



## FUNCTIONAL REQUIREMENTS

AUTHOR

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VERSION HISTORY				
VERSION	APPROVED BY	REVISION DATE	DESCRIPTION OF CHANGE	AUTHOR
1.0.0	Project Supervisor	05/01/2026	Initial version of document	Project Team

# **Functional Requirements Document**

## **Authorization Memorandum**

I have carefully assessed the Functional Requirements Document for the University Staff Attendance Management System.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

The document is accepted.

The document is accepted pending the changes noted.

The document is not accepted.

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We fully accept the changes as needed improvements and authorize initiation of work to proceed.  
Based on our authority and judgment, the continued operation of this system is authorized.

NAME  
Project Manager

DATE

NAME  
Director

DATE

Add other names and roles as necessary.

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## 1.0 INTRODUCTION

### 1.1 Purpose

This Functional Requirements Document (FRD) defines the functional behavior of the **University Staff Attendance Management System**. The purpose of this document is to describe **what the system must do** from a functional point of view, based on the approved business requirements and the implemented system.

This document is intended for evaluators, supervisors, and stakeholders to clearly understand the system's functional capabilities, operational rules, and user interactions.

Provide purpose of Functional Requirements document, tailored to fit the needs of your particular project.

### 1.2 Scope

The system supports attendance and leave management for university teachers and staff only. It includes:

- Teacher attendance management
- Staff attendance management
- Leave request and approval
- Semester-based scheduling
- Department-level reporting
- Data export for reporting tools

The system does not include student attendance, payroll, biometric devices, mobile applications, or external system integration.

### 1.3 User Roles Supported

The system supports the following user roles:

- Admin (System Operator)
- Head of Department (HoD)
- HR Assistant
- HR Backup
- Class Moderator
- Teacher
- Staff

## 2.0 BUSINESS REQUIREMENTS OVERVIEW

The University Staff Attendance Management System is developed to replace manual paper and spreadsheet-based attendance tracking used in universities. The existing process is slow, error-prone, and difficult to analyze for management purposes.

The business objectives of the system are:

- Digitize attendance for teachers and staff
- Automate late and absence detection
- Manage leave requests and approvals
- Provide clean data for reporting and analytics
- Enforce role-based responsibilities
- Support long-term, semester-based operation

### Fit with Existing Processes

The system is designed to **support existing university administrative structure** without changing organizational roles. It only digitizes and organizes existing workflows such as attendance marking, leave approval, and reporting.

## **2.1 Assumptions and Constraints**

### **Assumptions:**

- Users have basic computer skills
- Each user has exactly one system role
- The university defines attendance and leave policies
- HoDs are responsible for leave approvals
- The system is used within a single university

### **Constraints:**

- Web-based system only
- No biometric or mobile application
- No payroll or external integration
- No offline operation

## **3.0 FUNCTIONAL REQUIREMENTS AND USER IMPACTS**

The system provides role-based functionality to ensure each user can perform only their assigned responsibilities. All functions are designed to follow real university workflows while keeping the system simple and reliable.

### **3.1 Usability Requirements**

The system shall provide:

- Simple, role-based screens
- Clear forms for attendance and leave
- Easy navigation between main functions
- Clear messages for success and error actions

Users shall be able to learn basic operations within a short time without special training.

### **3.2 Performance Requirements**

- The system shall save attendance and leave records immediately after submission.
- The system shall allow multiple users to use the system at the same time during working hours.
- The system shall retrieve attendance and reports within reasonable response time for daily operations.

### **3.3 Supportability Requirements**

- The system shall allow Admin to maintain users, departments, classes, and semesters.
- The system shall allow long-term usage across many semesters without data loss.
- The system shall keep historical attendance data permanently.

### **3.4 Security Requirements**

- The system shall require login for all users.
- The system shall enforce role-based access control.
- Users shall only access data related to their role and department.
- Only authorized users shall perform sensitive operations such as approvals and system configuration.

### **3.5 Interface Requirements**

- The system shall provide a web-based interface.
- Each user shall see only the functions related to their role.
- The system shall provide screens for:

- Attendance marking
- Leave submission and approval
- Schedule viewing
- Reports and summaries

### **3.6 Assumptions / Constraints**

- All semesters must be created before attendance starts.
- Class moderators must be assigned before teaching begins.
- Attendance cannot be manually marked as Late or Absent.
- The system automatically determines Late and Absent.

## **4.0 COMPLIANCE REQUIREMENTS**

### **4.1 Regulatory Compliance**

The system shall protect personal data and restrict access to authorized users only.

### **4.2 Institutional Compliance**

The system shall follow:

- University attendance policies
- University leave approval structure
- Department-based authority rules

### **4.3 Assumptions / Constraints**

The university is responsible for defining policies and using the system according to institutional regulations.

## APPENDIX A: REFERENCES

Listed below are all documents referenced in this Functional Requirements document.

REFERENCES		
DOCUMENT NAME	DESCRIPTION	LOCATION
Project Practicum Rubric and Rating Scale	Assessment criteria and grading guidelines for the practicum project	Provided by Lecturer
Functional Requirements Template	Standard template used to structure the Functional Requirements Document	Provided by Lecturer
Non-Functional Requirements Template	Template defining performance, security, and operational requirements	Provided by Lecturer
University Staff Attendance System – Project Report	Comprehensive project documentation including methodology, system design, and results	Project Submission
System Source Code Repository	Full source code of the University Staff Attendance System	GitHub Repository
Database Schema (final_schema.sql)	SQL script defining database tables, relationships, and constraints	database/final_schema.sql
Workflow Diagrams	Visual diagrams illustrating attendance and leave request workflows	Project Diagrams Folder
Clean Architecture Documentation	Reference for architectural pattern used in system design	Internal Project Documentation
OWASP Security Guidelines	Security best practices for authentication, authorization, and data protection	<a href="https://owasp.org">https://owasp.org</a>

## APPENDIX B: KEY TERMS

Listed below are definitions for terms relevant to this Functional Requirements document.

KEY TERMS	
TERM	DEFINITION
Attendance	A daily record indicating a user's presence status (Present, Absent, or Leave) on a specific date.
Leave Request	A formal request submitted by a teacher or staff member to take time off, requiring approval from the Head of Department.
Role-Based Access Control (RBAC)	A security mechanism that restricts system access based on assigned user roles such as Admin, Head, HR Assistant, Teacher, or Staff.
Admin	A system administrator with full access to manage users, departments, classes, schedules, and system configurations.
Department Head	A user role responsible for viewing department-wide attendance analytics and approving leave requests for department members.
HR Assistant	A user authorized to mark staff attendance only.
Class Moderator	A user responsible for marking teacher attendance for assigned classes.
Teacher	A system user who can view personal attendance records, schedules, and submit leave requests.
Staff	A system user who can view personal attendance records and submit leave requests.
Session	A temporary authenticated state maintained after a user logs in, allowing access to protected system features.
Authentication	The process of verifying a user's identity using unique credentials such as unique ID or email and password.
Authorization	The process of granting or denying access to system features based on a user's role.
Dashboard	A role-specific interface displaying key information such as attendance statistics, schedules, and pending requests.
Use Case	A defined business operation representing a specific system function, such as marking attendance or approving leave.
Repository Pattern	A design pattern used to separate data access logic from business logic, improving maintainability and testability.
Clean Architecture	A layered software architecture that separates concerns into Presentation, Core (business logic), and Infrastructure layers.
Drizzle ORM	A TypeScript-based Object-Relational Mapping tool used for type-safe database operations.
MySQL	A relational database management system used to store system data such as users, attendance, and leave records.
Audit Trail	A record of system actions showing who performed an operation and when, used for accountability and compliance.
Unique ID	A system-generated identifier assigned to each user and used for login and identification purposes.

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