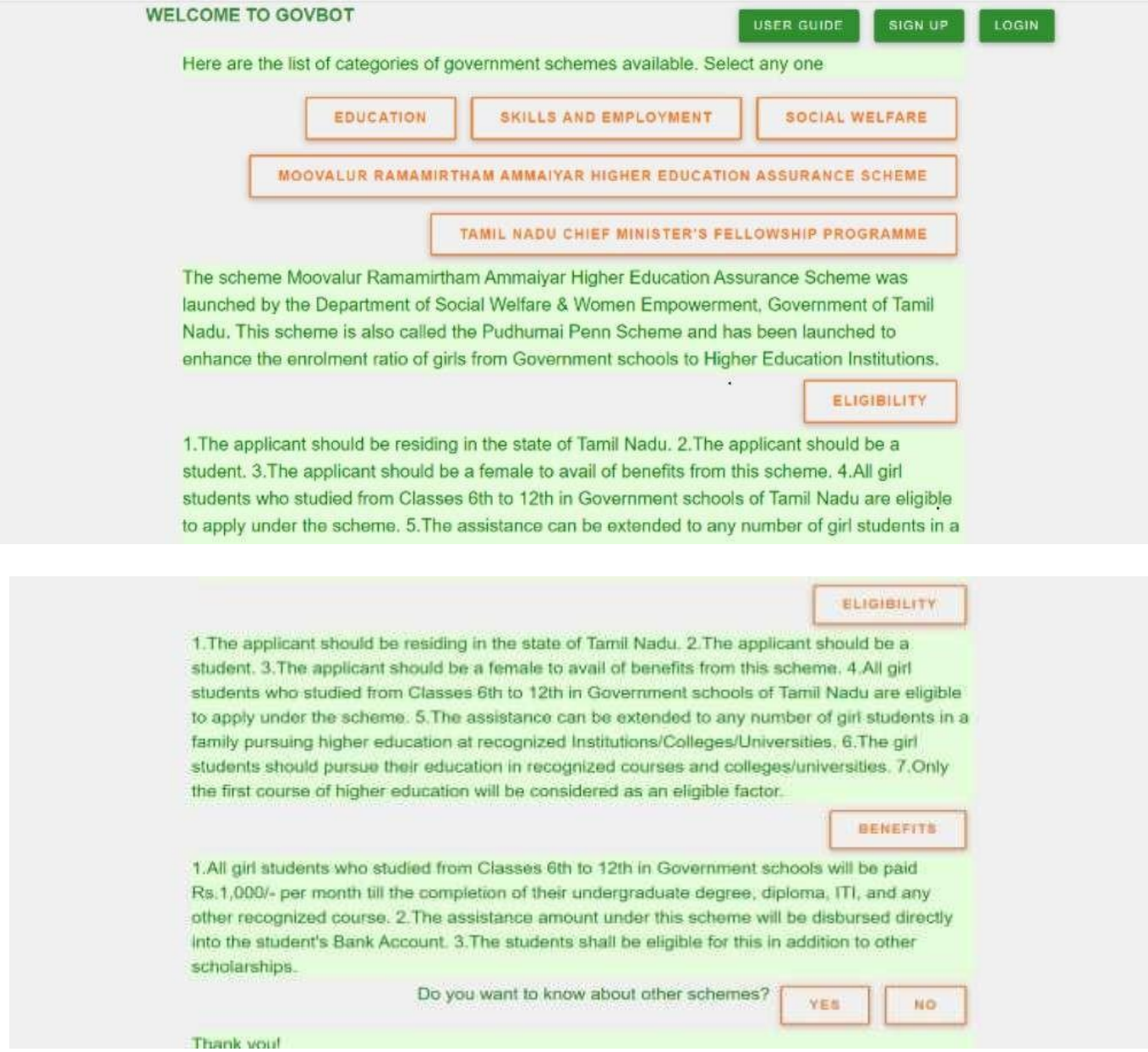

Fig 5.1.1: Chatbot Page

Login Page :

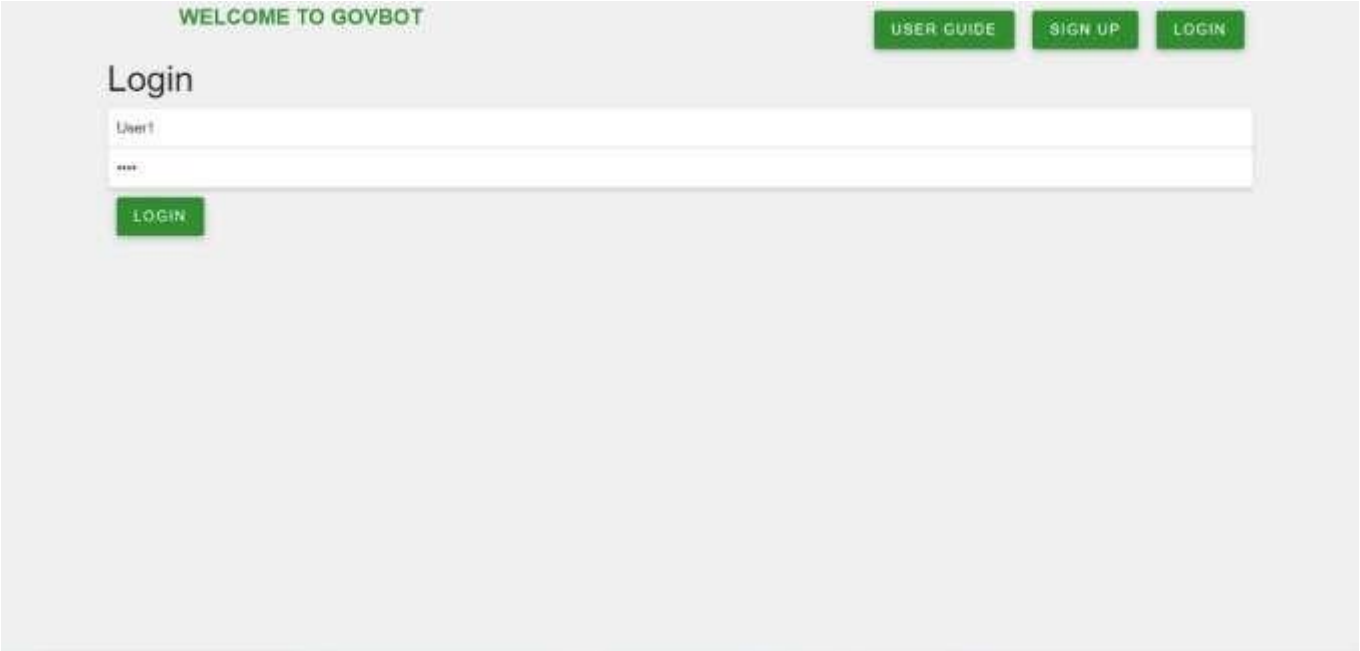

Fig 5.1.2: Login Page

Register Page :

Fig 5.1.3: Register Page

5.2 RESULT

This project will result in a comprehensive government scheme information tool that empowers citizens with easy access to relevant programs. This user-friendly web application allows users to explore various government schemes, understand eligibility criteria, and access application procedures. It delivers instant responses to users' queries by eliminating search time. It provides relevant information about the scheme, reducing complexity. It increases user engagement by providing an intuitive interface and engaging conversation. Additionally, the chatbot can dynamically suggest relevant government schemes based on the demographic information provided by the user, streamlining the process and eliminating the need for the user to specify each step in a static web content format.

To address the challenges associated with accessing government scheme information, a chatbot solution can significantly improve the connection between the government and its citizens. By leveraging machine learning algorithms and natural language processing, the chatbot can offer instant responses to user queries regarding government schemes. When a user asks about a particular scheme, the chatbot can provide detailed information about its eligibility criteria, who can avail it, and how to avail it. This not only saves citizens valuable time but also increases user engagement by providing a more interactive and accessible platform for accessing government scheme information. Ultimately, the chatbot serves as a bridge between citizens and government initiatives, empowering individuals to make informed decisions and take advantage of the resources available to them.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

People face difficulties while accessing information about government schemes and it can be a tedious task for citizens due to several reasons. Firstly, the sheer volume of available schemes makes it difficult for individuals to navigate through them effectively. With an unlimited amount of data on various schemes, finding the right one that suits their needs and eligibility becomes a time consuming process. Moreover, the traditional methods of searching for schemes often lack user engagement, making it challenging for citizens to interact with the information effectively. As a result, individuals may miss out on valuable opportunities provided by government initiatives simply due to the inefficiency of accessing relevant information in a timely manner.

Ultimately, this project embodies the transformative potential of technology in democratizing access to government resources and advancing the principles of good governance. By bridging the gap between citizens and public services, the application paves the way for a more equitable and responsive governance framework, where every individual has the opportunity to access the support they need to thrive. As governments worldwide increasingly embrace digital transformation, initiatives like this serve as exemplars of how technology can be harnessed to enhance citizen well-being, strengthen democratic institutions, and build more resilient and inclusive societies for the future.

FUTURE ENHANCEMENT

A potential future enhancement for a AI ChatBot could involveincorporating more advanced AI techniques or expanding the application’s features to create a more immersive and interactive experience. Here's an idea for a future enhancement.

Integration of Machine Learning and AI: Incorporating machine learning algorithms and AI capabilities can enhance the chatbot's intelligence, allowing it to provide more accurate and context-aware responses. This can involve sentiment analysis to gauge user satisfaction, recommendation systems for personalized scheme suggestions, and proactive assistance based on user behavior patterns.

Expansion of Scheme Coverage: Continuously updating and expanding the repository of government schemes to include new initiatives and updates ensures that users have access to the latest information and opportunities. This may involve collaborating with government agencies to streamline data integration processes and automate scheme updates.

Enhanced User Engagement Features: Introducing gamification elements, interactive quizzes, and rewards systems can incentivize user engagement and encourage active participation in exploring and applying for government schemes. Additionally, incorporating social sharing features can enable users to spread awareness and encourage others to benefit from the application.

APPENDIX

SOURCE CODE:

CHATBOT:

```
import React, { useState } from 'react';
import axios from 'axios';
import { useNavigate } from 'react-router-dom';
function Chatbot() {
    const history = useNavigate();
    const [query, setQuery] = useState('');
    const [response, setResponse] = useState('');
    const handleSubmit = async (e) => {
        e.preventDefault();
        try {
            const res = await axios.post('http://localhost:5000/get_response', { message: query, userID: '123' });
            setResponse(res.data.response);
        } catch (error) {
            console.error(error);
        }
    };
    const handleLogout = () => {
        axios.get('http://localhost/govbotreactphp/logout.php')
            .then(() => {
```

```
            // Redirect to login page after logout
            history('/login');
        })
        .catch((error) => {
            console.error('Error:', error);
        });
    };
    return (
        <div>
            <h1>Chatbot Interface</h1>
            <form onSubmit={handleSubmit}>
                <input type="text" value={query} onChange={(e) => setQuery(e.target.value)} />
                <button type="submit">Submit</button>
            </form>
            <p>{response}</p>
            <button onClick={handleLogout}>Logout</button>
        </div>
    );
}
export default Chatbot;
```

LOGIN PAGE:

```
import React, { useState } from 'react';
```

```
import axios from 'axios';
import { useNavigate } from 'react-router-dom';
function Login() {
  const [username, setUsername] = useState('');
  const [password, setPassword] = useState('');
  const history = useNavigate();
  const handleLogin = (e) => {
    e.preventDefault();
    const data={uname:username,pass:password};
    axios.post('http://localhost/govbotreactphp/login.php',data)
      .then((response) => {
        if (response.data.status === 'success') {
            history('/menubot'); // Redirect to chatbot component
        } else {
            console.error('Login Error:', response.data.message);
            alert('Login failed. Please try again.');
        }
      })
      .catch((error) => {
        console.error('Login Error:', error);
        alert('An error occurred. Please try again.');
      });
  };
```

```
  return (
    <div>
      <h1>Login</h1>
      <form onSubmit={handleLogin}>
        <input type="text" className="form-control" placeholder="Username" value={username} onChange={(e) => setUsername(e.target.value)} />
        <input type="password" className="form-control" placeholder="Password" value={password} onChange={(e) => setPassword(e.target.value)} />
        <button type="submit"  className="btn btn-success" >Login</button>
      </form>
    </div>
  );
}
export default Login;
```

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