**Software Requirements Specification (SRS)**

**Hostel Management and Billing Tracker**

**1. Introduction**

**1.1 Purpose**

The purpose of this document is to define the functional and non-functional requirements for the Hostel Management and Billing Tracker. This system aims to automate hostel operations, including room allocation, resident management, billing, and maintenance tracking, ensuring efficiency and accuracy.

**1.2 Scope**

The Hostel Management and Billing Tracker will provide an integrated platform to manage hostel rooms, resident details, billing, maintenance requests, and financial reporting. The system will have two main user roles: **Admin** (Hostel Manager) and **Residents**. Key functionalities include:

* User authentication and role management
* Room allocation and availability tracking
* Resident information management
* Monthly billing and payment tracking
* Maintenance request management
* Reporting and analytics

**1.3 References**

* Hostel management system best practices
* Database normalization principles
* PHP and MySQL for web-based applications

**1.4 Overview**

This document covers system functionalities, design constraints, assumptions, and dependencies. The system will be web-based and developed using **HTML, CSS, JavaScript, PHP, and MySQL**.

**2. System Description**

**2.1 Product Perspective**

The system is a **standalone web-based application** that will replace manual hostel management processes. It will store all resident, room, and billing data in a **MySQL database**, providing an admin panel for hostel managers and a resident portal for students.

**2.2 User Characteristics**

* **Admin:** Manages rooms, resident records, billing, and maintenance requests.
* **Residents:** Can view room details, submit maintenance requests, and track payments.

**2.3 Constraints**

* The system must be **secure** with password hashing for user authentication.
* Only admins can add, edit, or delete resident and billing data.
* The system should handle **multiple residents** and **monthly billing calculations** efficiently.

**2.4 Assumptions and Dependencies**

* Users must have a **stable internet connection**.
* The database server (MySQL) must be **properly configured**.

**3. Functional Requirements**

**3.1 User Authentication**

* Users must log in using their **username and password**.
* Passwords must be **hashed** before storage.

**3.2 Room Management**

* Admin can **add, update, delete**, and **assign rooms**.
* Residents can view **room details and availability**.

**3.3 Resident Management**

* Admin can **add, update, and remove** residents.
* Residents can update their **profile information**.

**3.4 Billing and Payment Tracking**

* The system generates **monthly bills** for each resident.
* Payments can be marked as **paid or pending**.
* Admin can generate **billing reports**.

**3.5 Maintenance Requests**

* Residents can **submit** maintenance requests.
* Admin can **view, update, and resolve** maintenance requests.

**3.6 Reporting**

* Generate **monthly financial reports**.
* View **room occupancy status** and maintenance logs.

**4. Non-Functional Requirements**

**4.1 Performance Requirements**

* The system should handle **multiple concurrent users** without lag.
* Page load time should not exceed **3 seconds**.

**4.2 Security Requirements**

* Passwords must be stored **securely using hashing (e.g., bcrypt)**.
* Only authenticated users should access their respective dashboards.

**4.3 Usability Requirements**

* The UI should be **intuitive and responsive**.
* Residents should be able to access the system from **mobile and desktop devices**.

**4.4 Availability**

* The system should have at least **99.5% uptime**.
* Admins should be notified of **system downtime issues**.

**5. System Design**

**5.1 Technologies Used**

* **Frontend:** HTML, CSS, JavaScript
* **Backend:** PHP
* **Database:** MySQL
* **Security:** Password Hashing (bcrypt)

**5.2 Database Schema (Simplified)**

* **Users Table:** Stores user login credentials and roles.
* **Rooms Table:** Manages room details and status.
* **Residents Table:** Stores resident information.
* **Payments Table:** Tracks rent payments.
* **Maintenance Table:** Logs maintenance requests.

**6. Conclusion**

This SRS document outlines the **Hostel Management and Billing Tracker**, covering system functionalities, technical requirements, and design aspects. The system will enhance efficiency by automating hostel operations, ensuring seamless room management, billing, and maintenance tracking.