**System Requirement Specifications**

**1. SYSTEM REQUIREMENT SPECIFICATIONS**

**1.1 Introduction**

**1.1.1 Purpose:** The purpose of this document is to provide a detailed description of the system requirements for the AI-Driven Personal Finance Assistant (PFA). This mobile application will help users manage their finances by offering features like budget tracking, bank account linking, AI-generated financial insights, and reminders for bill payments.

**1.1.2 Intended Audience and Reading Suggestions :**This document is intended for developers, testers, project managers, stakeholders, and anyone involved in the planning, design, and implementation of the AI-Driven Personal Finance Assistant. Readers should have a basic understanding of mobile application development and financial technologies.

**1.1.3 System Scope:** The system is a mobile-based application that allows users to manage personal finances. Key features include user registration, secure login, bank account integration, budgeting, financial goal tracking, automatic transaction categorization, AI-driven suggestions, bill reminders, and secure data export.

**1.2 Overall Description**

**1.2.1 System Function** The system enables users to:

* Register and log in securely
* Link and verify bank accounts
* View financial overviews and transaction history
* Automatically categorize expenses
* Set and monitor budgets and savings goals
* Receive AI-based suggestions and notifications
* Export financial data in PDF or Excel
* Manage bills and receive reminders
* Log out and delete account securely

**1.2.2 User Classes and Characteristics**

* **New Users**: Register with personal information, receive OTP for verification
* **Registered Users**: Full access to all features including dashboard, financial insights, and goal tracking
* **Admin/Backend Support**: Manage application data, perform maintenance and support

**1.2.3 Operating Environment**

* **Mobile OS**: Android 10+, iOS 13+
* **Backend**: Cloud-based server using REST APIs
* **Database**: Secure cloud database for user data and transactions

**1.2.4 Design and Implementation Constraints**

* Must comply with data privacy regulations (e.g., GDPR)
* Secure communication using HTTPS
* OTP delivery depends on third-party SMS/email providers

**1.2.5 Assumptions and Dependencies**

* Users have internet connectivity
* Users have access to bank accounts that support digital verification
* AI module depends on transaction data availability and accuracy

**1.3 External Interface Requirements**

**1.3.1 User Interface**

* Intuitive UI for mobile platforms
* Forms for registration, login, budget setting, and manual entry
* Graphical representation of financial data (pie charts, bar graphs)
* Push notification interface

**1.3.2 Software Interface**

* Integration with email/SMS gateways for OTP and notifications
* APIs for fetching and storing bank and transaction data
* Export module supporting PDF/Excel generation
* AI engine for analysis and suggestion generation

**1.4 System Features**

* Secure User Registration and Login
* Bank Account Linking and Verification
* Dashboard with Financial Overview
* Manual Transaction Entry
* AI-Powered Categorization and Insights
* Budget Management
* Notification System for Budgets and Bills
* Bill Management and Reminders
* Financial Goals Tracking
* Export Financial Data (PDF, Excel)
* Logout and Account Deletion

**1.5 Other Non-Functional Requirements**

**1.5.1 Performance Requirements**

* Real-time update of dashboards and transactions
* AI insights should be generated within 2 seconds of data update
* Notifications should be delivered instantly upon trigger condition

**1.5.2 Security Requirements**

* Data encryption at rest and in transit
* Multi-factor authentication for login
* Role-based access control
* Regular security audits and penetration testing

**1.5.3 Safety Requirements**

* Data loss prevention through daily backups
* Failsafe account recovery mechanisms
* Secure deletion of user data upon request