
Software Requirements Specification

for

Learning Management System

Version 1.1

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Revision History

Name	Date	Reason For Changes	Version
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Fatima Nasir, Shamsa Hafeez, Muhammad Qasim Khan	15-02-22	Initial version	1.0
Fatima Nasir, Shamsa Hafeez, Muhammad Qasim Khan	20-05-22	Change Management	1.1

1. Introduction

1.1 Purpose

The purpose of this document is to:

1. Present a detailed description of the Learning Management System (LMS) software (release 1.0) to be developed.
2. Explain the purpose and features of a part of the LMS system, the interfaces of the system and what the system will do.
3. To show the analysis of requirements (how requirements have been understood in requirement elicitation process)

This document is intended for both the stakeholders and the developers of the system. Pakistan for its approval.

1.2 Document Conventions

This document describes part of the system to be developed along with the External interface requirements, system features and non-functional requirements.. The headings pointing out sections and subsections are bold. Points that have special significance have been highlighted with the color #fff800.

1.3 Intended Audience and Reading Suggestions

This document is intended to be used by developers, project managers and testers to understand the software requirements. The document begins with an overall description of the project. Particularly, developers are highly encouraged to read section 2.3-2.5 and 2.7 to understand the design. Furthermore, users may refer to section 2.6 for understanding the sections in the documentation and section 4 to understand the functionalities that it is going to provide.

1.4 Product Scope.

The product is a web application which acts as a student progress tracker that updates parents and students directly on a student's current status. The data available to the tracker is a student's main information, attendance and school assessments. Information of students is updated by the teacher using the online platform. It will allow teachers to mark students' attendance through the online interface and help teachers and parents to keep a track of students' attendance by generating reports. A feature facilitated by access to the site for parents and teachers. It also helps teachers enter marks of each student and generate grade sheets of students through implementing set functions in the backend database. Based on attendance and grades, the system shall

generate progress reports and allow teachers to give feedback on it, to keep a record of his/her comment on the child's progress.

2. Overall Description

2.1 Product Perspective

The product is there to play a hub role for students, teachers and parents so they have a common platform of providing and accessing information including attendance marking, grade recording, feedback entering and report generation. Hence, it allows students and parents to have regular updates on student progress.

2.2 Product Functions

This is an LMS (Learning Management System). The product we are building will:

- An attendance system will be present to mark students attendance daily
- There will be a grade recording system to help keep record of grades received by students corresponding to each assessment.
- A monthly student progress report will be created

2.3 User Classes and Characteristics

User Classes:

- Students
- Teachers
- Parents

Most important user classes are the students, teachers and parents and the less important user classes are the administration. Within the most important user classes, the Students and Teachers are of equally higher priority than parents. The administration is a low priority user class.

2.4 Operating Environment

The software will operate on PC's and laptops. It will be a web based application that can be accessed from chrome.

2.5 Design and Implementation Constraints

Since it is a combined project there will have to be a limit to an agreed upon platform for all groups to build and integrate the project.

2.6 User Documentation

- User manual will be created for the teachers
- A video tutorial will be created for parents
- A video tutorial will be created for the students .

2.7 Assumptions and Dependencies

2.7.1 Assumptions:

1. Users (teachers, students, parents) can speak english
2. School has authorized email addresses for users
3. To have secure usage email and password are known only by the user

2.7.2 Dependencies:

1. Updated version of the browser should be used
2. Backend database and front end are compatible so student information is stored and updated

3. External Interface Requirements

3.1 User Interfaces

1. Login pages for different types of users
2. Attendance view for teacher
3. Grade view for teacher
4. Attendance view for students and parents
5. Grade view for students and parents
6. Monthly report for students and parents
7. Notification/warning for students and parents
8. Landing page / dashboard

3.2 Hardware Interfaces

This system is not very hardware dependent.

3.3 Software Interfaces

This software would be integrated with the following interfaces:

- Our software will interact with the school's database from which it will extract all the information regarding a student's profile in order to ensure that the data of teachers and students remains consistent.
- Flask Web Application Framework shall be used
- MySQL shall be used for database purposes.

3.4 Communications Interfaces

Browser and internet connection are mandatory to access the site with HTTP protocol. Each user's ID is used as a way to identify them in the network.

4. System Features

4.1 System shall record Attendance

4.1.1 Description and Priority

Teachers shall add daily attendance of students in the Attendance Marking System. They shall mark each student as present, absent or on leave at the beginning of each class. However, to use this system, the teacher would have to use a device with an internet connection in order to access our Learning Management System.

4.1.2 Functional Requirements

- REQ-1: The system shall allow teacher to mark daily attendance of each student
- REQ-2: The system shall allow teachers to generate attendance report
- REQ-3: The system shall notify parent, teacher and student, if a student is below attendance threshold

4.2 System shall record Grades

4.2.1 Description and Priority

Allows the teachers to record the assessments they are giving and record corresponding students' marks. Different assignments can have different grades. Homeworks are marked as done, not done and late. Tests, midterms, quizzes and final exams shall all have integer scores. All assignments are tallied up to a final letter grade.

4.2.2 Functional Requirements

REQ-1: The system shall allow teacher to enter grades of each student corresponding to each assessment

REQ-2: The system shall generate grade reports

REQ-3: the system shall notify parents regarding a student's grades

4.3 The system shall allow teachers to provide feedback

4.3.1 Description and Priority

The system will be able to combine a student's attendance and grades for a month and generate a report. The teacher can comment on a student's performance and provide suggestions/comments.

4.2.2 Functional Requirements:

REQ 1: The system shall generate consolidated progress report of student based on his/her grades and attendance

REQ 2: The system shall allow teachers to add feedback in the form of a comment on students' progress reports

REQ 3: The system shall send the report to parents and students

5. Other Nonfunctional Requirements

5.1 Performance Requirements

No glitches in site. Navigation is smooth and links are connected correctly. Notifications system doesn't cause bugs.

5.2 Safety Requirements

Guidelines for online conduct should be followed by teachers, students and parents. Teachers should be careful with student information. Parents should adhere to calm and caution when addressing concerns about their child. Teachers should not discriminate between any students for race, gender or religion.

5.3 Security Requirements

Login information of Teachers should not be accessible to Students, parents or any individual who is not part of the organization. Students and parent's identity authentication is done through email and password. Students' information is confidential and can not be shared without their or their guardian's consent or knowledge. Student's data shouldn't be shared with other students and departments that don't concern themselves with the data. Parents and teachers must have an

agreed set of rules beforehand on what the tone of discussions would be when conducted on the LMS.

5.4 Software Quality Attributes

Interfaces should not be confusing for parents, children and teachers. The interface won't have such a degree of complexity that would intimidate the students, teachers or parents. It will be an easy to use intuitive interface and there will be tutorials for students and parents about it when interacting for the first time. The tutorial can be replayed again whenever the user wants. Teachers will have a guide document or manual that they can refer to. The LMS is a web based application which makes it completely portable, and available (provided the device has the modern version of the Chrome browser). The learning curve and normal usage curve are not so apart as they both are also not steep. There is a preference for ease of usage but it doesn't hold a very high preference over ease of learning.

5.5 Business Rules

The product can be bought by middle schools or high schools.

6. Other Requirements

No other requirements.