

PUBLIC DISTRIBUTION SYSTEM

A PROJECT REPORT

Submitted by

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221463142004

In Partial fulfilled for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Science Engineering

[Artificial Intelligence & Machine Learning]

Shree Dhanvantary College of Engineering and Technology, Kim



Gujrat Technological University, Ahmedabad

April 2025



Shree Dhanvantary College of Engineering and Technology

Near Railway Station, Kim East, Surat, Gujrat 394110

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Government Yojana** has been carried out by **Shobha parsad** under my guidance in partial fulfilment for the degree of Bachelor of Engineering in Computer Science Engineering [Artificial Intelligence and Machine Learning], 8th Semester of Gujarat Technological University, Ahmadabad during the academic year 2024-25.

Signature

Mrs. Trupti Gondaliya

Internal Guide

Signature

Mrs. Trupti Gondaliya

Head of Department

[Industry Letter Head]

Date: DD/MM/YYYY

TO WHOM IT MAY CONCERN

This is to certify that Shobha hareram parsad, a student of Shree Dhanvantary College of Engineering and Technology has successfully completed his internship in the field of MERN Stack from 20/01/2025 to 19/04/2025 (Total number of Weeks: 12) under the guidance of Nitin Dube.

His internship activities include <Internship Activities>.

During the period of his internship program with us, he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish him every success in his life and career.

For Weclocks Technology Pvt. Ltd.



Shree Dhanvantary College of Engineering and Technology

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DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Government Yojana** submitted in partial fulfilment for the degree of Bachelor of Engineering in Computer Science Engineering [Artificial Intelligence and Machine Learning] to Gujarat Technological University, Ahmedabad, is a Bonafide record of original project work carried out by me at Weclocks Technology Pvt. Ltd. under the supervision of Mr. Nitin Duby and that no part of this report has been directly copied from any student's reports or taken from any other source, without providing due reference.

Name of Student

Signature

1. Shobha Parsad

Acknowledgement

I would like to express my sincere gratitude to **We Clocks Technology** for providing me with the opportunity to intern on the **Government Yojana Project**. This internship has been an invaluable learning experience that has significantly contributed to my professional and personal development.

I am deeply grateful to my mentor, **Mritunjay Kumar** for her invaluable guidance, encouragement, and support throughout my internship. Her insights and advice have been instrumental in helping me develop new skills and knowledge, particularly in the MERN stack.

I would also like to thank **Nitin Dube**, my company mentor, for his support and guidance. His expertise and feedback were crucial in ensuring the success of the project.

Additionally, I appreciate the collaborative environment provided by my colleagues at We Clocks Technology. Their patience and openness created a pleasant working environment that facilitated my learning and growth.

This internship has been a defining period in my career, and I could not have achieved it without the help and support of everyone involved. Thank you.

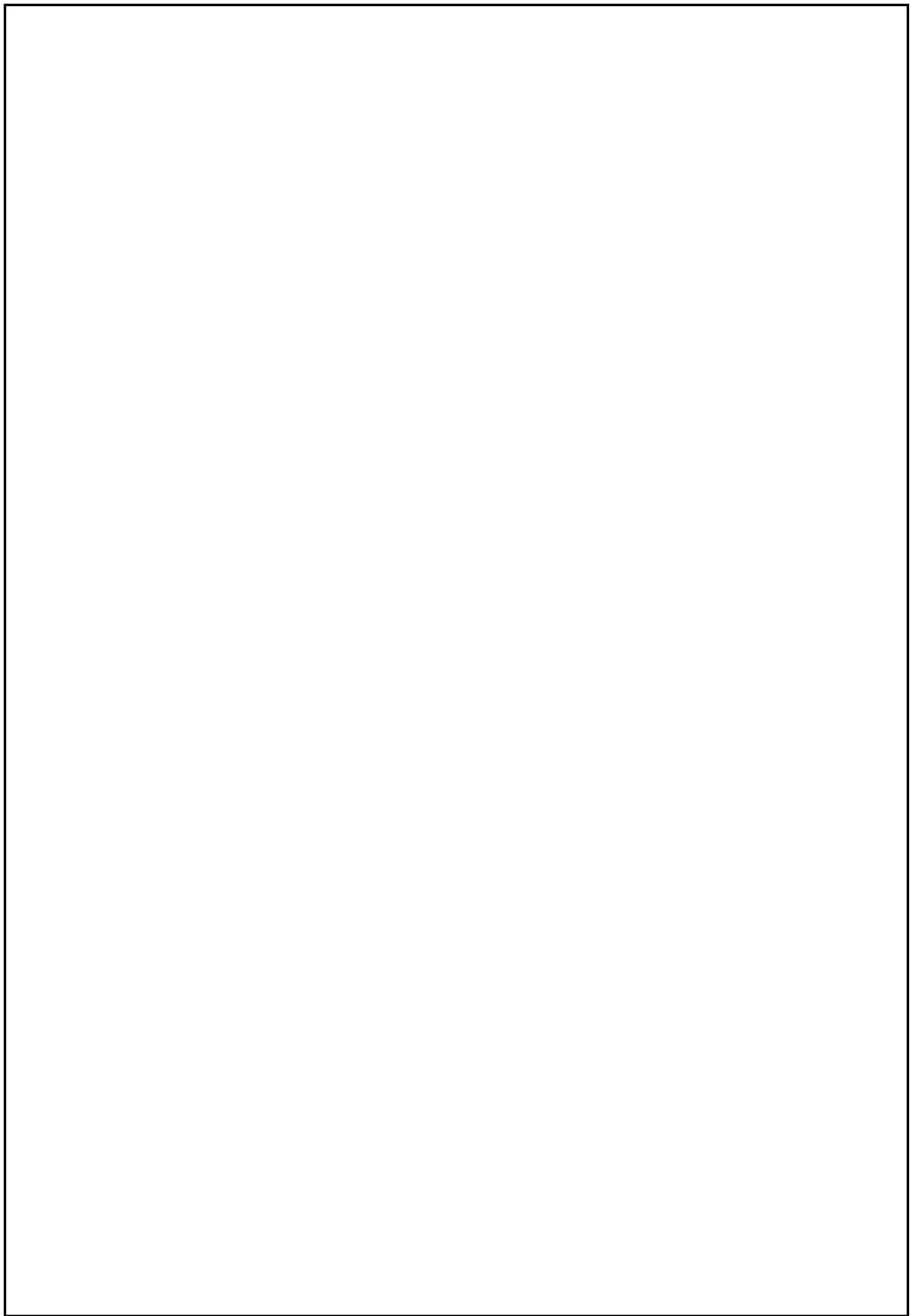
This acknowledgement section is designed to express gratitude to your mentors, the company, and any other individuals who contributed to your internship experience.

Abstract

*This internship report presents a detailed overview of my work on the **Government Yojana Project** during my internship at **We Clocks Technology**. The core objective of this project was to design and develop a full-stack application aimed at digitizing the application, management, and tracking process of various government welfare schemes (Yojanas). Leveraging the **MERN stack** (MongoDB, Express.js, React.js, Node.js), the system was built to simplify citizen interactions with government services and streamline administrative tasks.*

*During the internship, I gained hands-on experience in setting up the development environment, implementing secure **JWT-based authentication**, and developing modules for **user management**, **application handling**, and **document verification**. Key features such as a responsive beneficiary dashboard, role-based access control, dynamic reporting tools, and real-time notifications were successfully implemented. I also worked on integrating **data visualization** components for better analytics and built REST APIs for scalable back-end operations.*

This project not only strengthened my software development and project management skills but also deepened my understanding of how technology can be applied to solve real-world problems in public service delivery. The experience significantly contributed to my technical growth and prepared me for professional challenges in full-stack development and government-tech solutions.



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Abbreviation

MERN	MongoDB, Express, React, and Node.js
JS	Java Script

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CHAPTER 3: Internship Overview and Management

3.1 Internship Summary:

The Government Yojana project are initiatives launched by the Government of India to uplift and support various sections of society. These schemes aim to improve the quality of life by providing financial assistance, social security, education, healthcare, employment, housing, and more. As an intern at We Clocks Technology, I worked as a MERN Stack Developer, responsible for building both frontend UI components using React.js and Tailwind CSS and backend functionalities using Express.js and My SQL. My role included handling CRUD operations, authentication, API development, UI enhancements, and performance optimization.

During my internship under the Government Yojana, I had the opportunity to gain valuable insights into the functioning and implementation of government welfare schemes at the grassroots level. This internship provided me with a practical understanding of public administration, data handling, beneficiary management, and field operations.

3.2 Purpose:

The primary purpose of government Yojanas (schemes) is to improve the standard of living and promote inclusive growth by addressing the needs of different sections of society, especially the poor, marginalized, and underprivileged. These schemes are designed to provide support in areas such as health, education, employment, housing, agriculture, and financial inclusion

- To reduce poverty by providing financial aid, subsidies, and employment opportunities.
- To support vulnerable groups like women, children, senior citizens, differently-abled, and economically weaker sections.
- To promote digital infrastructure and services across the country.
- To ensure affordable healthcare and quality education for all.

- To bring every citizen into the formal banking system and provide access to financial services.

3.3 Objective:

The key objectives of the project are:

1. To reduce poverty and inequality in society.
2. To provide financial and social security to the poor and needy.
3. To generate employment and improve livelihood opportunities.
4. To promote education, healthcare, and sanitation for all.
5. To support farmers, women, youth, and rural communities.
6. To encourage self-reliance through skill development and entrepreneurship.
7. To achieve inclusive and sustainable development across the nation.
8. To ensure access to basic services like housing, electricity, water, and banking.

These objectives help in building a strong, self-sufficient, and equitable society where every citizen has the opportunity to grow and live with dignity.

3.4 Scope:

The scope of a Government Yojana project outlines the extent and reach of the scheme, including the target beneficiaries, areas of impact, and how it will be implemented and monitored. It highlights what the project aims to achieve and how it will benefit society. The project has a **wide and impactful scope** as it directly contributes to the nation's development goals by uplifting disadvantaged groups and promoting equality, sustainability, and growth. It plays a crucial role in shaping a better future for all citizens.

3.4.1 The system can do:

- ✓ Citizens can apply for schemes online.
- ✓ Collects details like name, income, documents, etc.
- ✓ Automatically checks if applicants meet the criteria.
- ✓ Uses Aadhaar, income certificates, and other databases.
- ✓ Allows users to check the status of their application in real time.
- ✓ Transfers subsidies or funds directly to the beneficiary's bank account.

- ✓ Reduces corruption and middlemen.
- ✓ Displays available government schemes with details like eligibility, benefits, and how to apply.

3.4.2 The system cannot do (Limitations):

- ✗ Many rural or tribal regions lack internet connectivity or digital literacy, making it hard for people to use the system.
- ✗ Not all beneficiaries are comfortable using online systems, mobile apps, or websites.
- ✗ Errors in submitted documents or lack of valid IDs can lead to rejection or delays in application.
- ✗ System errors, slow loading, or server failures can prevent users from applying or checking their status.
- ✗ If Aadhaar or bank details are not updated correctly, users may not receive benefits.

3.5 Technology and Literature Review:

3.5.1 Technology Stack Used:

- Frontend: React.js, Tailwind CSS, Heroicons, datatables.net
- Backend: Express.js, Node.js
- Database: MySql
- Authentication: JWT (JSON Web Tokens)
- Libraries Used:
 - ShadCN (for UI components)
 - Datatables.net (for interactive tables)
 - React-icons (for icon-based UI)

3.5.2 Comparison with Existing Systems:

Traditional Government yojana systems offer limited to physical offices, Manual form filling, high chances of error, Paper-based, risk of loss/damage, Applicants have to visit offices and susceptible to corruption and manipulation. Our system overcomes these issues

by addresses these gaps by offering a smarter, more inclusive, and technology-driven platform for effective implementation and monitoring of public welfare schemes.

3.6 Internship Planning:

3.6.1 Development Approach and Justification

The project followed the Agile methodology, ensuring continuous development and iteration based on feedback. The development process included:

1. Requirement Gathering – Understanding project needs.
2. UI Design & Prototyping – Wireframing in Figma.
3. Database Schema Design – Structuring MySQL collections.
4. Frontend & Backend Development – Implementing React components and Express.js APIs.
5. Testing & Debugging – Ensuring system stability.
6. Deployment – Preparing for production release.

3.6.2 Effort, Time, and Cost Estimation:

- Total Development Time: ~2 months
- Daily Effort: 6-8 hours
- Cost Estimation:
 - Development (UI, API): 60% of effort
 - Testing & Debugging: 20% of effort
 - Optimization & Deployment: 20% of effort

3.6.3 Roles and Responsibilities:

Table 3.1 Roles and Responsibilities

Role	Responsibilities
Intern (MERN Stack Developer)	Developing React UI, API integrations, authentication, and CRUD operations.
Senior Developer (Mentor)	Code reviews, guidance on best practices, and performance optimization.

Project Manager	Planning sprints, setting goals, and monitoring progress.
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3.6.4 Group Dependencies

- The backend team ensured APIs were available for frontend integration.
- The UI team worked on creating a consistent design system.
- The database team ensured proper indexing and data retrieval.

3.7 Internship Timeline and Gann Chart:

The Government Project follows a structured development timeline to ensure smooth execution and timely delivery. The key phases of the project include:

1. Project Setup – Establishing the development environment and integrating essential tools and frameworks.
2. Authentication System Development – Implementing a secure registration and login system for citizens and administrators.
3. Beneficiary Dashboard & UI Setup – Creating a user-friendly interface for beneficiaries to access scheme-related information.
4. Yojana Application Management – Developing features to allow users to apply for various government schemes (yojanas).
5. Admin Panel for Application Review – Implementing functionalities for officials to manage, review, and approve/reject applications.
6. Document Upload & Verification Module – Enabling secure document submission and backend verification processes.
7. Final Testing & Deployment – Conducting comprehensive testing and deploying the project for public and administrative use.

Table 3.2 Scheduling

Task	Start Date	End Date
Project Setup	10-Feb-2025	12-Feb-2025
Authentication Development	12-Feb-2025	18-Feb-2025
Beneficiaries Dashboard & UI Setup	19-Feb-2025	26-Feb-2025
Yojana Application Management	27-Feb-2025	05-Mar-2025
Admin panel for Application Review	06-Mar-2025	07-Mar-2025

Document Upload & Verification Module	15-Mar-2025	22-Mar-2025
Final Testing & Deployment	23-Mar-2025	19-Apr-2025

The Gantt Chart below represents the timeline for these phases, showing the start and end dates for each task and their dependencies.

Fig 3.1 Gann

CHAPTER 4: System Analysis

4.1 Study of Current System:

Before initiating the development of the Government Yojana Management System, it was important to evaluate the existing processes used for managing government welfare scheme applications. The current system is largely dependent on manual paperwork, physical document submission, and non-standardized verification procedures. These outdated methods result in inefficiencies, delays, and poor user experiences for both applicants and government officials. The key observations from the current system study are as follows:

- Application submission is paper-based, making it difficult to track and manage.
- Document verification is done manually, which slows down the approval process.
- Applicants have limited visibility into the status of their applications.
- Administrative communication is fragmented, leading to delayed decisions.
- There is no centralized database, resulting in data duplication and loss of information.

4.2 Problems and Weaknesses of the Current System:

The assessment of the existing Government Yojana application and management process reveals several key limitations that hinder operational efficiency and transparency. These issues affect both beneficiaries and administrative departments. Major weaknesses identified in the current system are:

- ✖ Manual Application Handling – Physical forms and offline processes result in delays and data loss.
- ✖ Lack of Transparency – Beneficiaries are not informed about their application status in real-time.
- ✖ Time-Consuming Verification – Manual document verification increases processing time and workload.
- ✖ No User Authentication Mechanism – There is no secure login or role-based access system in place.

4.3 Requirements of the New System:

To streamline the management of government welfare schemes and improve overall service delivery, the new system must incorporate several functional and technical enhancements. These improvements will eliminate paperwork, ensure data accuracy, and provide real-time monitoring for both beneficiaries and administrators. The essential requirements of the new Government Yojana Management System are:

- ✓ Real-Time Application Tracking – An interactive dashboard that displays the status of each Yojana application for both users and admins.
- ✓ Secure Authentication – Role-based access control using JWT for Beneficiaries, Admins, and Verifiers.
- ✓ User-Friendly Interface – Clean, accessible React-based UI/UX for easy navigation and interaction.
- ✓ Centralized Database – MySQL-based database for structured and secure storage of applicant and scheme data.
- ✓ Document Upload & Verification Module – A feature for users to upload necessary documents and for admins to verify them digitally.



Fig 4.1 User Dashboard

4.4 System Feasibility:

Before implementing the new system, a feasibility study was conducted to ensure that the proposed Government Yojana Management System meets organizational goals while remaining technically sound and cost-effective.

4.4.1 Contribution to Organizational Objectives:

A digitized Yojana management system plays a vital role in improving transparency, reducing manual intervention, and speeding up the overall process. The proposed system aligns with the government's digital transformation goals in the following ways:

- ✓ **Improved Service Delivery** – Citizens can apply for schemes without visiting government offices.
- ✓ **Increased Efficiency** – Automation of application processing and document verification minimizes delays.
- ✓ **Enhanced Data Accuracy** – Centralized storage eliminates data duplication and manual entry errors.
- ✓ **Support for Data-Driven Governance** – Instant reports and statistics help in monitoring scheme performance.

4.4.2 Feasibility in Technology, Cost & Schedule:

- ✓ **Technology Compatibility** – The system uses widely adopted and stable technologies like React.js, Node.js, and MySQL, ensuring future support and scalability.

- ✓ Cost Efficiency – As the project leverages open-source tools, it significantly reduces development and deployment costs.
- ✓ Development Timeline – The system is designed to be completed within a two-month internship duration, aligning with the academic and project delivery schedules.

4.4.3 Integration with Other Systems:

The system is designed with flexibility in mind to ensure it can adapt to future requirements and integrate with government-level platforms.

- ✓ **API-Ready Architecture** – REST APIs allow integration with Aadhaar, e-KYC, or other government databases.
- ✓ **Modular System Design** – Future modules like subsidy disbursement, grievance redressal, or mobile app access can be seamlessly added
- ✓ **Cross-Platform Support** – The system is capable of running on cloud-based or government-hosted infrastructure for wider accessibility.

4.5 Activity / Process in the New System:

The new Government Yojana Management System is designed with a clear, streamlined workflow to enhance the experience of both citizens and administrators. Each process is built to ensure security, accuracy, and transparency in scheme application and management.

Key Process Flow:

- **User Authentication** – Secure login system with role-based access for Beneficiaries, Admins, and Verifiers using JWT.
- **Yojana Application Submission** – Beneficiaries can fill out scheme-specific application forms and upload required documents.
- **Document Verification** – Admins can review, verify, and approve/reject uploaded documents through a centralized admin panel.
- **Real-Time Application Tracking** – Beneficiaries can view their application status through an interactive dashboard.
- **Data Filtering & Search** – Admins can filter applications by status, date, scheme type, and user using searchable data tables.

- **Report Generation** – Auto-generated reports in PDF/Excel format for scheme-wise analytics and application tracking.
- **Notification System** – Email/SMS alerts for users regarding submission confirmations, status updates, and approvals.

Fig 4.2 Workflow

4.6 Features of the New System:

To enhance the efficiency and accessibility of welfare scheme management, the new **Government Yojana Management System** incorporates a variety of modern features designed to benefit both citizens and administrators.

- 🚀 **Modern & Responsive UI** – Built using **React.js** and **Tailwind CSS**, the interface provides a smooth, mobile-friendly, and accessible experience for all users.
- 🔒 **Secure Authentication** – Implements **JWT-based login** with role-based access control for Beneficiaries, Admins, and Verifiers to ensure secure system access.
- 📊 **Interactive DataTables** – Enables real-time filtering, searching, and pagination of applications and user data using dynamic tables.
- 📁 **Application & Document Management** – Users can apply for schemes and upload required documents, which are stored securely and can be reviewed by admins.
- 📋 **Admin Dashboard & Application Review** – Admins can view pending applications, verify documents, and approve/reject submissions with one click.
- ✉️ **Notifications & Alerts** – Automatic email or SMS alerts are sent to users regarding application status updates, document verification results, and approvals.
- 🖨 **Custom Reports** – Generates PDF/Excel reports based on scheme-wise analytics, application trends, and verification outcomes to support decision-making.

4.7 Main Modules / Components / Processes of the New System:

The **Government Yojana Management System** is modular in nature, with each component focused on a specific function to ensure a smooth and efficient workflow. Below is an overview of the main modules integrated into the system:

Module Name	Description
Authentication	Secure JWT-based login with role-based access for Beneficiaries and Admins.
Dashboard	Centralized interface for beneficiaries to view application status and updates.
Document Upload & Verification	Upload required documents; admins can verify and approve them.
Admin Panel	Admins manage users, review applications, and generate reports.
Notifications	System sends automated alerts on application status and document issues.
Packaging & Scheme Management	Organizing product shipments.
Reports & Analytics	Generate PDF/Excel reports on Yojana applications, approval rates, etc.

4.8 Selection of Hardware / Software / Algorithms / Methodology:

To ensure high performance and smooth deployment of the system, the appropriate combination of hardware, software, and development methodology was selected.

4.8.1 Hardware Requirements:

- **Server:** Cloud-based deployment (e.g., Render, Railway, or Vercel)
- **Client Machines:** Minimum 4 GB RAM, Intel Core i3 or higher processor
- **Database Server:** Hosted on MySQL with secure remote access

4.8.2 Software Used:

- ✓ **Frontend:** React.js, Tailwind CSS
- ✓ **Backend:** Node.js (without Express.js, for lightweight structure)
- ✓ **Database:** MySQL (via XAMPP in local dev, MySQL)
- ✓ **Authentication:** JSON Web Tokens (JWT)
- ✓ **Libraries:**
 - datatables.net for search, sort, and pagination
 - recharts.js for dynamic chart-based reports

4.8.3 Methodology & Justification

- 🌀 **Agile Methodology** – Development was divided into weekly sprints with testing and feedback loops.
- ☒ **Custom MERN-Like Stack** – Although Express.js is not used, the project follows the MERN structure with manual routing for backend logic.
- 📊 **DataTables & Charts** – Improve administrative insight and citizen engagement.
- 🔒 **Secure RESTful API Design** – JWT ensures secure login and controlled access to data and admin features.