



SMART INDIA HACKATHON 2024



- **Problem Statement ID – 1638**
- **Problem Statement Title** - *AI based identification of Financial (Banking & Insurance) needs based on demography and economic / farming Cycle "While the Post Office Network serves everyone, everywhere, on all days, the need for various services including financial and insurance services has a seasonal variation to it. There is a need to time communication and support to customers at times they require it most based on their daily routines. A robust system to segment, target and focus on each customer based on their needs from time to time is needed for India Post to direct its service force to make efforts in response to such needs."*
- **PS Category- Software**
- **Theme- Miscellaneous**
- **Team ID- 21192**
- **Team Name -Swades**

POSTMAN BECOMES BANKER

"Just as India Post once connected every village with letters, our solution will now connect each region with tailored financial services, using data and AI."



PROPOSED SOLUTION (Three Step Solution to tackle every challenge)

Step 1: Identification of Trends

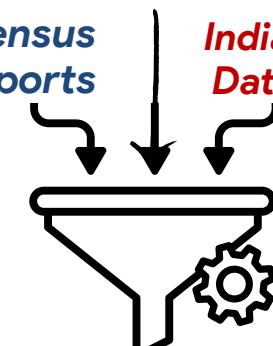
The solution features an **AI-powered system** with a **Dashboard** that visualizes collected data for **India Post officials**



KEY COMPONENTS

Data Collection & Integration

Economic data
Census reports
India Post Datasets



A back-end system will gather data **via APIs**.

Visualization & Reporting

A dashboard will display key metrics like **age**, **gender**, and **predicted demand** for savings schemes.

AI/ML Model

- Predicts customer needs & segmentation.
- Identifies suitable financial products by region.

Step 2: Automated Reports and Insights

- AI system automatically generates insightful reports from demographic data.**
- Reports include graphs and are shared with divisional post offices.**

KEY COMPONENTS

Automated Reports



Recommendations Engine



Step 3: Targeted Marketing & Campaigns

- The Marketing plan will include both Physical melas and Digital marketing strategies tailored to rural areas.**

TARGETED MARKETING



- Physical Melas:** Events will be organized in regions identified by the AI as having high demand for specific schemes.
- Digital Marketing:** Use SMS, local radio, and community announcements to reach rural populations, ensuring widespread awareness of the postal savings schemes.



- The Grameen Foundation's approach to underserved communities will inspire effective rural outreach for the solution.**

Technology Stack:

Website

Front End : React

Back End : Flask

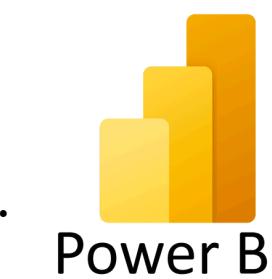
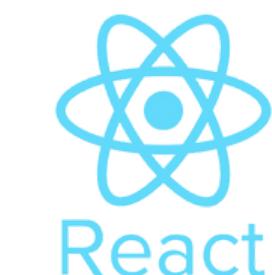
Database: PostgreSQL



Features

1. Reports & Analytics

- Power BI for dynamic visualization
- Flask serving as the API for fetching raw data.
- Celery for generating reports asynchronously.
- React.js frontend for user interaction.



Various
Data



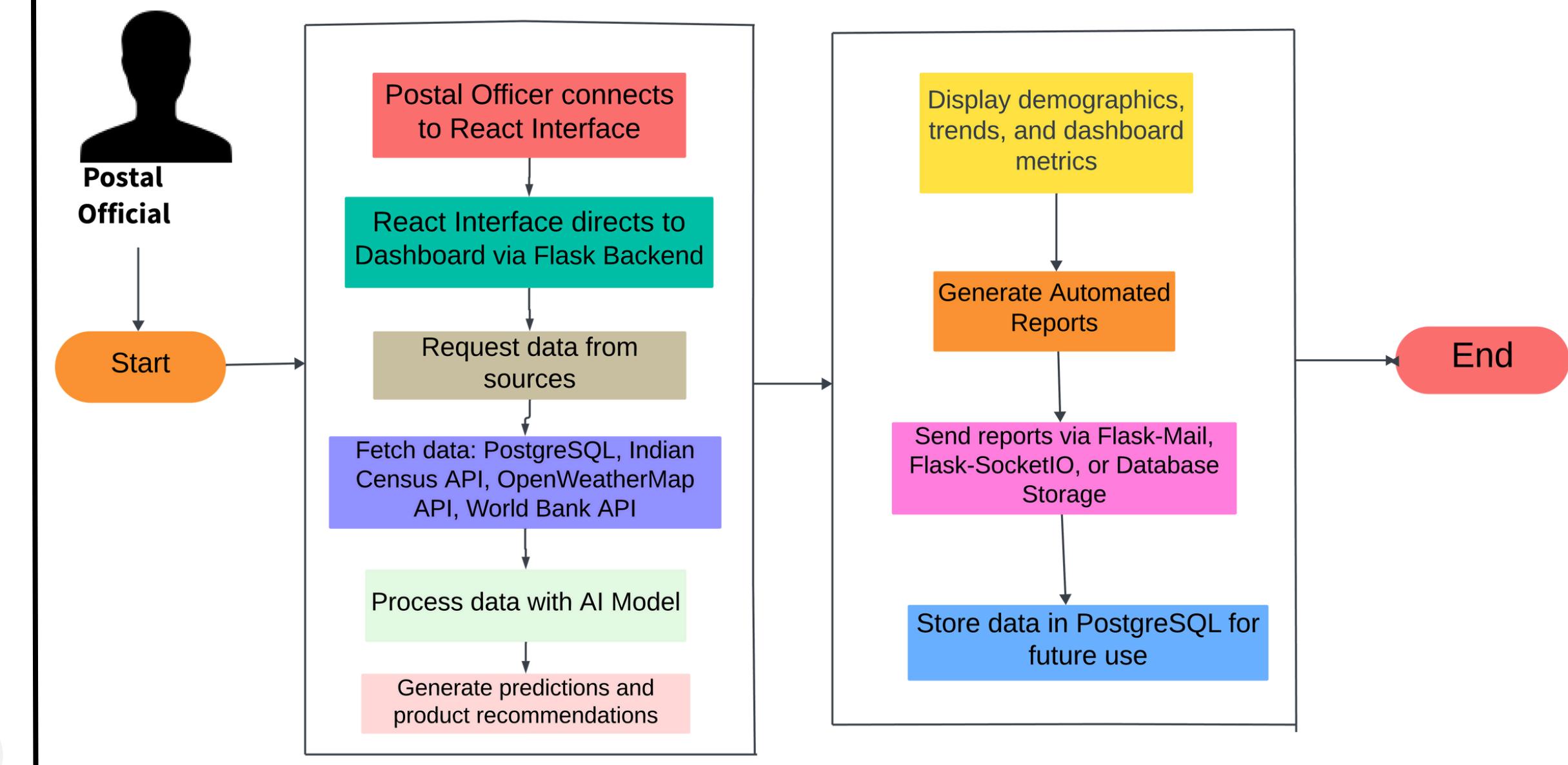
2. Dashboards

- Power BI for dynamic visualization
- Flask serving as the backend API to fetch data from a PostgreSQL database.
- React.js frontend for displaying visual insights.

3. AI-Powered Service Recommendations

- Flask as the backend with machine learning algorithms.
- TensorFlow for implementing machine learning models.
- PostgreSQL for storing demographic and historical financial data.

Use case



4. Communication & Alerts System

- [Flask-Mail](#) for sending automated email notifications.
- [Flask-SocketIO](#) for real-time communication.
- PostgreSQL for storing user preferences and alert history.

5. APIs used

- [Indian Census API](#) for demographic data.
- [OpenWeatherMap API](#) for farming cycles and weather data.
- [World Bank Data API](#) for economic data.

1. Analysis of Feasibility

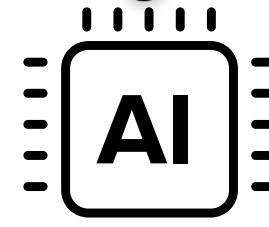
- The required technologies, including



Data Visualization
Tools



AL & ML



Web Platform

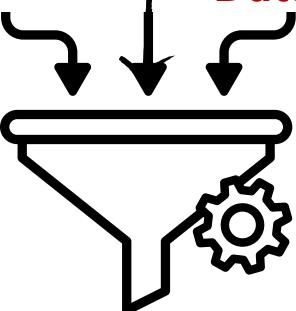
are **mature** and **reliable** for implementation.

- Readily available data sources (Census, India Post datasets) for building the system.

- Cloud infrastructure supports scalability.



Economic data
Census reports
India Post Datasets



2. Potential Challenges and Risks

- Data Inconsistencies:** Gaps in rural data may affect predictions.
- Adoption Resistance:** Local staff may resist new AI tools.
- Limited Infrastructure:** Internet access issues in rural areas



Strategies for overcoming the challenges

- Data Validation:** Cross-checking with multiple sources.
- Training Programs:** Simplified system with user-friendly dashboards and guides.
- Offline Features:** Enable System Application to work offline.

Innovation and Uniqueness

AI-driven
demographic analysis

Automated
insights

Targeted
rural marketing

Goal/Purpose

FINANCIAL
INCLUSION

To Serve the Underserved
with finance services

Social Impact

- Improved financial literacy and access to postal savings schemes for underserved rural populations.
- Personalized services will cater to specific regional needs, empowering communities to make better financial decisions.



Economic Benefits:

- Increased participation in savings schemes can boost national savings rates and provide financial security for rural households.
- Targeted marketing and timely promotions will drive higher conversions, improving India Post's revenue.



Environmental Impact

- Reduced paper usage due to digitalized insights and reports, contributing to sustainability efforts.



Details / Links of the reference

<https://repository.iimb.ac.in/handle/2074/20685>

(Marketing and brand positioning of India post)

<https://pib.gov.in/PressNoteDetails.aspx?NotId=152040&ModuleId=3®=3&lang=1>

(India Post Payments Bank (IPPB): A Catalyst for Financial Inclusion)

<https://grameenfoundation.org/documents/orv5em88wxhx2b985u1p.pdf>

Details / Links of our research work

Do check it out we have listed more details about the application

- **Features in the web application**

<https://docs.google.com/document/d/1R9MBSWm4AijZqBt3dee2V1E2J7Y1B2qOPnwaiABQW9o/edit?usp=sharing>

- **Technical approach for building the application**

<https://docs.google.com/document/d/130ST8RrEm7rXizDt3cMpdPHH6DjEi9ps1rzFYRgePsw/edit>