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SetuOne: An AI-Powered Government Services Guidance System for Personalized Life Event Planning and Document Management

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ABSTRACT :

Citizens often need to consult multiple government portals to identify services, eligibility conditions, required documents, and application procedures associated with important life events. SetuOne is proposed as an AI-powered government service assistance platform that brings these requirements together in a centralized interface. Users can create a profile, optionally manage family members, select a life event or search for a service, and receive a personalized action plan. The platform includes government service guidance, potential scheme recommendations, nearby office discovery, document management, task tracking, and reminders. The proposed architecture uses React.js for the frontend, Node.js and Express.js for backend services, MongoDB for application data, Gemini API for AI-assisted analysis, Google Maps API for location features, and Firebase services for authentication, storage, and notifications. SetuOne aims to make government-service information easier to navigate while emphasizing that eligibility and requirements must be verified through official sources.

Keywords: SetuOne, e-Governance, Artificial Intelligence, Life Events, Government Services, Document Management, Personalized Guidance

1. Introduction

Accessing government services can be complicated when information is distributed across different departmental portals and service centers. Citizens may need to identify several procedures, documents, eligibility requirements, and service locations for a single life event. Repeated data entry and independent tracking of documents or pending activities can add to this effort.

Two further challenges are the difficulty of identifying services that apply to an individual situation and the lack of a unified checklist connecting related activities. A citizen managing marriage, childbirth, relocation, education, retirement, or a new business may need to consult several sources and independently organize the next steps.

This paper presents SetuOne, an AI-powered government service assistance platform designed around these needs. The main contributions are:

- A centralized interface for browsing life events and discovering related government services.
- Personalized action plans that organize service requirements, documents, and procedures.
- AI-assisted interpretation of life-event descriptions to help identify potentially relevant services.
- Government scheme guidance and location-based discovery of nearby service offices.
- Document management, task tracking, expiry reminders, and life-event history.

The remainder of the paper is organized as follows. Section 2 reviews related work. Section 3 describes the proposed system. Section 4 explains the architecture and implementation. Section 5 discusses the interface and system outcomes. Section 6 concludes the paper and outlines future enhancements.

2. Related work

Digital government platforms provide online access to public services and help citizens find information about government procedures. However, citizens may need to navigate multiple portals to identify the documents, eligibility criteria, and application procedures associated with a particular life event. SetuOne aims to address this challenge by organizing government service information around citizens' life events and providing personalized guidance through a unified interface.

Existing technologies such as artificial intelligence, cloud storage, database management systems, and mapping services support the development of integrated digital applications. AI-assisted systems can interpret natural-language requests and identify potentially relevant services, while database systems help organize user profiles, service details, and task information. SetuOne combines these technologies to provide personalized action plans, document management, government scheme recommendations, and location-based identification of nearby government offices.

Digital authentication and notification services further improve the security and usability of government assistance platforms. Firebase Authentication supports user login, while cloud storage and notification services help manage documents and reminders. SetuOne also incorporates task tracking and document expiry reminders to help citizens organize their responsibilities. However, the accuracy of service information and eligibility recommendations depends on reliable data and verification through official government sources.

3. Problem statement and objectives

Citizens face several challenges when accessing government services, including (1) scattered information across multiple government portals; (2) difficulty identifying the required documents, eligibility criteria, and application procedures; (3) lack of personalized guidance based on individual life events; (4) challenges in tracking pending activities and document expiry dates; and (5) difficulty finding nearby government offices and relevant government schemes.

The objectives are to: (a) provide a centralized platform for accessing government service information; (b) generate personalized action plans based on citizens' life events and requirements; (c) identify potentially eligible government schemes and benefits; (d) support document upload, verification, storage, and expiry reminders; (e) help users track tasks and complete dependent activities in the correct sequence; and (f) improve accessibility through location-based services, family member management, and a user-friendly interface.

4. System architecture

4.1. Overview

SetuOne follows a multi-layer architecture designed to simplify access to government services through a centralized platform. The presentation layer provides a user-friendly interface developed using React.js, allowing citizens to manage profiles, browse life events, access personalized action plans, and track their progress. The application layer uses Node.js and Express.js to handle API requests, process user information, and coordinate communication between the frontend, database, and external services. The data layer uses MongoDB to store user profiles, family details, life events, government service information, and task records. Gemini API supports AI-assisted life event analysis, while Google Maps API provides location-based government office information. Firebase services support authentication, document storage, and notifications. This architecture enables the system components to work together and provides a structured approach to managing government-service requirements.

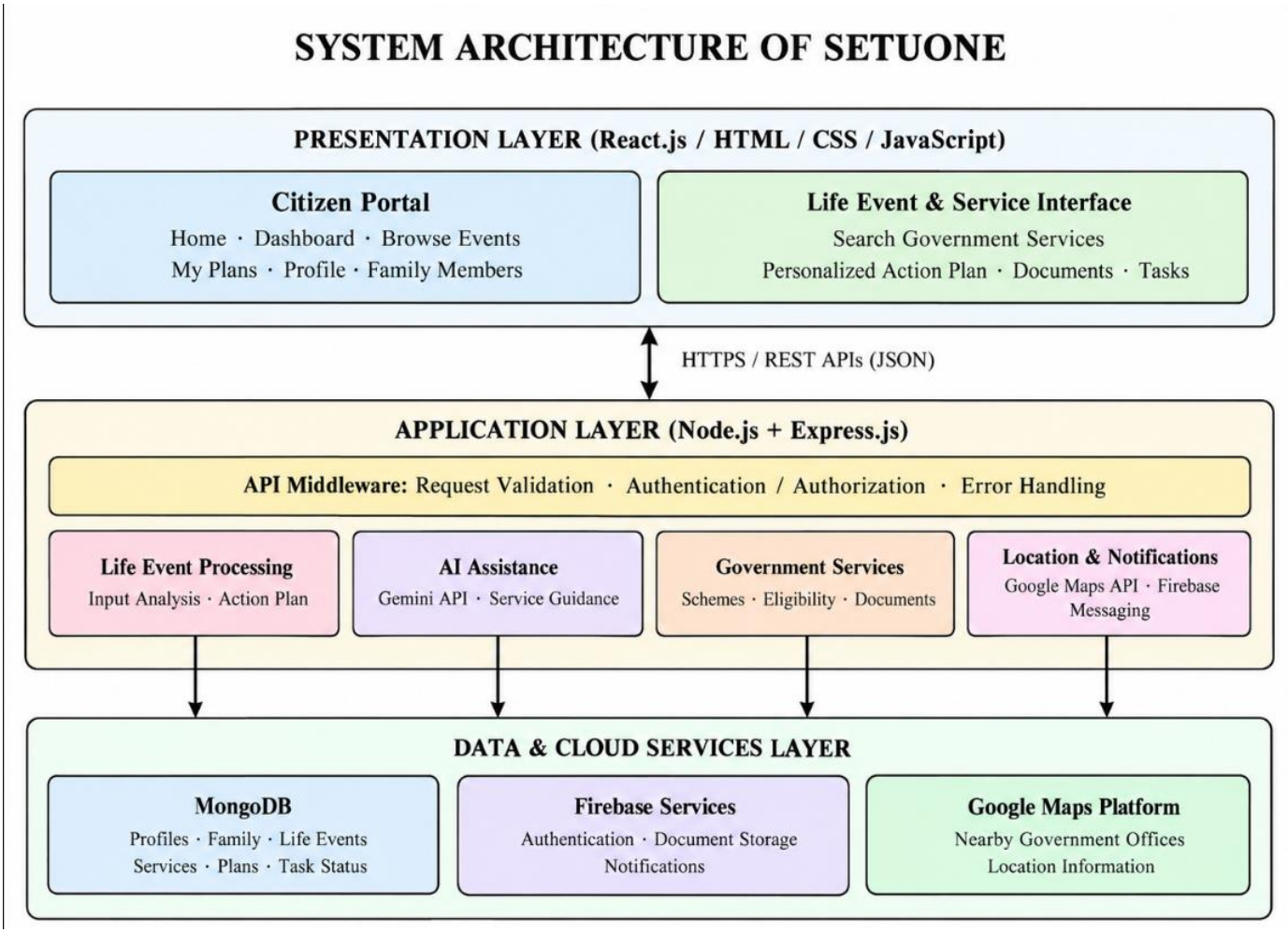


Fig. 1. Proposed System Architecture of SetuOne.

4.2. Technology stack

Table 1 lists the technologies used. The frontend deliberately avoids a framework build pipeline so that pages load quickly on low-specification factory tablets.

Table 1 – Technology Stack of SetuOne.

Layer	Technology	Purpose
Client	HTML5, CSS3, JavaScript (ES2022)	Manager and worker portals; no framework build step
Speech	Web Speech API (SpeechRecognition, SpeechSynthesis)	Tamil (ta-IN) and English (en-US) voice input and audio output
Application	Node.js, Express 4	REST API, middleware chain, static delivery
Data access	node-postgres (pg), pg-mem	Pooled parameterized queries; in-memory fallback
Security	jsonwebtoken, bcryptjs, dotenv	Signed tokens, password hashing, secret isolation
AI assistant	OpenAI Node SDK (optional)	Natural-language manager chat; deterministic engine when no key
Testing	Native Node.js HTTP test suite	utomated assertions (npm test)

4.3. Database design

The database design of SetuOne uses MongoDB to store and manage user profiles, family members, life events, government services, scheme details, action plans, task records, and document metadata. The database organizes information into collections with appropriate fields and references to maintain data consistency. User records are associated with their respective life events, personalized action plans, and task progress. Document metadata and expiry dates are maintained to support document management and renewal reminders. Database operations handle the creation, retrieval, updating, and storage of records required by the application, ensuring efficient information access and reliable management of government-service activities.

4.4. Security

Security is an essential component of the SetuOne system, ensuring that users can access their personal information and documents securely. Firebase Authentication is used to support user registration and login. Authentication and authorization mechanisms help prevent unauthorized access to user profiles, family details, life events, and stored documents.

The system uses secure communication between the frontend and backend to protect information during data transmission. Input validation and error handling help prevent invalid requests and improve application reliability. Access to personal records and uploaded documents should be restricted to authorized users. Sensitive configuration details, including API keys and database credentials, must be stored securely in environment variables and excluded from version control. These security measures help maintain data confidentiality, integrity, and reliability throughout the application.

5. AI production intelligence and simulation

The intelligence layer of SetuOne is designed to interpret citizens' requirements and provide organized guidance for government services. The system uses AI-assisted life-event analysis, structured service information, and user profile details to identify relevant activities. The recommendations are presented as guidance, while eligibility criteria and application requirements must be verified through official government sources.

5.1 Life event identification and analysis

SetuOne allows users to select a life event from the available catalog or enter their requirements through a search interface. The Gemini API supports natural-language analysis to identify the user's needs and suggest potentially relevant government services. The system supports different life events, including marriage, welcoming a child, relocating to another city, starting a business, purchasing property, higher education, and retirement. This approach helps users identify the government-related activities associated with important life changes.

5.2 Personalized Action Plan Generation

The system generates a personalized action plan based on the selected life event, available user profile details, and relevant government service information. The plan organizes related activities into a structured checklist containing required documents, procedures, and task descriptions. Tasks can be tracked through the dashboard, allowing users to identify completed activities and determine the next steps. This feature improves the organization of government-service requirements and simplifies progress monitoring

5.3. Government Scheme Recommendation

SetuOne helps users discover potentially relevant government schemes and benefits based on their available profile information, family details, and life-event requirements. The system presents scheme-related information to help citizens understand the benefits and eligibility conditions that may apply to their circumstances. The recommendations serve as guidance, and final eligibility must be confirmed through the relevant official government portal or authority.

5.4. Document Management and Expiry Tracking

The document management module helps users organize documents required for government services. Users can upload and manage their documents, access stored document information, and review verification status where supported by the system. The platform also supports document expiry tracking and reminders for upcoming renewals. These features help users maintain organized records and reduce the possibility of overlooking important document updates.

5.5. Task Tracking and Life Event Completion

The task tracking module monitors the progress of activities associated with each life event. The dashboard displays active plans, completed steps, and overall progress, helping users identify pending requirements. Once all required activities have been marked as completed, the system updates the life-event status and generates a completion summary. The completed event is then maintained in the user's life-event history for future reference.

6. IMPLEMENTATION

The SetuOne system is implemented as a web-based platform that helps citizens access government service information and organize the activities associated with important life events. The implementation integrates a React.js frontend, a Node.js and Express.js backend, a MongoDB database, and external services for AI assistance, authentication, document storage, location-based search, and notifications. The system is organized into functional modules to support user interaction, service guidance, and progress tracking.

6.1. User Registration and Authentication

The user authentication module enables citizens to register and securely log in to the platform using Firebase Authentication. After authentication, users can access their profiles and available system features. Profile information can be used to personalize life-event guidance and organize service-related activities according to the user's requirements

6.2. Life Event Management

The life event management module allows users to explore available life events and select the event relevant to their circumstances. Based on the selected event, the system organizes related government-service requirements and provides guidance on the activities that may need to be completed. This module helps users manage multiple life events and review their associated action plans.

6.3. AI-Based Guidance and Action Plans

The AI assistance module integrates the Gemini API to support natural-language understanding and generate guidance related to users' selected life events. The system presents relevant information and helps organize service-related activities into actionable steps. The generated guidance is intended to assist users in understanding procedures and requirements; official government sources remain the authority for current rules and final eligibility decisions

6.4. Document and Task Management

The document management module supports uploading and storing users' documents through Firebase Storage. Document-related information can be organized for reference during government-service procedures. The task management module enables users to track the progress of activities in their action plans, identify pending tasks, and review completed activities. Expiry reminders are intended to help users monitor documents that require renewal, according to the features implemented in the system.

6.5. Location Services and Notifications

The location services module uses the Google Maps API to help users identify nearby government offices relevant to their service requirements. Firebase Cloud Messaging supports notifications and reminders where configured. These functions help users access location-related information and stay informed about pending activities or important document-related dates.

6.6. Backend and Database Integration

The backend is developed using Node.js and Express.js to process application requests and coordinate communication between the frontend, database, and integrated services. MongoDB stores relevant application data, including user profiles, life-event information, action plans, task records, and document metadata, according to the implemented database structure. The integration of these components enables the platform to manage user information and deliver its core functionality through a unified web interface.

7.Results and discussion

The SetuOne platform is designed to provide an integrated environment for life-event management and government service guidance. The system combines user authentication, life-event selection, AI-assisted guidance, document management, task tracking, and location-based service discovery. These modules aim to simplify the process of identifying relevant government services and organizing the activities associated with important life events.

7.1. Functional Verification

Functional verification focuses on examining the major modules of the SetuOne platform. The verification process can cover user registration and login, profile management, life-event selection, action plan generation, document handling, task progress tracking, and nearby government office discovery. Each function should be checked against its expected behavior to identify errors and confirm that the implemented features operate correctly.

7.2. AI-Assisted Guidance Evaluation

The AI-assisted guidance module uses the Gemini API to support the generation of life-event-related information and action plans. The generated guidance is intended to help users understand relevant procedures, required documents, and possible government services. The usefulness of the guidance depends on the accuracy and relevance of the generated information. Users should verify important requirements and scheme eligibility through official government sources before taking action.

7.3. User Interface and Module Integration

The React.js frontend provides the interface for interacting with the platform, while the Node.js and Express.js backend handles application requests and communication with the database and integrated services. MongoDB supports the storage and retrieval of application data. The integration of these components is intended to provide a unified workflow for managing life events, reviewing action plans, and tracking activities through a common interface.

7.4. Discussion

SetuOne brings multiple government-service support functions together within a single platform. Personalized action plans can help users organize their responsibilities, while document management and task tracking support better record organization and progress monitoring. AI-assisted guidance provides an accessible way to explore service-related information, and location services help users identify nearby government offices. However, the reliability of the system depends on the accuracy of the information provided, the availability of integrated services, and the successful verification of implemented functions. Further usability testing and evaluation with real users can help assess the platform's effectiveness and identify areas for improvement.

8. Conclusion and future scope

8.1. Conclusion

SetuOne is a web-based platform designed to simplify access to government service information by organizing guidance around important life events. The system integrates user authentication, life-event management, AI-assisted guidance, personalized action plans, document management, task tracking, and location-based government office discovery. By combining these functions within a unified platform, SetuOne aims to help citizens understand service-related requirements, organize necessary activities, and monitor their progress. The integration of React.js, Node.js, Express.js, MongoDB, Gemini API, Firebase services, and Google Maps API provides the technical foundation for the platform. Overall, SetuOne offers an organized approach to life-event-based government service guidance, while users are encouraged to verify important procedures and eligibility requirements through official government sources.

8.2. Future Enhancement

Future enhancements may include integrating additional verified government service databases and official portals to improve the availability and reliability of service information. The recommendation module could be enhanced to provide more context-specific guidance based on user requirements and applicable eligibility criteria. Multilingual support could make the platform accessible to citizens who prefer regional languages. Additional improvements may include advanced reminder customization, improved document expiry notifications, accessibility enhancements, and a mobile application for convenient access. Furthermore, usability studies and systematic evaluation with citizens could help identify practical limitations and improve the overall effectiveness of the SetuOne platform.

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