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Lab 1: Software Requirement Specification (SRS)

Objective:
To understand and write a formal Software Requirement Specification (SRS) document.

Tools:
- MS Word
- Google Docs

Activities:
1. Identify requirements
2. Functional & Non-functional requirements
3. List assumptions & constraints
4. Define system scope

Deliverables:
- SRS document for a sample system (Example: Library Management System)

Software Requirement Specification (SRS) Document

Project Title: Library Management System

Step 1: Feasibility Study
A library needs automation to reduce manual effort and errors. It is technically feasible, economically beneficial, and operationally simple.

Step 2: Requirement Gathering
Collected via observation, staff discussion, and student feedback. Includes cataloging, issuing/returning books, fine calculation.

Step 3: Requirement Analysis
Conflicts removed, requirements prioritized: Book management (high), Member management (high), Reports (medium).

Step 4: Requirement Specification
Inputs: Book, Member, Transaction details.
Outputs: Availability, Issue/Return receipts, Fine reports.

Step 5: Requirement Validation
Verified with librarian and staff to ensure accuracy.

Step 6: Requirement Documentation (SRS Creation)
This document is the formal record of requirements.

Step 7: Requirement Review
Reviewed with librarian and IT staff to correct ambiguities.

Step 8: Requirement Baseline / Sign-off
Requirements frozen after approval; changes via change management.

Step 9: Requirement Management / Maintenance
Future updates (e.g., digital library, mobile access) will be handled through requirement maintenance.

1. Introduction
1.1 Purpose: Define requirements for LMS.
1.2 Scope: Manage books, members, transactions, fines, and reports.
1.3 Assumptions & Constraints: Users know basics of computers; only authorized users manage system.

2. Overall Description
Users: Librarian, Staff, Students.
Features: Catalog management, book issue/return, reports.

3. Functional Requirements
1. Book Management
2. Member Registration
3. Book Issue & Return
4. Fine Calculation
5. Report Generation

4. Non-Functional Requirements
Usability, Reliability, Security, Performance, Scalability.

Lab 2: Project Identification & Proposal

Project Title: Student Management System

Problem Statement

Schools and educational institutions face challenges in managing student data such as enrollment details, grades, and attendance using manual or paper-based systems. These traditional methods are time-consuming, prone to errors, and make it difficult to retrieve or update records efficiently. As a result, there is a need for a computerized system that can automate student record management, improve accuracy, and save time for administrators, teachers, and students.

Objectives

1. To develop a system that stores and manages student records securely.
2. To automate processes such as enrollment, attendance, and grading.
3. To provide an easy way of retrieving and updating student information.
4. To generate reports that can help teachers and administrators make better decisions.

Scope of the Project

The Student Management System will be designed for use in schools and educational institutions. It will cover functions such as:

- Student registration and profile management.
- Attendance tracking.
- Grade and academic performance management.
- Report generation for administrative purposes.

The system will focus on efficiency, accuracy, and user-friendliness. However, it will not include advanced features like online fee payment or parent portals in its initial version.