**Prepare an SRS document in line with the IEEE recommended standards for the specified Case Study. (Functional Requirements)**

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**1. Introduction**

**1.1 Purpose**

* The purpose of this SRS document is to outline the detailed requirements, functionalities and specifications of the “Web-Based Voice -Activated” Expense Tracking and Geo-Limit Enforcement App.” It serves as a comprehensive reference for the project’s stakeholders, including developers, designers, testers and project managers, to understand the project’s scope and objectives.

**1.2 Scope**

* The scope of this project encompasses the development of a web-based application that offers voice-activated expense tracking and Geo-Limit enforcement features. It includes defining the functionalities, user interactions, and system behaviour within predefined geographical areas. It has too secure user data from unauthorised access.

**1.3 Definitions, Acronyms, and Abbreviations**

* **Voice Recognition:** The technology that enables user to input expenses using voice-commands.
* **Geo-Limit Enforcement:** The feature that allows used to set and monitor spending limits within specific geographical areas.
* **SRS:** Software Requirements Specification, the document you are currently reading.
* **GPS:** Global Positioning System, a satellite-based navigation system used for location tracking.
* **API:** Application Programming Interface, a set of rules that allows different software applications to communicate with each other.
* **UI:** User-Interface, the graphical or visual elements that users interact with.

**1.4 References:**

* There are no External references or documents referenced in the SRS document. All information contained herein is specific to project.

**1.5 Overview**

* The “Web-Based Voice-Activated Expense Tracking and Geo-Limit Enforcement App” is a modern solution designed to help individuals manage their personal finances more efficiently. By harnessing the power of voice recognition and GPS technology, the application aims to simplify expense tracking and promote responsible financial behaviour.
* This document provides a detailed breakdown of the project’s requirements including user authentication, voice-activated expense entry, geo-limit enforcement, expense tracking, notifications, user profile management, and an admin panel. It also outlines the project’s objectives, target, user and the context in which it operates.
* The subsequent sections of this SRS document delve into the specifies of the application’s functionalities, design and technical requirements, offering a comprehensive guide for the successful development and implementation of the “Web-Based Voice-Activated Expense Tracking and Geo-Limit Enforcement App.”

**2. Introduction**

**2.1 Product Perspective**

* The "Web-Based Voice-Activated Expense Tracking and Geo-Limit Enforcement App" operates within a broader software ecosystem. It functions as a standalone web application that interacts with user devices, databases, and external services. While it is independent in terms of its core functionalities, it may integrate with other financial or location-based services through APIs (Application Programming Interfaces) for enhanced features.

**2.2 Product Functions**

The product offers the following key functions:

* User Authentication and Registration: Users can create accounts, log in securely, and manage their profiles.
* Voice-Activated Expense Entry: Users can input expenses using voice recognition technology.
* Geo-Limit Enforcement: Users can set geographical spending limits and receive notifications for limit exceedance.
* Expense Tracking: The app tracks expenses within predefined areas and provides users with spending insights.
* Notifications: Users receive real-time notifications for important events.
* User Profile Management: Users can update their profiles, including personal information and security settings.
* Admin Panel (New): Administrators can manage user accounts, expenses, and system settings.

**2.3 User Classes and Characteristics**

The application caters to different user classes:

* Regular Users: Individuals who use the app for personal expense tracking and financial management.
* Administrators: Authorized personnel who manage user accounts, expenses, and system settings.
* Characteristics of regular users may include varying levels of tech-savviness, financial literacy, and geographic mobility. Administrators possess additional privileges and responsibilities related to system administration.

**2.4 Operating Environment**

The application operates in a web-based environment and is accessible through standard web browser on desktops, laptops, tablets, and mobile devices. It is compatible with modern browsers such as Google Chrome, Mozilla Firefox, Apple Safari and Microsoft Edge. The backend infrastructure relies on PHP and MySQL for server-side processing and data storage.

**2.5 Design and Implementation Constraints**

The design and implementation of the application are subject to certain constraints, including:

* **Budget Limitations:** The project must adhere to budget constraints as specified by the client.
* **Technology Stack:** The application is developed using PHP and MySQL for backend services, which are chosen based on project requirements and client preferences.
* **Security Measures:** The application must adhere to industry-standard security practices, including password hashing and encryption to protect user data.

**2.6 User Documentation**

User documentation will be provided int the form of online help guides and user manuals. This resource will offer step-by-step instructions on using the application’s features, setting up accounts, and troubleshooting common issues.

**2.7 Assumptions and Dependencies**

Assumptions made during project planning include:

* Availability of GPS services for location tracking.
* Adequate user training and support during the application’s launch.
* Compliance with relevant data privacy regulations.
* Dependencies:
* The application may depend on third-party APIs for location services and voice recognition.
* The project’s success depends on meeting budget and timeline constraints as specified by the client.
* This detailed overview of the application’s overall description provides a comprehensive understanding of its context, functionalities, user classes, operating environment, constraints, user documentation, and key assumptions and dependencies.

**3. Specific Requirements**

**3.1 External Interface Requirements**

**3.1.1 User Interface**

Description: This section outlines the user interfaces of the application.

It includes a description of the web pages, screens, and components that users

interact with. This is where you specify how the user interacts with the app, including the layout and design.

**3.1.2 Hardware Interfaces**

Description: If the application interacts with any specific hardware components or requires specific hardware configurations, those are detailed here. This could include hardware like microphones or GPS modules if relevant to your voice-activated and geo-limit enforcement features.

**3.1.3 Software Interfaces**

Description: In this section, you list and describe any third-party software, libraries, or APIs that your application integrates with. This could include the voice recognition library/API, databases, or external services.

**3.1.4 Communication Interfaces**

Description: If your application communicates with external systems or services, you specify how this communication occurs. It could involve APIs, protocols, or any other means of data exchange.

**3.2 Functional Requirements**

**3.2.1 User Authentication and Registration**

Description: This section details the functionality related to user registration and authentication. It explains how users create accounts, log in securely, and manage their profiles within the app.

**3.2.2 Voice-Activated Expense Entry**

Description: Here, you define the functional requirements for the voice-activated expense entry feature. This includes how users initiate voice commands, the voice commands supported, and how the app processes these commands to record expenses.

**3.2.3 Geo-Limit Enforcement**

Description: This section outlines how geographical spending limits are enforced within the app. It explains how users set these limits, how the app tracks expenses in specific areas, and how it notifies users when limits are exceeded.

**3.2.4 Expense Tracking**

Description: You specify the requirements for expense tracking and management. This includes how users add, view, edit, and delete expenses are categorised and stored.

**3.2.5 Notifications**

Description: This section details to notification system within the app. It explains the types of notifications users receive, the triggers for these notifications (e.g., limit exceedance), and how users interact with notifications.

**3.2.6 User Profile Management**

Description: Here, you outline the functionality related to user profiles. This includes how users view and edit their profiles, update personal information, and manage account settings.

**3.3 Performance Management**

Description: Performance requirements specify the performance characteristics that your application should meet. This could include response times, system scalability, and resource usage under different conditions.

**3.4 Security Requirements**

Description: Security requirements define the security measures your application must implement. This includes measures to protect user data, ensure access control, and encryption of sensitive information.

**3.5 Software Quality Attributes**

Description: Software quality attributes encompass aspects like usability, reliability, maintainability, and more. This section outlines the specific quality attributes your application should adhere to.

**3.6 Other Requirements**

Description: This section is for any additional requirements that don't fit into the previous categories. It can cover miscellaneous requirements, constraints, or standards that the project should comply with.

Each section serves as a comprehensive guide to designing, developing, and testing your application, ensuring that all aspects of functionality, performance, and security are addressed.

**4. Appendix**

**4.1 Glossary**

Description: The glossary section contains a list of specialized terms, acronyms and abbreviations used throughout the document. Provides definitions and explanations of terms to ensure clarity and common understanding among all stakeholders.

**4.2 Analysis Models**

Description: The analysis models section typically includes visual representations or diagrams that help stakeholders better understand the system's architecture, behaviour, or data flow. This could include flowcharts, UML diagrams (e.g., use case diagrams, class diagrams), or any other relevant models that aid in system analysis and design.

**4.3 Supplementary Requirements**

Description: The supplementary requirements section contains additional information or requirements that don’t fit into the primary functional or non-functional requirements sections. These may include legal or regulatory compliance requirements performance benchmarks, or specific constraints that the project must adhere to.