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**Software Report**

**For School Management System**

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# 1. Introduction

## 1.1 Overview

The School Management System (SMS) is a desktop-based application designed to assist school administrators in managing student records, cleaning staff, and office staff efficiently. The system centralizes administrative functions, automates attendance tracking, and provides a secure and user-friendly interface.

## 1.2 Objectives

* Automate school administrative processes.
* Provide a secure platform for managing student and staff records.
* Enable attendance tracking and report generation.
* Enhance efficiency and reduce manual record-keeping efforts.

## 1.3 Scope

* Designed for school administrators only.
* Manages student, cleaning staff, and office staff records.
* Tracks attendance and generates reports.
* Uses Java for application development and MySQL for database management.

# 2. System Features

## 2.1 Student Management

* Add, update, delete, and search student records.
* Maintain details such as name, grade, section, and contact information.

## 2.2 Cleaning Staff Management

* Register new cleaning staff members.
* Update and delete staff records.
* Assign cleaning schedules and tasks.

## 2.3 Office Staff Management

* Maintain office staff records.
* Update and manage staff attendance.

## 2.4 Attendance Tracking

* Record student and staff attendance.
* Generate reports on attendance trends.

## 2.5 Reports and Logs

* Generate reports on student enrollment, staff details, and attendance records.
* Maintain a log of administrative activities.

# 3. System Design

## 3.1 System Architecture

* The system follows a client-server architecture with a Java-based GUI and MySQL database backend.
* The database stores student, staff, and attendance records.
* JDBC is used for database connectivity.

## 3.2 Database Design

* **Student Table**: Stores student details (ID, Name, Grade, Contact, etc.).
* **Cleaning Staff Table**: Stores cleaning staff information.
* **Office Staff Table**: Stores office staff records.

## 3.3 User Interface Design

* Graphical User Interface (GUI) developed using Java Swing.
* Form-based navigation with buttons and have a menu page.

**[Space for Software Interfaces]**

# 4. Implementation Details

## 4.1 Technologies Used

* **Programming Language**: Java
* **Database Management System**: MySQL
* **Development Environment**: NetBeans IDE
* **Frameworks/Libraries**: JDBC for database connectivity

## 4.2 Installation and Setup

* Install Java Runtime Environment (JRE).
* Set up MySQL database and configure tables.
* Run the Java application using NetBeans or command line.

# 5. Testing and Evaluation

## 5.1 Testing Approach

* **Unit Testing**: Individual components were tested separately.
* **Integration Testing**: Modules were tested together to ensure smooth data flow.
* **System Testing**: The entire system was tested under real-use conditions.

## 5.2 Test Cases

* Verify student registration functionality.
* Test staff record updates and deletions.
* Check attendance logging and report generation.
* Ensure secure login functionality for the administrator.

**[Space for ER Diagrams]**

# 6. Conclusion

The School Management System successfully automates student and staff management, improving efficiency and reducing manual errors. Future enhancements may include multi-user access and cloud database integration.