

# MECHANISM TO HELP RURAL PEOPLE SELF-SELECT FOR RECEIVING BENEFITS OFFERED UNDER GOVT. SCHEMES

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**Abstract:** *In rural communities worldwide, government schemes offer the promise of transformative change, providing essential support from healthcare to agriculture. However, accessing these benefits often proves challenging. Rural individuals face bureaucratic obstacles, limited information, and a lack of personalized guidance, hindering their ability to obtain the support they deserve. Recognizing these barriers, our project, BenefitBuddy, aims to revolutionize how rural communities engage with and benefit from government schemes. BenefitBuddy is more than just a web application; it is a lifeline for rural empowerment, addressing the unique challenges faced by individuals in remote areas. With its user-centric design and comprehensive features, BenefitBuddy seeks to democratize access to vital government scheme information. By consolidating details on eligibility criteria, application procedures, and benefits, the platform serves as a one-stop destination for rural individuals seeking support. BenefitBuddy simplifies the complexities of government assistance, empowering users to make informed decisions about their entitlements and take control of their futures. Additionally, BenefitBuddy incorporates a dynamic eligibility checker, leveraging technology to streamline access to benefits. By providing tailored assessments based on user inputs, the platform removes ambiguity and uncertainty, enabling rural individuals to determine their eligibility confidently. In doing so, BenefitBuddy not only enhances access to government schemes but also fosters transparency and accountability in their administration. Through innovation and empowerment, BenefitBuddy paves the way for inclusive development, ensuring no rural individual is left behind in the journey towards a brighter tomorrow.*

**Keywords:** *Prediction System, Rural Development, Scheme Suggestion, Eligibility Checker, Self-select*

## I. INTRODUCTION

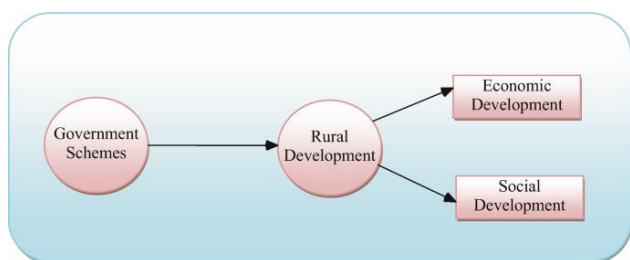
Nowadays, the government launches various ambitious programs to make the country more prosperous, but they often fail in effective implementation and reaching the beneficiaries. The main reason behind this issue is the lack of awareness among rural people. This paper aims to provide a solution to this situation. Through the system, rural students will be educated so they can learn about the various schemes offered by the government and identify which ones they are eligible for. If rural students become aware of all the government schemes provided by the Government of India for their welfare, their lives could reach the next level. Initially, this system will explore the available government schemes in the educational sector for the welfare of rural students. Next, individuals' data (i.e., name, age, caste, occupation, annual income, etc.) will be collected. Then, analysis and classification based on communities (SC, ST, BC, and OBC) of the users and

the schemes will be performed. Based on the inputs from the users, the most efficient algorithm that produces the results with the highest accuracy will be used to predict the schemes that a specific student is eligible for. Consequently, through this project, rural students will learn about various beneficiary schemes provided by the government and can utilize these schemes for the development of rural areas. BenefitBuddy emerges as a beacon of hope, aiming to revolutionize the way rural communities engage with and benefit from government schemes. BenefitBuddy is more than just a web application; it is a lifeline for rural empowerment, designed to address the unique challenges faced by individuals in remote areas. With its user-centric design and comprehensive features, BenefitBuddy aims to democratize access to vital information on government schemes. By consolidating details on eligibility criteria, application procedures, and benefits offered, the platform serves as a one-stop destination for rural individuals seeking support. With

BenefitBuddy, navigating the complexities of government assistance becomes simpler, empowering users to make informed decisions about their entitlements.

### A. Rural Empowerment through government schemes

Government schemes aimed at rural development encompass a wide array of initiatives spanning sectors like agriculture, healthcare, education, infrastructure, and social welfare. These schemes are designed to address the specific needs and challenges faced by rural populations, aiming to improve their living standards and foster sustainable development. From subsidies for farmers to healthcare programs for marginalized communities, government schemes play a pivotal role in uplifting rural areas and reducing disparities between urban and rural regions. Access to government benefits is vital for rural communities as it directly impacts their quality of life and socio-economic well-being. These benefits provide essential services, financial assistance, and infrastructure support that are often lacking in remote areas. For instance, agricultural subsidies enable farmers to invest in modern farming techniques, healthcare schemes ensure access to quality medical services, and social welfare programs alleviate poverty and provide a safety net for vulnerable populations. Moreover, government schemes contribute to overall rural development by stimulating economic growth, empowering communities, and fostering inclusive progress.



*Figure 1.1 Impact Of Government Schemes on Rural Development*

### B. Challenges Faced by Rural Communities

Rural communities face a myriad of obstacles when attempting to access government schemes and benefits. Bureaucratic hurdles, such as complex application processes and ambiguous eligibility criteria, often

create barriers to entry for individuals seeking assistance. Limited access to accurate and up-to-date information about available schemes further complicates matters, leaving many rural residents unaware of the resources available to them. Financial constraints pose yet another challenge, as impoverished individuals struggle to meet the upfront costs associated with applying for benefits or complying with eligibility requirements. Additionally, socio-cultural barriers, including language barriers, social stigma, and gender disparities, further marginalize vulnerable populations and impede their access to essential services. Addressing these challenges requires a comprehensive approach that tackles structural inequalities, improves infrastructure and service delivery, enhances access to information, and promotes inclusive governance and participation

- **Complex Application Processes:** Rural individuals often face convoluted application procedures when attempting to enroll in government schemes. The lack of user-friendly interfaces and guidance exacerbates this challenge, leading to confusion and frustration among applicants.
- **Limited Awareness of Available Schemes:** Many rural residents are unaware of the diverse range of government schemes available to them. Without access to comprehensive and up-to-date information, individuals may miss out on opportunities for assistance that could significantly improve their livelihoods.
- **Inadequate Technology Infrastructure:** Limited access to technology infrastructure, including internet connectivity and digital literacy, poses a significant barrier to accessing online platforms for scheme enrollment. Without reliable internet access or the necessary skills to navigate digital interfaces, rural communities are further marginalized from accessing benefits.
- **Financial Constraints:** Rural populations often struggle with financial constraints, making it difficult to afford the costs associated with applying for government schemes. From transportation expenses to document procurement fees, these upfront costs can deter individuals from seeking the support they are entitled to.
- **Socio-Cultural Barriers:** Socio-cultural factors such as language barriers, social stigma, and gender disparities also impede access to government

schemes. Cultural sensitivities must be addressed to ensure that all members of rural communities feel comfortable and empowered to seek assistance without fear of judgment or discrimination.

- **Limited Outreach and Support:** Outreach efforts to inform rural communities about available schemes are often inadequate, leaving many individuals uninformed about their entitlements. Additionally, the lack of personalized support or guidance throughout the application process further hinders access to benefits.

Addressing these challenges through the development of an intuitive and inclusive web application like BenefitBuddy is essential to ensure that rural communities can overcome barriers and access the support they need to thrive. By streamlining processes, providing comprehensive information, and fostering a supportive environment, BenefitBuddy aims to empower rural individuals to navigate government schemes with ease and confidence.

### C. Broad Knowledge of available techniques

The current system for accessing government schemes in many countries can be cumbersome and confusing, especially for people living in rural areas. Typically, a person has to visit various government offices and fill out multiple forms to check their eligibility for different schemes. This process can be time-consuming, and there is often a lack of clarity around the eligibility criteria. Some of the relevant approaches to get to know about the schemes could be

- **Government Portals and Websites:** Many governments worldwide have developed online portals or websites to provide information about available schemes and benefits. These platforms often allow users to apply for schemes online. Examples include the Indian government's portal "Digital India" and the United States' "Benefits.gov."
- **Mobile Applications:** Some governments or organizations have developed mobile applications to facilitate access to government schemes and benefits. These apps often provide information about eligibility criteria, application processes, and

status tracking. An example is the "MyGov" app in India.

- **Community Service Centers:** In some regions, community service centers or Common Service Centers (CSCs) act as intermediaries between rural communities and government services. They help individuals apply for various schemes and benefits and provide assistance in navigating bureaucratic processes.
- **Non-Governmental Organizations (NGOs):** NGOs and non-profit organizations often play a crucial role in rural development by providing information, advocacy, and assistance with accessing government schemes and benefits. These organizations may operate helplines, conduct outreach programs, or offer direct assistance to individuals.
- **Public Distribution Systems (PDS):** In countries like India, the Public Distribution System (PDS) serves as a mechanism for distributing essential commodities and welfare services to the rural population. While not exclusively focused on government schemes, PDS plays a vital role in delivering benefits to rural communities.
- **Social Welfare Departments:** Government social welfare departments at the local, regional, or national levels are responsible for implementing and managing various schemes and benefits aimed at rural populations. These departments often have dedicated offices or online platforms for scheme administration and beneficiary management.
- **Financial Inclusion Initiatives:** Financial inclusion programs and initiatives aimed at rural populations may indirectly facilitate access to government schemes and benefits by providing banking services, financial literacy, and support for digital transactions.

## II. PROBLEM STATEMENT

Despite numerous government initiatives aimed at fostering prosperity, India struggles with effective implementation and reaching intended beneficiaries. This is evident in ongoing issues such as farmer suicides, lack of quality education, and other societal challenges. These issues highlight a disappointing reality: despite the presence of developmental schemes, India remains far from achieving a harmonious and

prosperous society. The primary reason behind this problem is the lack of awareness among rural populations. The government fails to cultivate an environment where people understand the benefits of its initiatives. If smaller schemes were assessed, the outcomes would likely be equally disheartening. If rural people were made aware of the various welfare schemes provided by the Government of India and

and understood how to utilize them effectively, their lives could significantly improve. Therefore, this project aims to address this lack of awareness by informing rural populations about various government schemes and helping them utilize these resources effectively, thereby improving their quality of life.

By harnessing the power of technology, including innovative web applications and machine learning algorithms, this initiative seeks to bridge the gap between rural populations and government schemes. Through a user-centric approach and a commitment to efficiency and inclusivity, this project aims to revolutionize the delivery of government services, ultimately contributing to the socio-economic development and well-being of rural communities.

- **Enhance Access to Government Schemes:** BenefitBuddy improves access to government schemes by providing comprehensive information, eligibility checks, and application assistance through a user-friendly platform.
- **Bridge the Digital Divide:** By leveraging digital technology, BenefitBuddy bridges the digital divide in rural areas, providing online access to government schemes and ensuring equitable access to resources and opportunities.
- **Empower Rural Communities:** BenefitBuddy promotes digital literacy, increases awareness of government schemes, and facilitates the participation of marginalized populations in welfare programs and development initiatives, empowering rural communities.
- **Continuously Improve and Innovate:** BenefitBuddy continuously seeks feedback to identify areas for improvement and innovation, ensuring responsiveness to the evolving needs of rural communities and government schemes

### III. PROPOSED METHODOLOGY

Right now, there are different gainful government schemes that provincial individuals don't know about. This imaginative thought proposition is to give an answer for this ignorant circumstance. Through this framework the rustic individuals will be instructed such that they can become more acquainted with about what are the different plans that are outfitted by the administration and what are the plans they are qualified for. In this venture, at first we'll investigate the accessible government plans for the government assistance of provincial individuals. Subsequently, through this task the country understudies will come to think about different recipient plans given by government and they can see what the plans everyone is qualified for are for the most part and they can use those plans for the improvement of the provincial environmental factors.

The methodology adopted for this project involves several modular steps aimed at improving access to government schemes for rural communities through a user-friendly web application. The methodology encompasses data collection, system development, and outcome delivery.

#### Module 1: Data Collection

- **Gathering Scheme Information:** The project begins with comprehensive research to identify and gather information about various government schemes aimed at rural welfare. This involves studying government portals, official documents, and policy literature to compile a dataset of scheme details, including eligibility criteria, benefits, and application procedures.
- **User Data Collection:** User data, including demographic information (such as name, age, gender, occupation, income, etc.), is collected to assess eligibility for different schemes. This data is obtained through user input forms on the web application.

#### Module 2: Systems Development

- **Frontend Development:** The frontend module of the web application is developed using HTML, CSS, and React.js. This module includes designing a user-friendly interface where users can navigate through different scheme categories, view scheme details, and check their eligibility.

- **Backend Development:** The backend module, developed using Node.js and Express.js, handles the business logic and interacts with the database. It includes functionalities for processing user inputs, querying the scheme database, and generating eligibility results.
- **Database Management:** A MongoDB database is set up to store scheme information and user data. This database is populated with the scheme dataset collected during the preprocessing stage and is accessed by the backend to retrieve relevant information during user interactions

### Module 3: System Functionality and Testing

Our project serves as a bridge between government schemes and rural communities, empowering individuals with the knowledge and resources they need to improve their livelihoods and enhance their quality of life.

- **Eligibility Prediction:** The system predicts scheme eligibility for users based on their input data and the criteria defined for each scheme. This prediction is performed using algorithms such as decision trees or logistic regression, tailored to the specific requirements of the project.
- **User Feedback and Iteration:** User feedback is collected through the application to identify any usability issues or areas for improvement. Based on this feedback, iterative updates are made to enhance the functionality and user experience of the application.

### Module 4: Outcome Delivery

- **Result Presentation:** The predicted eligibility results are presented to users through the web application interface. Users can view a list of schemes they are eligible for, along with relevant details such as benefits, application procedures, and deadlines.
- **Continuous Monitoring and Maintenance:** The system is continuously monitored for performance and reliability. Regular maintenance activities, such as database updates, bug fixes, and security patches, are conducted to ensure smooth operation and user satisfaction.

## IV. IMPLEMENTATION

Our project focuses on providing access to information about government schemes tailored specifically for the state of Telangana, India. While we display a comprehensive list of central schemes available nationwide, our eligibility check feature is limited to the schemes applicable within Telangana. We have curated a selection of 11 schemes that are particularly relevant to the socio-economic landscape of Telangana. These schemes address a wide range of issues faced by rural communities, including agriculture, social welfare, healthcare, education, and infrastructure development. By narrowing our focus to schemes applicable within Telangana, we aim to provide targeted assistance and support to rural individuals in accessing the benefits they are entitled to.

### A. Government schemes in Telangana:

Before delving into the implementation details of the project, it is crucial to understand the government schemes available in Telangana, India. These schemes aim to address various socio-economic challenges faced by rural communities in the state. Here are the 11 schemes included in our project:

- **Rythu Bandhu Scheme:**

This scheme provides financial assistance to farmers to support agricultural investment and improve crop productivity.

- **Kalyana Lakshmi Scheme:**

Aimed at promoting social welfare, this scheme provides financial assistance to economically backward families for the marriage of their daughters.

- **Shaadi Mubarak Scheme:**

Similar to the Kalyana Lakshmi Scheme, Shaadi Mubarak provides financial support to minority communities for the marriage of their daughters.

- **Double Bedroom Housing Scheme (2BHK Scheme):**

The government of Telangana formulated the double bed room housing scheme in the month of October 2015 with a view to providing dignity to the poor by providing 100% subsidized housing

- **Kanti Velugu:**

The State Government has embarked on a Noble Project of achieving “avoidable blindness-free Telangana” status by conducting a Comprehensive and Universal Eye Screening for the entire population of the State under the title ‘Kanti Velugu’

• **KCR Kit Scheme:**

This scheme provides essential items to pregnant and lactating women to ensure maternal and child health.

• **Rs 5 Lakh Insurance cover to Farmers**

All the farmers in Telangana, who are aged between 18 and 60years, will get 5 lakh insurance coverage from 15 August 2018

• **Rythu Bima Scheme:**

In order to ensure the economic and social security of the farmers, the Government of Telangana has conceptualized and implementing an innovative scheme named as Farmers Group Life Insurance Scheme (Rythu Bima) in addition to other initiatives

• **Arogya Lakshmi Pathakam:**

The Government of Telangana envisions the overall development of the Scheduled Castes/Scheduled Tribes/Backward Classes/Economically Backward Classes (SC, ST, BC & EBC) and in particular, the unmarried Girls belonging to these communities who are the disadvantaged section of the society.

• **Dalit Bandhu:**

The scheme provides financial assistance of Rs. 10 lakhs to eligible SC families to start their own businesses or entrepreneurial ventures, thereby creating opportunities for them to become self-reliant and improve their standard of living.

• **Telangana Overseas Scholarship Scheme:**

Designed to support the higher education of students from minority communities, this scheme provides financial assistance for studying abroad.

**B. Proposed System Architecture:**

**Fig 4.1. Proposed System Architecture**

The BenefitBuddy web app will be built using a client-server architecture, with separate components for the frontend, backend, and database. The frontend will handle the user interface and interaction, the backend will manage the application logic and data processing, and the database will store the scheme information and user data.

**Frontend:**

The frontend will be developed using React.js, a popular JavaScript library for building user interfaces. It will consist of various components for displaying scheme information, eligibility forms, recommendations, and other user interface elements. The frontend will communicate with the backend via HTTP requests to retrieve data and submit user inputs.

• **Landing Page Design:**

The landing page is designed using HTML, CSS, and React.js to provide users with an intuitive interface. It includes navigation menus, search options, and scheme categories for easy access to information.

• **Scheme Category Pages:**

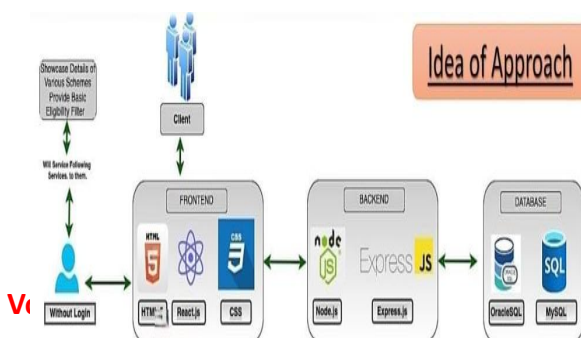
Separate pages are created for each scheme category (e.g., health, education, agriculture) to organize scheme information efficiently. Users can browse through these categories to find relevant schemes.

• **Eligibility Checker Form:**

An eligibility checker form is incorporated into the frontend, allowing users to input their details such as name, age, occupation, income, etc. This form guides users through the process of determining their eligibility for various schemes.

**Backend:**

The backend will be developed using Node.js and Express.js, providing a robust and scalable server-side environment. It will handle incoming requests from the frontend, process the



business logic, and interact with the database to fetch and update scheme information, user data, and eligibility checks. The backend will expose RESTful APIs for communication with the frontend.

- **API Development:**

The backend is developed using Node.js and Express.js to handle HTTP requests and responses. APIs are created to process user inputs from the frontend, query the database for scheme information, and generate eligibility results.

- **Eligibility Prediction Logic:**

Decision-making logic is implemented to predict scheme eligibility based on user inputs and scheme criteria. This logic evaluates user data against predefined eligibility rules for each scheme and generates eligibility outcomes.

### Database:

The database will be MongoDB, a NoSQL database that offers flexibility and scalability for storing structured and unstructured data. It will store information about schemes, categories, states, user details, eligibility forms, and eligibility results. MongoDB's document-oriented architecture will allow for efficient querying and manipulation of data.

- **Schema Design:**

A MongoDB database schema is designed to store scheme details, user data, and eligibility results. Collections are created for schemes, users, and eligibility outcomes, with appropriate fields and indexes for efficient data retrieval.

- **Data Population:**

The database is populated with scheme data collected during the preprocessing stage. Scheme details, including eligibility criteria, benefits, and application procedures, are inserted into the schemes collection.

### User's Device:

Users will access the BenefitBuddy web app through their web browsers on various devices such as desktops, laptops, tablets, or smartphones. The web browser will render the frontend components and handle user interactions.

### Web Server:

The web server will host the frontend code and serve it to users' devices upon request. It will also handle incoming HTTP requests from clients and forward them to the backend for processing.

### Application Server:

The application server will host the backend code and handle the business logic of the BenefitBuddy web app. It will process incoming requests, execute the necessary operations, and generate responses to be sent back to the clients.

### Database Server:

The database server will host the MongoDB database and manage the storage and retrieval of data. It will handle CRUD operations, indexing, and data replication to ensure data integrity and availability.

### C. Parameters for Eligibility Check

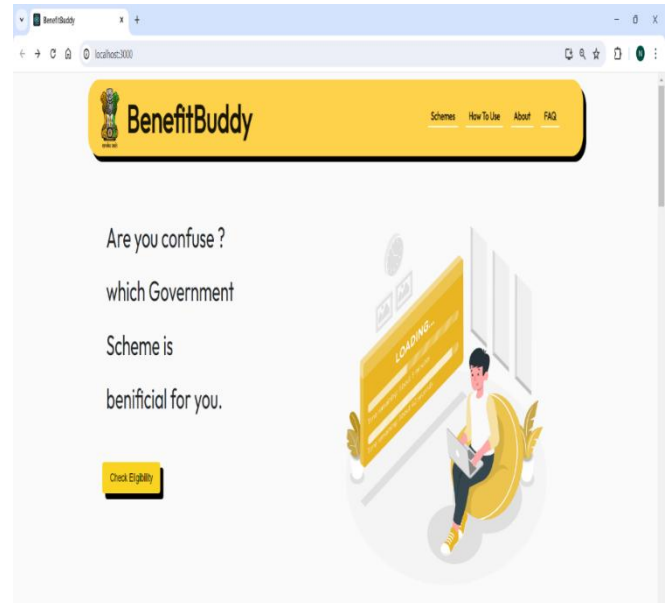
In our project, we have designed an eligibility checking feature to help users determine their eligibility for various government schemes. The eligibility criteria are based on several parameters that are specific to each scheme. These parameters include:

- **Personal Information:** Users are required to provide personal details such as name, age, gender, occupation, caste, and income. These details are essential for determining eligibility as many schemes have specific criteria based on demographic factors.
- **Residential Status:** Some schemes may have residency requirements, such as being a resident of a particular district or village within Telangana. Users may need to provide their residential address or location details to verify their eligibility.
- **Income Level:** Many schemes have income criteria, where individuals or households must fall below a certain income threshold to qualify for benefits. Users are asked to provide information about their annual income to assess their eligibility based on income levels.
- **Social Category:** Certain schemes provide preferential treatment or benefits for individuals belonging to specific social categories such as Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), or Minorities. Users are asked to specify their social category to determine eligibility for such schemes.
- **Occupation and Educational Status:** Some schemes may target specific occupational or educational groups, such as farmers, students, or women. Users may need to provide information about their occupation, educational status, or any special

circumstances such as disability or widowhood.

- **Family Details:** For certain schemes, eligibility may be determined based on family composition or dependency status. Users may need to provide details about their family members, including their relationship, age, and dependency status.
- **Scheme-Specific Criteria:** Each scheme may have unique eligibility criteria related to its objectives and target beneficiaries. These criteria could include factors such as land ownership, possession of specific documents, participation in certain programs, or meeting specific conditions related to health or employment.

By gathering information on these eligibility parameters, our system evaluates the user's eligibility for each scheme and provides personalized recommendations based on their profile. This eligibility checking feature aims to simplify the process of accessing government schemes by guiding users towards schemes for which they are eligible.



**Fig 5.1. Home Page/Landing Page**

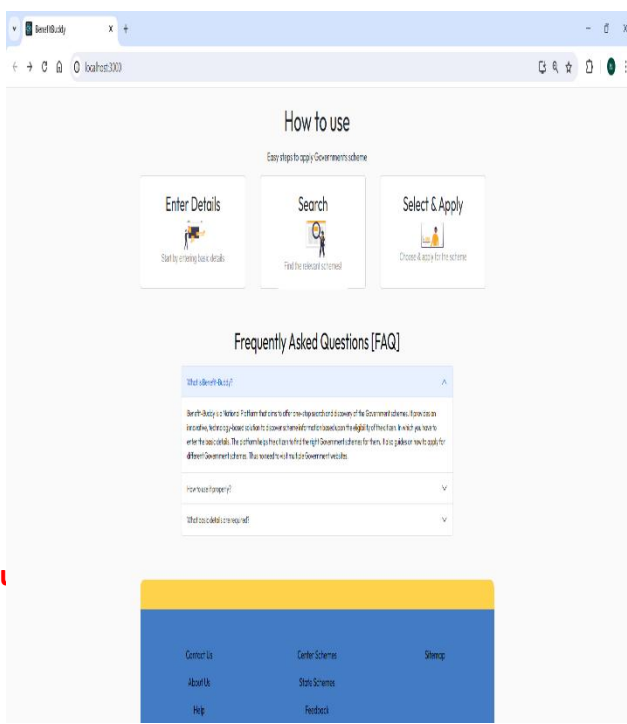
**Fig 5.2. FAQs**

## V. RESULT SCREENS

### A. Home Page



**Fig 5.3. Scheme based on Categories**





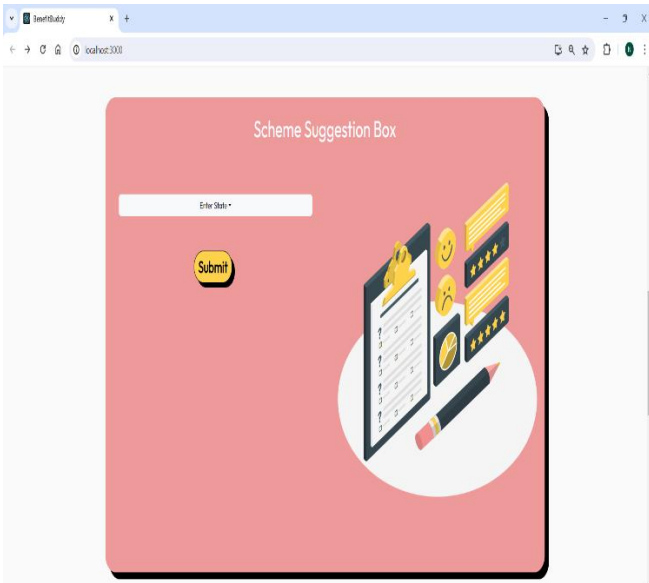


Fig 5.4. Scheme Suggestion Box

Fig 5.5. Specific Scheme Eligibility Check

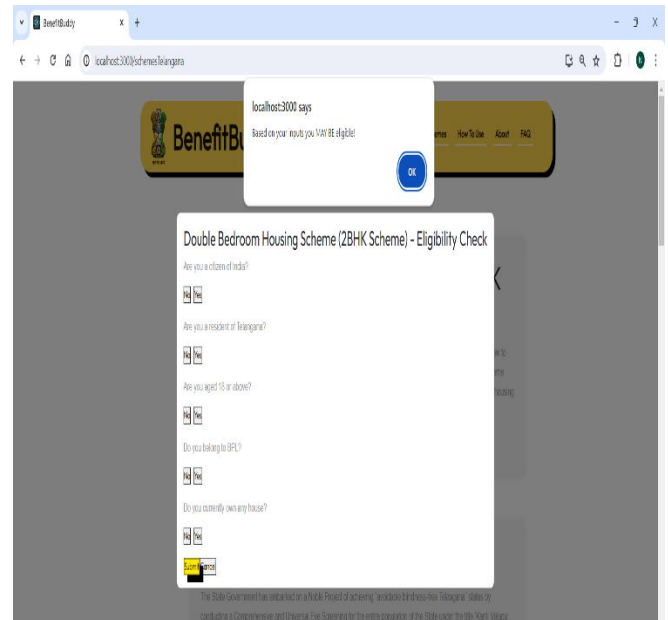


Fig 5.6. Eligibility Check Result

## VI. CONCLUSION

The Indian government inaugurates numerous ambitious programs trying to make the country more harmonious, hence creating an aware situation among rural people is very important. Through this innovative proposal the maximum utilization of the government schemes will be possible. The rural people can effectively make use of all the schemes furnished by the government of India for their welfare to the maximum extent. The amount spent by government for the welfare schemes will yield a worthy outcome. Thus according to the saying “Developed Villages—

Developed Nation”, India will move towards a prosperous future.

The BenefitBuddy project represents a significant step towards addressing the challenges faced by rural communities in accessing government schemes and benefits. Through the development of a comprehensive web application, the project aims to empower rural populations with information and support, ultimately improving their quality of life. By leveraging technologies such as React.js, Node.js, and MongoDB, BenefitBuddy offers a user-friendly platform that provides easy access to scheme information, eligibility checks, and other relevant resources. The BenefitBuddy project has culminated in the development of a robust web application designed to alleviate the challenges faced by rural communities in accessing government schemes and benefits. Through meticulous research and analysis, the project team identified the pressing need for a comprehensive solution to bridge the gap between rural populations and the resources available to them.

Throughout the project lifecycle, extensive research and analysis were conducted to understand the needs and preferences of rural populations, as well as the existing barriers to accessing government support. This informed the design and development of BenefitBuddy, ensuring that it meets the specific requirements of its target users. Rigorous testing methodologies were employed to validate the functionality, reliability, and performance of the application, resulting in a robust and effective solution. The project's success lies in its ability to address the specific needs and preferences of rural communities. Extensive research enabled the team to understand the unique challenges faced by rural populations, including limited access to information, bureaucratic hurdles, and socio-economic constraints. BenefitBuddy was meticulously designed to overcome these obstacles, offering features such as scheme information display, eligibility checks, and user-friendly interfaces tailored to the needs of rural users.

The successful implementation of BenefitBuddy marks a significant milestone in the journey towards inclusive growth and socio-economic development in rural areas.

By providing rural communities with the tools they need to navigate government schemes and benefits, the application has the potential to uplift millions of lives, promote financial inclusion, and bridge the gap between urban and rural populations. Moving forward, continuous updates, enhancements, and stakeholder engagement will be essential to maximize the impact and sustainability of BenefitBuddy, ensuring its continued relevance and effectiveness in empowering rural communities across the country.

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