Software Requirements Specification

For

ML Experiment Management System

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Revision History

Date	Change	Reason for Changes	Mentor Signature

1. Introduction

1.1 Purpose of Project

The main purpose behind implementing a Learning Management System is that using a an LMS portal has various advantages over the traditional face-to-face form of learning. LMS's can be used for strengthening business strategies, familiarize customers with their products, enable students to learn from anywhere at any time.

Over a course of time, a company thinks about the expenditure, time, consistency and flexibility of the learning mechanisms used by them. An LMS not only saves time, cost (no need to constantly replace staff for training and recruiting), is flexible but is also consistent in delivering a fascinating learning experience. In today's day and age, where one person has to multi-task and learn on the go, the need for classroom virtualization is at its peak. LMS platforms provide this virtual environment for remote learning. All the candidate needs, is a PC and an internet connection to do this.

The increasing need for LMS platforms is a good opportunity of learning about software development, mainly web development. This is why we embarked on this project in the first place.

1.2 Target Beneficiary

The target beneficiary for the project would be teachers and students in the education sector, customers, clients, partners and employees in the business sector and people who wish to make their own courses of along with the candidates interested in enrolling in their courses.

1.2 Project Scope

Knowledge gives power. When it comes to learning in this day and age, people think less about books and turn their eyes towards online learning. What could be better than a Learning Management System if online learning is concerned? LMS is a modern approach to study your favourite courses from any part of the world without having the need to physically go to classes and attend crucial lectures via the internet.
experimentation.

2. Project Description

2.1 Reference Algorithm

N/A

2.2 Characteristic of Data

The data is stored in MongoDB, a NoSQL database. Since there exists less number of relationships in the data. The data models currently are susceptible to change in the future, hence, a NoSQL database is used.

2.3 SWOT Analysis

Strength: Our LMS is free and open-source, with an intuitive interface. The LMS is easy to deploy and use.

Weakness: The LMS doesn't have advanced features for collaboration.

Opportunity: Being open-source, it can be used by anyone with varying levels of experience. The LMS also opens opportunities for remote learning.

Threat: Failure to secure secrets while deployment might cause security issues.

2.4 Project Features

The LMS allows multiple functionalities to facilitate learning through an online mode. Some of them include:

- User management (signup and login)
- Creation of assignments
- Updating assignment marks
- Creation of quizzes
- Take quizzes
- Update quiz questions
- Create classes
- Update class information
- Upload course material

2.5 User Classes

The LMS makes use of multiple database models:

- Assignment
- Quiz
- Class
- Assignment Response
- Class Content
- User
- Quiz Response

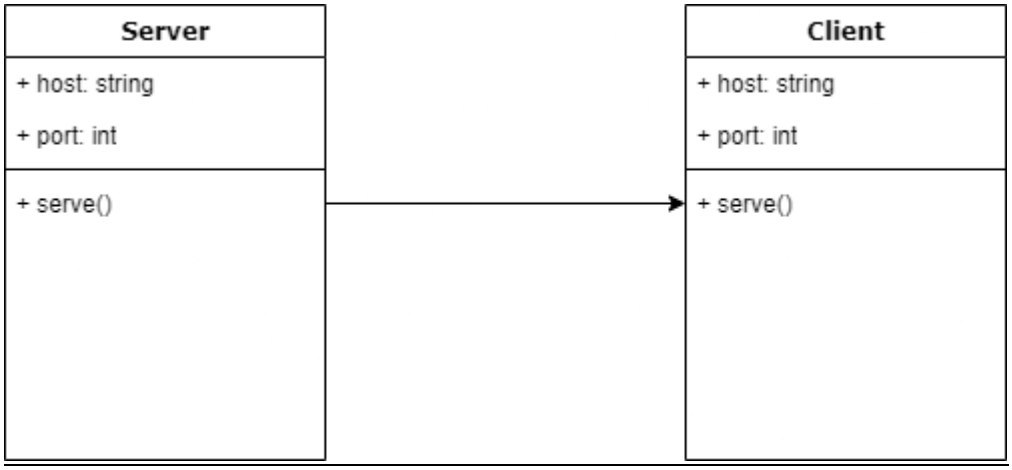
2.6 Design and Implementation Constraints

The LMS currently requires access to two things:

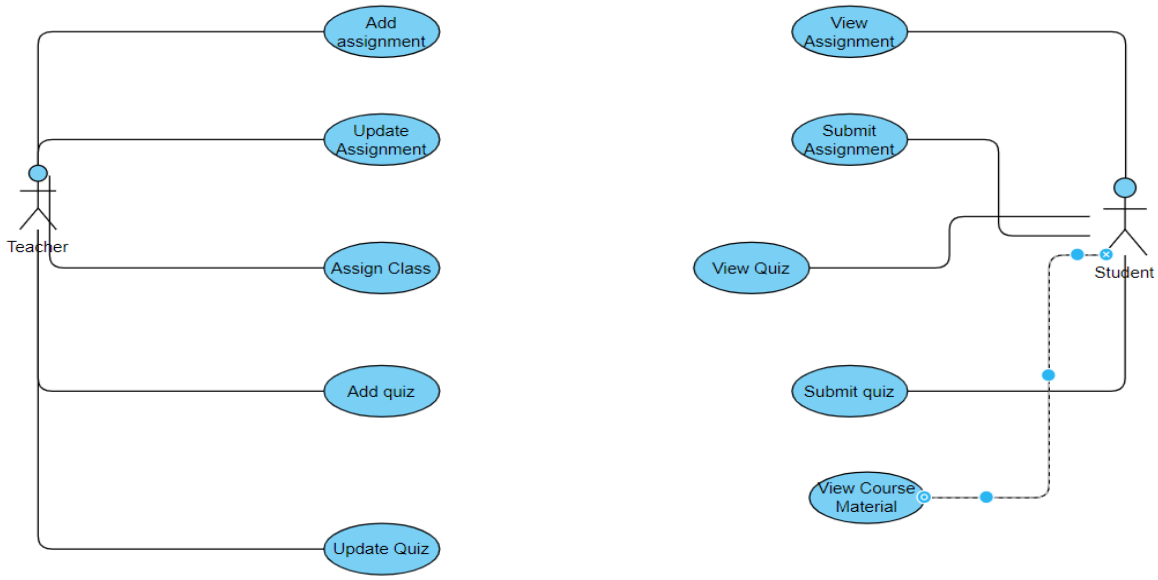
- A JavaScript runtime like Node.js
- A package manager, for example, npm, yarn, etc.
- Browser to browse the user interface

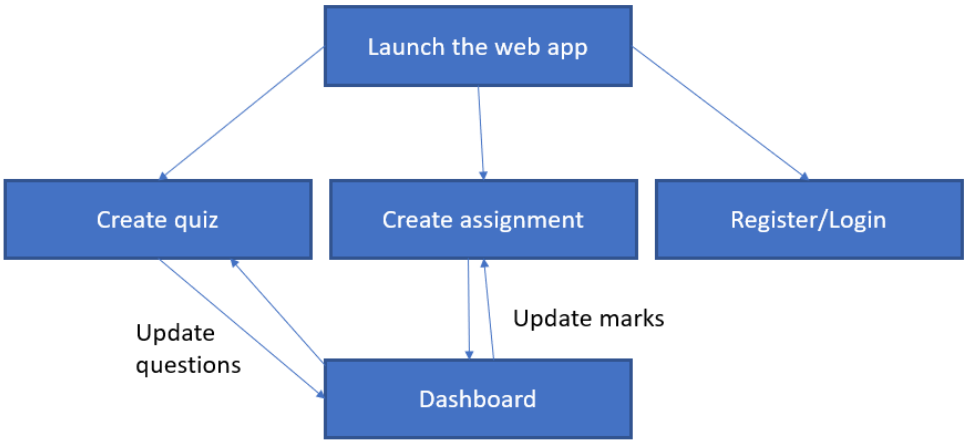
2.7 Design Diagrams

2.7.1 Class Diagram:



2.7.2 Use Case Diagram:





2.8 Assumption and Dependencies

The LMS currently requires access to two things:

- A JavaScript runtime like Node.js
- A package manager, for example, npm, yarn, etc.
- Browser to browse the user interface

3. System Requirements

3.1 User Interface

The LMS currently uses React, a Javascript library to create user interfaces. The web UI contains multiple pages, with each page containing multiple components like buttons, forms, etc.

3.2 Software Interface

The LMS is divided into various components. There are two components: a client and a server.

3.3 Database Interface

The data will be stored in MongoDB, a NoSQL database.

3.4 Protocols

The HTTP protocol is used to interact with the user interface.

4. Non- functional requirements.

4.1 Performance Requirements

Since the system is very lightweight in nature, there are no specific performance requirements for the project.

2GB RAM recommended with Intel i5.