**LEARNING MANAGEMENT SYSTEM**

**Software Requirement Specification**

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# Introduction

* The Learning Management System project aims to develop a Java-based web application that provides a centralized platform for students, faculty, and administrators to access and manage various campus-related information. This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements of the project.
* The whole process of assigning test and evaluating their scores after the test, will done manually till date. It is very time consuming. And it is difficult to keep the answer sheets being generated as well as the maintenance of the record of each examination. The chance of loss of records is high and record searching is difficult. Result processing takes more time and the presence of more invigilators is a must if there are so many students to write the exam. The Online Examination System is an electronic application. This framework will help the college/Institution to assess the inquiry have different alternative with one right reply. The college/Institution can direct the online examination and report the outcome in a couple time. The examination office is in charge of the creating the inquiry paper and it would be totally secure. Online Examination framework give remotely access to understudies.
* It assists the inspector with reducing the work of leading exam, checking answer sheets and producing result. All this work is finished by the machine. All the information is put away on the server. What’s more, customers can get to these databases and give exam. Here we utilize a customer server model. Executive offer access to instructor and understudies. Understudies who have account on the framework will have the capacity to give exam. There are two sorts of exam segment Practice and Real test. Understudies can give both tests. Right answer will be highlighted in diverse shading. Subsequent to submitting test the outcome will be created and examinations is done on the premise of result and send it to every single understudy.

# Functional Requirements

The Account part of LEARNING MANAGEMT SYSTEM has three modules which are divided following processes described as below.

|  |  |  |
| --- | --- | --- |
| **No** | **SRS requirement ID** | **Description** |
| **2.1** | **Admin Module** | |
| **2.1.1** | **F1** | **Login Process** |
| **2.1.2** | **F4** | **Report Generation** |
| **2.1.3** | **F5** | **Teacher Management** |
| **2.1.4** | **F6** | **Student Management** |
| **2.2** | **Teacher Module** | |
| **2.2.1** | **F6** | **Account Creation Process** |
| **2.2.2** | **F7** | **Login Process** |
| **2.2.3** | **F8** | **Forgot Password Process** |
| **2.2.4** | **F9** | **Change Password Process** |
| **2.2.5** | **F10** | **Update Schedule** |
| **2.2.6** | **F11** | **Add Assignment** |
| **2.2.7** | **F12** | **Update Result** |
| **2.3 Student Module** | | |
| **2.3.1** | **F13** | **Account Creation Process** |
| **2.3.2** | **F14** | **Login Process** |
| **2.3.3** | **F15** | **View Timetable** |
| **2.3.4** | **F16** | **View Assignments** |
| **2.3.5** | **F17** | **View Performance** |
| **2.3.6** | **F18** | **View Result** |

**2.1 Admin Module**

**•** Administratorshould be responsible for following activities**,**

### 2.1.1 Login Process

* Campus portal System always compels user authentication before using itself except when a new account is successfully created.
* The user authentication demands User ID and Password. The User ID and the Password should be checked in three ways.
  + First, The User ID and the Password should be existed and correct.
* If the User ID and the Password are not equal to what the admin has registered, the Admin authentication cannot be provided.
  + Second, the User Type linked to the User ID should be "Admin".
* When the User Type is "Admin", user can be placed on “Admin Home”.
  + Finally, User ID should be available.
* The Administrator can decide whether the User ID is available or suspended – Refer to t
* .0he SRS of the Admin part.
* If user is rejected, user authentication is not provided for system user.
* The Admin account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, Admin can be placed on respected page.
* The “Admin Home” provides some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Forgot Password
5. A trigger to Report Generation
6. A trigger to Account Management

# 2.1.2 Forgot Password Process

* When Admin lost their Password, the recovery method should be provided by Campus Portal system.

The recovery method is described as below.

* + First, Admin enters their User ID for Campus Portal System.
  + He will enter the E-mail id since when the Account was created.
  + Only when the E-mail Id is correct, Admin get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by Campus portal System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Admin could get the Admin authentication using the new password.
  + Then, the Admin had better change the new password manually.

### 2.1.3 Change Password Process

* When Admin wants to change his Password, the measure should be provided by Campus portal System.
* Therefore, Campus portal System should provide the function which is available after getting the Admin authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Admin could change his Password.
* When the current password is changed into new password, Campus portal System compels user authentication again.

### 2.1.4 Update Account Process

* Campus portal System should provide the function which makes the account updated for Admin.
* The information Admin could update is described below.

1. Login information
2. User information
3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

#### 2.1.5 Report Generation

• Admin should able to see all the records from any users.

• Daily report of enrolment to admin.

• Monthly or weekly basis report of enrolment as per the states to admin.

#### 2.1.6 Accounts Management

• Admin should able to manage all the accounts with following activities,

1. Enable accounts

2. Disable accounts

#### 2.2 Teacher Module

### 2.2.1 Account Creation Process

* Campus portal System compels to create the account before using it. So, Campus portal System should provide the function which makes Teacher creates new account.
* When Teacher creates new account, the function demands four information described as below.

1. Login information

2. Contact Details

3. Security Question Information

4. Payment information.

* The Login information

The Login information consists of some items described as below.

5. User ID

6. Password

7. First Name

8. Last Name

9. E-mail address

10. User Type

* + All items are compulsory demanded.
  + User ID
* The User ID should be unique. If the User ID correspond with not case-sensitive to other which is previously registered, the User ID should not be registered as an account.
  + Password
* The Password has constrains which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1. Numeric figure (at least one)

2. Capital alphabet (A-Z) (at least one)

3. Small alphabet (a-z) (at least one)

4. Special character (#, $, %, &, etc.) (at least one)

* The Password is masked by dummy characters. The re-entering Password is demanded.
* The Password must be encrypted in e-Farming System.
  + User Type

The User Type falls into three categories described as below.

1. Admin

2. Teacher

3. Student

* The User Type defines also three types of user; " Admin", " Teacher user", and "Student user”.
* In an Account Creation Process, the user can select Wholesaler.
* No one could select The Administrator, because Administrator is implemented to Campus portal System in advance.
* Contact Details
* The Contact Detail consists of some items described as below.

1. Permanent Address

2. Contact Phone No

* + All items are compulsory demanded.
  + Permanent Address
* Permanent Address should be filled.
* But only the state should be selected from options.
* The Security Question information

The Security Question information is needed when Staff lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer
   * All items are compulsory demanded.
   * Some questions which are difficult to answer for anyone else are prepared in advance.

E.g. which color do you like most?

* + A question should be selected from options by the Staff, and the Answer is registered by the Staff.
* Login information should be entered on one screen, and then Staff information and Security Question information should be entered on another screen.

### 2.2.2 Login Process

* Learning Management System always compels Teacher authentication before using itself except when a new account is successfully created.
* The user authentication demands User ID and Password. The User ID and the Password should be checked in three ways.
  + First, The User ID and the Password should be existed and correct.
* If the User ID and the Password are not equal to what the user has registered, the user authentication cannot be provided.
  + Second, the User Type linked to the User ID should be "user".
* When the User Type is " Staff ", user can be placed on “Staff Home”.
  + Finally, User ID should be available.
* The Administrator can decide whether the User ID is available or suspended – Refer to the SRS of the Admin part.
* If user is rejected, user authentication is not provided for Staff.
* The Staff account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, Wholesaler can be placed on respected page.
* The “Staff Home” provides some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Update Account
5. A trigger to Attendance Tracking
6. A trigger to Learning Materials
7. A trigger to Grading Assessment
8. A trigger to Faculty Feature

### 2.2.3 Forgot Password Process

* When Staff lost their Password, the recovery method should be provided by Campus portal system.

The recovery method is described as below.

* + First, Staff enters their User ID for Campus portal System.
  + Next, Campus portal System demands the Answer which has been registered since when the Account was created.

* + Only when the Answer is correct, Staff get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by Campus portal System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Staff could get the user authentication using the new password.
  + Then, the Staff had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for Staff again.
  + In that case, Of course, Staff couldn’t get the new password.

### 2.2.4 Change Password Process

* When Staff wants to change their Password, the measure should be provided by Campus portal System.
* Therefore, Campus portal System should provide the function which is available after getting the Staff authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Staff could change their Password.
* When the current password is changed into new password, Campus portal System compels Staff authentication again.

### 2.2.5 Update Account Process

* Campus portal System should provide the function which makes the account updated for Staff.
* The information Staff could update is described below.

1. Login information

2. User information

3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

#### 2.2.6 Attendance Tracking

• Search conditions are described as below.

1. Teachers should be able to record and track student attendance.

2. Attendance reports should be generated for analysis and record-keeping.

#### 2.2.7 Learning Materials

# 1. The system should provide a user-friendly interface for organizing and accessing learning materials.

# 2. Users should be able to upload and download various file types, including documents, presentations, and multimedia.

**2.2.8 Grading and Assessment**

1. Teachers should be able to grade assignments and exams and provide feedback to students.
2. Students should be able to view their grades and feedback.

**2.2.9 Faculty Features**

* 1. Faculty members shall be able to manage course information, including adding new courses, updating course materials, and managing assignments.
  2. Faculty members shall be able to communicate with students, provide feedback on assignments, and update grades.
  3. Faculty members shall be able to view and respond to student queries through the portal.
  4. Faculty members shall be able to post announcements, schedule events, and manage discussion forums.

**2.2.10 User registration and authentication**

1. The system shall allow users (students, faculty, and administrators) to register by providing necessary details such as name, email, and password.
2. The system shall authenticate registered users based on their credentials before granting access to the portal.

## 2.3 Students Module

* Admin is the user of system who wants to sale the product.

### 2.3.1 Account Creation Process

* Learning Management System compels to create the account before using it. So, Campus portal System should provide the function which makes Students creates new account.
* When Teacher creates new account, the function demands four information described as below.

1. Login information
2. Contact Details

* The Login information

The Login information consists of some items described as below.

1. User ID
2. Password
3. First Name
4. Last Name
5. E-mail address
6. User Type
   * All items are compulsory demanded.
   * User ID

* The user ID should be unique. If the user ID correspond with not case-sensitive to other which is previously registered, the User ID should not be registered as an account.
  + Password
* The Password has constraints which makes the Password consists of more than or equal 8 and less than or equal 16 characteristics including characters described as below.

1. Numeric figure (at least one)
2. Capital alphabet (A-Z) (at least one)
3. Small alphabet (a-z) (at least one)
4. Special character (#, $, %, &, etc.) (at least one)

* The Password is masked by dummy characters. The re-entering Password is demanded.
* The Password must be encrypted in campus portal System.
  + User Type

The User Type falls into three categories described as below.

1. Students
2. Staff
3. Administrator

* The User Type defines also three types of user; "Students user", "Staff user", and "Administrator user”.
* In an Account Creation Process, the user can select Student.
* No one could select The Administrator, because Administrator is implemented to campus portal System in advance.
* Contact Details
* The Contact Detail consists of some items described as below.

1. Permanent Address
2. Contact Phone No
   * All items are compulsory demanded.
   * Permanent Address

* Permanent Address should be filled.
* But only the state should be selected from options.
* The Security Question information

The Security Question information is needed when Students lost their Password. This information consists of two items described as below.

1. Selected Question
2. Answer
   * All items are compulsory demanded.
   * Some questions which are difficult to answer for anyone else are prepared in advance.

E.g. which color do you like most?

* + A question should be selected from options by the Student, and the Answer is registered by the Student.
* Login information should be entered on one screen, and then Student information and Security Question information should be entered on another screen.

### 2.3.2 Login Process

* Campus Portal System always compels user authentication before using itself except when a new account is successfully created.
* The user authentication demands User ID and Password. The User ID and the Password should be checked in three ways.
  + First, The User ID and the Password should be existed and correct.
* If the User ID and the Password are not equal to what the user has registered, the user authentication cannot be provided.
  + Second, the User Type linked to the User ID should be “Student ".
* When the User Type is “Student ", then user can be placed on “Student Home”.
  + Finally, User ID should be available.
* The Administrator can decide whether the User ID is available or suspended – Refer to the SRS of the Admin part.
* If Student is rejected, user authentication is not provided for system user.
* The Student account should alive for so long as the duration decided by Admin.
* Only when the three checks are successfully completed, Student can be placed on respected page.
* The “Student Home” provides some items described as below.

1. A trigger to logout
2. A trigger to update Account
3. A trigger to Change Password
4. A trigger to Search Update account process
5. A trigger to Personal information
6. A trigger to User registration and authentication
7. A trigger to Academic progress
8. A trigger to Course enrolled

### 2.3.3 Forgot Password Process

* When system user lost their Password, the recovery method should be provided by Campus portal system.

The recovery method is described as below.

* + First, system user enters their User ID for Campus portal System.
  + Next, Campus portal System demands the Answer which has been registered since when the Account was created.
  + Only when the Answer is correct, Student get the new password by E-mail which also has been registered since when the Account was created.
  + The new password is automatically generated by Campus portal System.
* Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
* As a consequence, The Student could get the Student authentication using the new password.
  + Then, the Student had better change the new password manually.
* If the Answer is not correct, otherwise, the correct Answer is demanded for user again.
  + In that case, Of course, Student couldn’t get the new password.

### 2.3.4 Change Password Process

* When Student wants to change their Password, the measure should be provided by Campus portal System.
* Therefore, Campus portal System should provide the function which is available after getting the Students authentication.
* The function demands the current password and the new password.
  + Of course, the new password should consist of more than or equal 8 and less than or equal 16 characteristics including at least a numeric figure, a capital alphabet, a small alphabet, and a special character.
  + The current password and the new password are masked by using dummy characters.
  + The new password is demanded to enter twice to avoid a typing error.
* Only when the current password is correct, Student could change their Password.
* When the current password is changed into new password, Campus portal System compels user authentication again.

### 2.3.5 Update Account Process

* Campus portal System should provide the function which makes the account updated for Students.
* The information Students could update is described below.

1. Login information
2. User information
3. Security Question Information

* The Login information

The updatable items as described below.

1. First Name
2. Last Name
3. E-mail address
   * All items are compulsory demanded, but updating is optional.

* The User information

The updatable items as described below.

1. User Name
2. User Phone No
3. E-mail address
4. Permanent address
   * All items are compulsory demanded, but updating is optional.

* The Security Question information

The updatable items as described below.

1. Selected Question
2. Answer
   * All items are compulsory demanded, but updating is optional.

### 2.3.6 Communication and Collaboration

* Users should be able to participate in course-specific discussion boards.
* Users should be able to send private messages to other users.
* Users should be able to share files and collaborate on group projects.

### 2.3.7 Personal Information

1. First Name
2. Last Name
3. E-mail address
4. Permanent address
5. Photos

### 2.3.8 User registration and Authentication

* Users should be able to register with the system using their email addresses and create a password.
* The system should validate user credentials during login to ensure secure access..

### 2.3.9 Academic Progress

* Students shall be able to access and download course materials, assignments, and other relevant resources.
* Students shall be able to communicate with faculty members and submit assignments through the portal.

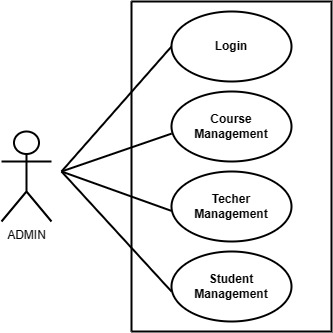
### 2.3.10 Courses Enrolled

• Students could see the information of courses.

#### 2.4 Use Case Diagram

**2.4.1 Admin Module:**

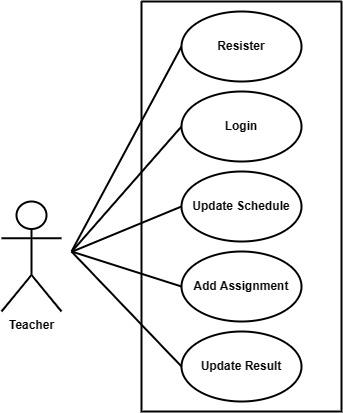
1. In Admin use case diagram Admin is the Actor.
2. Admin can handle following use cases:
3. Login
4. Teacher Management
5. Course Management
6. Student Management



*Fig. Use case diagram for Teacher*

* + 1. **Teacher Module:**

1. In Teacher use case diagram Teacher is the Actor.
2. Teacher can handle following use cases:
3. Register
4. Login
5. Update Schedule
6. Add Assignments
7. Update Result

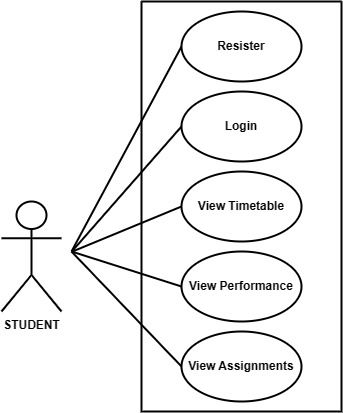
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*Fig. Use case diagram for Teacher*

**2.4.5 Student Module:**

1. In Student use case diagram Student is the Actor**.**
2. Student can handle following use cases:
3. Register
4. Login
5. View Timetable
6. View Performance
7. View Assignment

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*Fig. Use case diagram for Student*