# **Software Requirements Specification**

**Project:** Classroom Booking and Room Management System for Independent University, Bangladesh  
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## **1. Introduction**

### **1.1 Purpose**

This document outlines the software requirements for the Classroom Booking and Room Management System, designed to streamline the process of booking classrooms and labs for faculty members at the Independent University, Bangladesh. In order to know the requirements of this application, a meeting was done with the Mr. Ahad, who is incharge of room management and classroom bookings of the CSE department.

### **1.2 Document Conventions**

* Bold text indicates section headers.
* Italics are used for key terms.
* Code or URLs are highlighted in monospaced text.

### **1.3 Intended Audience & Reading Suggestions**

This document is intended for:

* Developers
* Project Managers
* System Administrators
* End-users (Faculty and Admins)

It is suggested to read through sections in order, especially if implementing or developing the system.

### **1.4 Project Scope**

The Classroom Booking and Room Management System enables faculty members to book rooms for classes and labs efficiently. The system manages room availability, allows administrators to add/remove rooms, and provides a conflict-free scheduling interface.

### **1.5 References**

* IEEE Standard 830-1998 for Software Requirements Specifications.
* University internal guidelines on room usage and scheduling.

## **2. Overall Description**

### **2.1 Product Perspective**

The system is intended to support classroom and lab bookings at the university, working as a web-based interface for faculty and administrators. It aims to replace manual booking processes and reduce scheduling conflicts.

### **2.2 Product Features**

* Room search and booking by faculty.
* Room availability conflict management.
* Room management (Add/Remove rooms) by admins.
* Rooms can be searched based on capacity, availability and timing.
* Account management for faculty profiles.

### **2.3 User Classes and Characteristics**

* **Faculty**: Primary users, who book classrooms for teaching sessions.
* **Administrators**: Manage room listings and approve or reject booking requests.

### **2.4 Operating Environment**

* Web-based application, accessible through modern web browsers.
* Compatible with desktop and mobile devices.

### **2.5 Design and Implementation Constraints**

* The system should adhere to university data privacy policies.
* It should be scalable to handle multiple concurrent users.
* Must support integration with the university’s notification system for email alerts.

### **2.6 User Documentation**

User guides and help documentation will be available within the system for both faculty and administrators.

### **2.7 Assumptions and Dependencies**

* Assumes constant internet access for users.
* Depends on existing infrastructure for email notifications.

## **3. System Features**

### **3.1 Room Booking**

#### **3.1.1 Description and Priority**

Allows faculty members to book classrooms or labs. This feature is essential for the system’s primary function.

#### **3.1.2 Stimulus/Response Sequences**

* Faculty initiates a booking request.
* System checks room availability.
* System confirms or denies the booking based on conflicts.

#### **3.1.3 Functional Requirements**

* Faculty can search for available rooms.
* Faculty can book an available room.
* Admin can review the request and accept or reject accordingly.
* System updates room status once booked.

### **3.2 Room Management**

#### **3.2.1 Description and Priority**

Enables administrators to add, edit, or delete rooms. High priority for system maintenance.

#### **3.2.2 Stimulus/Response Sequences**

* Admin adds a new room with details (name, type, capacity).
* Admin deletes a room if it’s no longer available.
* System updates room listings and availability.

#### **3.2.3 Functional Requirements**

* Admin can add, update, or remove rooms.
* System verifies data consistency upon each update.

### **3.3 Account Management**

#### **3.3.1 Description and Priority**

Allows faculty members to manage personal profiles, including designation, department, and contact information. Medium priority.

#### **3.3.2 Stimulus/Response Sequences**

* Faculty accesses account page.
* Faculty updates profile details and clicks "Save."
* System saves changes and displays updated information.

#### **3.3.3 Functional Requirements**

* Faculty can view and edit account information.
* System validates data entry for consistency.

## **4. External Interface Requirements**

### **4.1 User Interfaces**

The system will have a web-based interface accessible via modern web browsers with responsive design for both desktop and mobile devices.

### **4.2 Hardware Interfaces**

No specific hardware requirements beyond standard devices (desktop, laptop, mobile).

### **4.3 Software Interfaces**

The system will integrate with the university’s email system for sending booking notifications.

### **4.4 Communications Interfaces**

The system requires internet access to send notifications and update real-time room availability.

## **5. Other Nonfunctional Requirements**

### **5.1 Performance Requirements**

The system should handle simultaneous booking requests without delay and update room status in real-time.

### **5.2 Safety Requirements**

Data backups should occur regularly to ensure no loss of booking information.

### **5.3 Security Requirements**

User data must be encrypted, and access to sensitive data must be restricted to authorized users only.

### **5.4 Software Quality Attributes**

* **Usability**: Interface should be intuitive and easy to navigate.
* **Reliability**: System must have a high uptime and robust data handling.
* **Maintainability**: Codebase should be modular for ease of updates.

## **6. Other Requirements**

### **Appendix A: Glossary**

* **Faculty**: University staff members who conduct classes.
* **Administrator**: Authorized personnel responsible for managing room resources.

### **Appendix B: Analysis Models**

* Flowcharts and use-case diagrams will illustrate the booking and approval processes.

### **Appendix C: Issues List**

* Potential scheduling conflicts.
* Data synchronization between multiple concurrent users.