

# SunLab Records System

## High-Level Requirements

### 1 Introduction

The SunLab Records system manages lab access, user registration, and administrative controls for tracking lab usage. This document outlines the high-level requirements necessary for implementing the system.

### 2 High-Level Requirements

#### 2.1 User Management

- **User Registration:** Users (students, staff, janitors) should be able to register their PSU ID and access details in the system.
- **Access Roles:** Users should have distinct roles such as student, staff, or janitor, with different permissions.
- **User Database:** A database of user information should be maintained, including PSU ID, email, first name, last name, and access permissions.

#### 2.2 Lab Access Logging

- **Access Log:** Automatically log the time, date, and access status (granted or denied) of each lab access attempt.
- **Real-time Access:** Users attempting lab access will have their credentials checked in real-time, with a log entry created for each attempt.

#### 2.3 Admin Panel

- **Admin Login:** A secure login system for administrators to access control features.
- **Access Control:** Only administrators can view logs, modify user records, and manage the database.
- **View and Search Logs:** Admins can query access logs by date range, user ID, and access type.
- **Data Export:** Admins should be able to export access records for auditing purposes.

#### 2.4 Database Management

- **User Records:** Store user data (PSU ID, email, etc.) and access permissions in a structured table.
- **Access Logs:** Maintain detailed logs for each access attempt, including timestamp and status.
- **Admin Accounts:** Store administrator credentials securely for login validation.

#### 2.5 Security and Validation

- **Data Validation:** Validate input data, including PSU IDs, usernames, and passwords.
- **Encryption:** Securely encrypt admin credentials and sensitive user information.

#### 2.6 User Interface

- **Login Interface:** Provide a simple interface for both users and admins to log in.
- **Admin Dashboard:** A dashboard for viewing user details, logs, and performing admin actions.

#### 2.7 System Integration

- **Date-Based Queries:** Admins should be able to search records by date range, user role, and other criteria.
- **Cross-Table Relationships:** Maintain relationships between user and access log tables to link access attempts with users.