

Software Design Document (SDD)

1. Introduction

This document provides the design architecture of the **Software Personal Management System**. It describes the system structure, major components, database design, and constraints involved in the development of the software. The document serves as a reference for developers and testers during implementation.

2. System Architecture

The Software Personal Management System follows a **three-tier architecture**:

- **Presentation Layer:**
Provides the user interface for managing tasks, notes, reminders, and personal information.
- **Application Layer:**
Contains business logic for processing user requests, validating data, and managing system operations.
- **Data Layer:**
Handles data storage and retrieval using a database.

Modules

- User Authentication Module
- Task Management Module
- Notes and Reminder Module
- Database Management Module

3. Detailed Design

Class Design

- **User Class:** userId, username, password
- **Task Class:** taskId, title, dueDate, status
- **Note Class:** noteId, content, createdDate
- **Reminder Class:** reminderId, time, message

Data Flow Description

1. User enters data through the interface
2. Data is validated by the application logic
3. Valid data is stored in the database
4. System retrieves and displays updated information

Logic Description

- Authentication logic verifies user credentials
- Task and reminder logic ensures correct scheduling
- Error handling manages invalid inputs

4. Database Design

Entity Relationship Description

- One User can manage multiple Tasks
- One User can create multiple Notes
- One User can set multiple Reminders

Data Storage Approach

The system uses a **relational database** (MySQL/SQLite). Data is normalized to reduce redundancy, and passwords are stored securely using encryption techniques

5. Design Constraints

Hardware Constraints

- Minimum 4 GB RAM
- Standard personal computer or mobile device

Software Constraints

- Operating System: Windows / Linux / Android
- Backend Language: Java / Python
- Database: MySQL / SQLite

Regulatory Constraints

- User data privacy must be maintained
- Secure authentication and access control must be implemented