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# Software Requirements Specification

for

## Attendance Management System

Version 1.0 approved

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## Revision History

Name	Date	Reason For Changes	Version

# 1. Introduction

## Problem Definition

The Attendance Tracking Management System takes input as student's detail, no. of lectures attended, no. of practical conducted, no. of lectures conducted etc. The contents are intended to be utilized by the engineering class as guidelines for implementation and testing. At the end of the particular semester the system would provide with defaulters list which would help the respective teacher incharge to take particular action.

### 1.1 Purpose

The following document describes the functional and non-functional requirements for the Attendance Tracking System release version 1.0. The contents are intended to be utilized by the engineering class as guidelines for implementation and testing. This Software Requirements Specification document only covers the main system and does not describe the implementation of the database in which the main system interacts. All the requirements stated in this document are slated for implementation in version 1.0, unless otherwise specified.

### 1.2 Document Conventions

*<Describe any standards or typographical conventions that were followed when writing this SRS, such as fonts or highlighting that have special significance. For example, state whether priorities for higher-level requirements are assumed to be inherited by detailed requirements, or whether every requirement statement is to have its own priority.>*

### 1.3 Intended Audience and Reading Suggestions

The intended audience is the engineering class, who will be implementing and testing the Attendance Management System. Also, the document is to be utilized by the engineering professor to evaluate the software's design and features.

### 1.4 Product Scope

The Attendance Management System will allow the teacher incharge to maintain a record of attendance of students in their respective classes from a PC. Also, the system will permit the teacher incharge to maintain all the essential details regarding a particular student. Furthermore, the program provides different modes to edit attendance,

view statistics, and take notes on elements pertaining to attendance. The goal is to provide a professor with an easy, portable solution to attendance record maintenance and attendance statistics.

## 1.5 References

*<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>*

## 2. Overall Description

### 2.1 Product Perspective

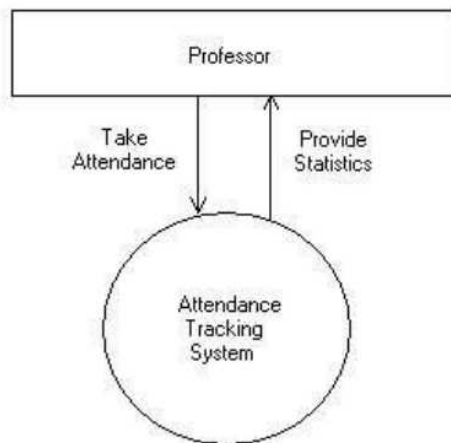
The Attendance Management System is intended to replace the manual model of attendance record keeping by means of roll call and paper records. The roll call and paper records are replaced with a single interaction between the professor and the Attendance Management System. Professors will be able to view details regarding attendance of individual students on their PC and quickly maintain attendance records. The features expressed in this Software Requirements Specification document are intended to be fully implemented in version 1.0. The system will be developed in such a way to provide easy addition of enhanced features, which may be desired in subsequent versions.

### 2.2 Product Functions

The main feature of the Attendance Management System is that it keeps a record of all essentials details of each individual student. At the end of a specified period this system creates a defaulties list as well as the non-defaulties list. Attendance Percentage of each student in every subject would be displayed in this list. Also, the system allows the professor to view pertinent statistics on student's attendance record for the specified class. Finally, another feature of Attendance Management System is its flexibility and ease of use.

### 2.3 User Classes and Characteristics

**Professors** A professor is a faculty member of Engineering College in Mumbai. There are n number of faculty members at the university and it is estimated that almost all faculty members will utilize the Attendance Management System. Professors will have multiple classes and interaction with the system will occur at multiple times throughout the day from multiple professors. The professor should be allowed to take, edit, and view attendance records at any desirable time. All professors have Internet access through their PC's. This provides the backbone of the Attendance Management System.



**Figure 1:** Context diagram for Attendance Management System.

## 2.4 Operating Environment

- OE-1: The Attendance Management System shall function on the PC provided by the college. This entails the system to operate on the Windows CE platform.
- OE-2: The Attendance Management System shall interface between Windows CE designated to store the attendance records. The Web Server and Database Software have not been established at this point.
- OE-3: The Attendance Management System will record all the essentials details of each particular student.
- OE-4: Pentium 3.0 GHz or higher RAM must be 1 Gb or more and Hard Drive 10 GB or more

## 2.5 Design and Implementation Constraints

- CO-1: The time allotted for this project will be limited to the end of this semester.
- CO-2: The language for the project will be Visual C++ and the development environment will be the embedded Visual C++ 3.0 environment.
- CO-3: All the HTML code for the user manual will conform to the HTML 4.0 standard.
- CO-4: *Programming is done in JAVA, SQL, HTML.*

## 2.6 User Documentation

- UD-1: The system will provide an online user manual in HTML that describes the functionality and options available to the user.
- UD-2: The system will provide a hard copy of the user manual, which is identical to the manual outlined in UD-1

## 2.7 Assumptions and Dependencies

AS-1: The database mentioned within this Software Requirements Specification document is previously administered with the correct information needed by the Attendance Management System.

AS-2: For attendance policies, since professors do not usually tabulate tardiness, it is assumed a student is either present or absent. The system also assumes that detail regarding each student would be made correctly.

DE-1: Class data being used for setup and student recognition is dependent on information in a database administered outside of the capabilities of the Attendance Management System.

DE-2: Statistics on student attendance is dependent on a professor's consistent utilization of the system for each class period.

## 3. External Interface Requirements

### 3.1 User Interfaces

UI-1: The Attendance Management System shall provide details of students in the class to aid in taking roll.

UI-2: These details can be clicked with a mouse in order to view a particular student's attendance record.

UI-3: All modifications to the database will be done through a keyboard.

UI-4: Application will be accessed through a Browser Interface. The interface would be viewed best using 1024 x 768 and 800 x 600 pixels resolution setting.

UI-5: The program will provide a page that produces current statistics on class attendance

### 3.2 Hardware Interfaces

#### *Server Side:*

H1: Operating System: Windows 7/xp ,Windows ME

H2: Processor: Pentium 3.0 GHz or higher

H3: RAM: 1 Gb or more

H4: Hard Drive: 10 GB or more

#### *Client side:*

H5: Operating System: Windows 7 or above, MAC or UNIX.

H6: Processor: Pentium III or 2.0 GHz or higher.

H7: RAM: 1 Gb or more

### 3.3 Software Interfaces

SI-1: Attendance Management System

SI-1.1: This software will transmit the attendance of a class to a database on a machine via Internet.

SI-1.2: The user will be allowed to modify attendance records at any time.

SI-1.3: If the user forgets to transmit the information, the system will automatically send it for them at the end of the class.

SI-2: Database

The Attendance Management System will communicate with the database to perform the following options.

SI-2.1: To allow a user to enter attendance.

SI-2.2: To allow a user to modify attendance.

SI-2.3: To allow a user to query a system to gain statistics concerning individual and class attendance.

### 3.4 Communications Interfaces

CI-1: The security of a user must be consistent through the use of passwords.

CI-2: The Attendance Management System will communicate to the database through Internet.

## 4. System Features

*<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>*

### 4.1 System Feature 1

*<Don't really say "System Feature 1." State the feature name in just a few words.>*

#### 4.1.1 Description and Priority

*<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>*

#### 4.1.2 Stimulus/Response Sequences

*<List the sequences of user actions and system responses that stimulate the behavior defined for this feature. These will correspond to the dialog elements associated with use cases.>*

#### 4.1.3 Functional Requirements

*<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the*

*product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use "TBD" as a placeholder to indicate when necessary information is not yet available.>*

*<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>*

REQ-1:

REQ-2:

## 4.2 System Feature 2 (and so on)

# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

- PE-1: The program must be able to be run concurrently by multiple professors. During peak times of usage (9:00 AM to 2:00 PM).
- PE-2: Transmission of roll data shall occur in under 5 seconds.
- PE-3: Acknowledgement of roll received (confirmation) shall be returned within 8 seconds.
- PE-4: Queries upon the database shall be performed in less than 5 seconds.
- PE-5: Upon start of the roll program, roll information shall be displayed on the instructor' s Pocket PC within 10 seconds.
- PE-6: Email messages to absent students shall be sent within one hour of the conclusion of a class.
- PE-7: The program shall support taking roll for class sizes of up to 100 students. With a maximum class size, performance must still conform to all performance requirements.

## 5.2 Safety Requirements

System would be protected by a password.

As it is connected via LAN and MAN an antivirus has been installed on system for its safety purpose

## 5.3 Security Requirements

- SE-1: An instructor shall permitted to view and edit absence information in the database for only his/her classes.
- SE-2: In order to take roll or edit database information, the instructor shall be required to enter a password. This password shall be stored on the instructor' s PC after initial entry in order that it must only be entered once.
- SE-3: Passwords shall be stored in an instructor database and verified upon each session of roll or database modification.
- SE-4: An instructor shall be allowed to change his/her password only by supplying his/her



existing password. The updated password shall be stored in the instructor database and on the instructor's PC.

## 5.4 Software Quality Attributes

Availability-1: The system shall be available to all instructors through Information Systems during their

normal hours of operation.

Reliability-1: Due to the use of a wireless network, reliability of the system at all times is not

guaranteed. However, overall reliability of the system and roll information shall be

achieved through the process of database manipulation.

Reusability-1: The system shall be able to be reused for each new semester.

Robustness-1: If no network connection can be established to receive the roll information, the instructor

shall be allowed to enter roll later.

Robustness-2: If a network connection is lost during roll, the program shall allow the instructor to

transmit roll information at a later time.

Updatability-1: The system shall allow for addition or deletion of instructors, students, and classes while

incorporating new semesters.

Usability-1: Usability of the system shall be achieved through an online help pages and an introductory training session for all instructors upon installation of the program on their

Pocket PCs.

## 5.5 Business Rules

*<List any operating principles about the product, such as which individuals or roles can perform which functions under specific circumstances. These are not functional requirements in themselves, but they may imply certain functional requirements to enforce the rules.>*

## 6. Other Requirements

*<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>*

## Appendix A: Glossary

SRS: Software Requirement Specification

RAM: Random Access Memory

OS: operating system

DB: Databases

PHP: Personal Home Page

SQL: Structured Query Language

HTTP: Hyper Text Transfer Protocol

## Appendix B: Analysis Models

*<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>*

## Appendix C: To Be Determined List