



# **University Student Management Information System**

## **System Requirements Specification (SRS)**

Level II [Semester 1]

Mini project - Group 08

Submitted to: Mr.Tharindu Dilhan

Submitted by-

- TG/2021/1057 W.A.K.P Lakshan
- TG/2021/1052 G.A.Rangajeewa
- TG/2021/1064 K.A.N. Perera
- TG/2021/1035 A.M.S.S.Kumara

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# 1.Introduction

## 1.1 Purpose

The purpose of this document is to delineate the functional and non-functional requirements, as well as other pertinent factors, for the development of the University Student Management Information System (TECMIS). TECMIS serves as a mini-project aimed at enhancing the management of student-related processes within the university environment.

## 1.2 Scope

The University Student Management Information System (TECMIS) encompasses the management of various aspects of user profiles, course details, student marks, attendance, notices, timetables, and faculty medical records within the Faculty of Technology. The system caters to multiple user roles, each endowed with specific authorities, including:

- Manage and see academic programs and courses offered.
- Financial management and budgeting
- Manage faculty and staff,
- Student recruitment, admission, and retention
- Manage and see research activities and collaborations.
- Manage facilities and equipment.
- Data management
- Compliance with relevant laws, regulations, and accreditation standards.

Furthermore, TECMIS offers detailed insights into student performance, including results, attendance records, and examination eligibility. Students can access their grades for individual subjects and their Grade Point Average (GPA) through the system.

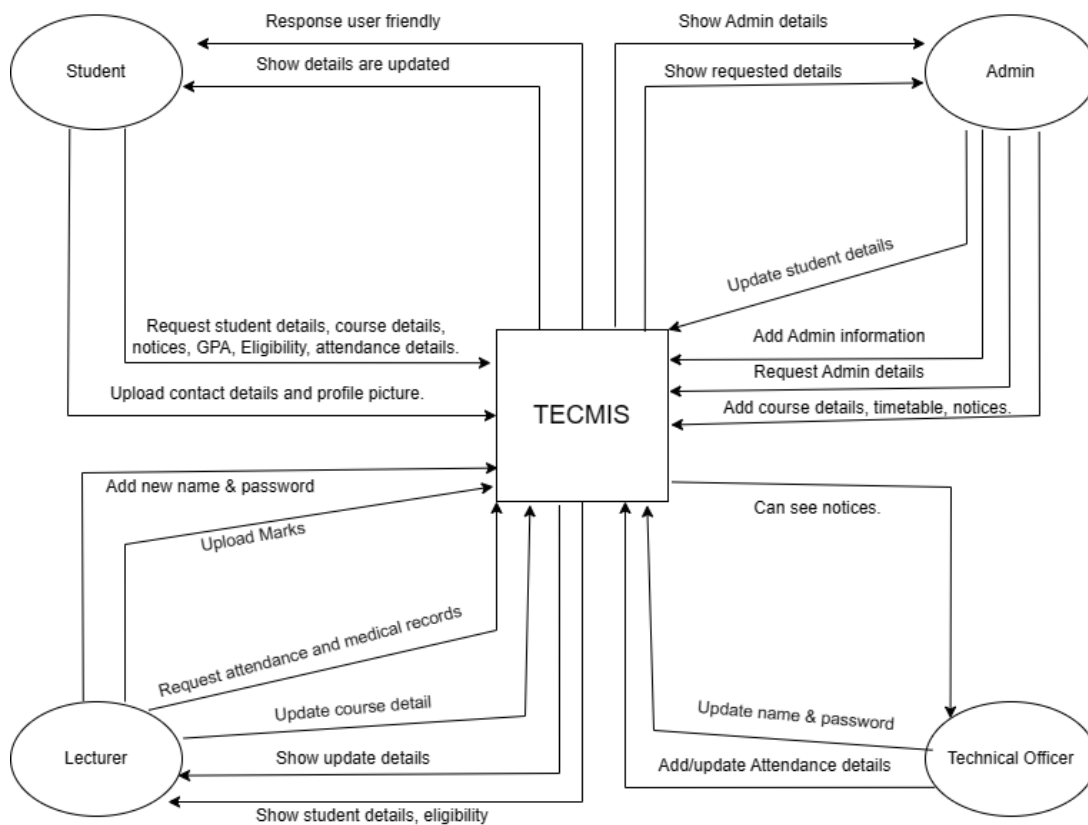
## 2. Overview

The University Student Management Information System (TECMIS) is a robust and comprehensive solution designed to empower university administrators in effectively tracking and monitoring student progress while efficiently managing academic and administrative data.

By transitioning from traditional paper-based systems to a digital platform, TECMIS eliminates the risks associated with human errors, offering a more reliable and accurate means of data management. Moreover, the system ensures data security by providing authorized parties with controlled access to sensitive information.

With the migration to a web-based application, TECMIS introduces a plethora of features tailored to meet the diverse needs of different user profiles, including administrators, lecturers, students, and technical officers.

### 2.1 Context Diagram



### 3. Functional Requirement.

#### 3.1 Admin management requirements.

##### 3.1.1 Add new users.

<b>Use case D:</b>	1
<b>Use Case Name:</b>	Add new users
<b>Actors:</b>	admin
<b>Description:</b>	Can add new Lecturers, Students, Technical Officers to the System
<b>Trigger:</b>	Clicks the 'add user' button.
<b>Preconditions:</b>	Logged into the LMS.
<b>Post – conditions:</b>	If the user already in the system, display an error message.
<b>Normal Flow:</b>	<ol style="list-style-type: none"><li>1. Super admin clicks 'add user ' button in LMS.</li><li>2. Display a form to get new user details.<ol style="list-style-type: none"><li>a. NIC</li><li>b. Username</li><li>c. New Password</li><li>d. Confirm Password</li><li>e. Email</li><li>f. Phone</li><li>g. Permission Level</li><li>h. Click the 'Add' button to add the new user.</li></ol></li></ol>
<b>Alternative Flows:</b>	If the admin decides to cancel the operation, they click the 'Cancel' button, and the system returns to the previous screen without adding a new user.
<b>Exceptions:</b>	If there is an admin with the same email, NIC displays an error.
<b>Special Requirements:</b>	N/A

### 3.1.2 View users

<b>Use case ID:</b>	2
<b>Use Case Name:</b>	View users
<b>Actors:</b>	admin
<b>Description:</b>	The purpose of this use case is to allow the admin to view existing admin users.
<b>Trigger:</b>	When super admin clicks the 'View user button'.
<b>Preconditions:</b>	Logged into the LMS as admin.
<b>Post – conditions:</b>	If the user is not in the system, display an error message.
<b>Normal Flow:</b>	<ol style="list-style-type: none"><li>1. Super admin clicks 'View user' button in LMS.</li><li>2. Display list of registered users with the following details for each user.<ol style="list-style-type: none"><li>a. NIC</li><li>b. Username</li><li>c. Password</li><li>d. Email</li><li>e. Phone</li><li>f. Permission Level</li></ol></li></ol>
<b>Special Requirements:</b>	N/A

### 3.1.3 Edit user details.

<b>Use case ID:</b>	3
<b>Use Case Name:</b>	Edit user details.
<b>Actors:</b>	admin
<b>Description:</b>	Admin can edit other users details.
<b>Trigger:</b>	The admin clicks the 'edit' button of a specific user in the 'view user' list.
<b>Preconditions:</b>	Logged into the LMS as admin.
<b>Post – conditions:</b>	N/A
<b>Normal Flow:</b>	<ol style="list-style-type: none"><li>1. Click the edit button of a specific user in the view user list.</li><li>2. Display a form with the following details of the selected user.<ol style="list-style-type: none"><li>a. NIC</li><li>b. Username</li><li>c. Password</li><li>d. Email</li><li>e. Phone</li><li>f. Permission Level</li></ol></li><li>3. Click the Okay button to confirm edit.</li></ol>
<b>Alternative Flows:</b>	Click the 'Cancel' button.
<b>Special Requirements:</b>	N/A



#### 3.1.4 Delete users.

<b>Use case ID:</b>	4
<b>Use Case Name:</b>	Delete users
<b>Actors:</b>	admin
<b>Description:</b>	Admin can delete the other users record
<b>Preconditions:</b>	Logged into the LMS as admin.
<b>Normal Flow:</b>	<ol style="list-style-type: none"><li>1. Super admin click the delete button of a specific user in the view user section.</li><li>2. Display a confirmation dialog.</li><li>3. Delete user.</li></ol>
<b>Special Requirements:</b>	N/A

## 3.2 Lecturer Management requirements

### **Lecturer Management requirements**

- Can update their profile except username and password.
- Can modify and add materials to courses.
- Can upload marks for all kind of exams.
- Can see student details.
- Can see student eligibility.
- Can see student marks, grades and GPA.
- Can see notices.

### 3.2.1 Can update their profile except username and password.

<b>Use Case ID</b>	1
<b>Use Case Name</b>	Update profile details, excluding username and password.
<b>Actors</b>	Lecturer
<b>Description</b>	The purpose of this use case is to allow update their profile details.
<b>Trigger</b>	Lecturer Enter Username and Password
<b>Preconditions</b>	Logged into the LMS as Lecturer
<b>Post-conditions</b>	If the lecturer's password or username is incorrect, an error message is displayed.
<b>Normal Flow</b>	Lecturer can update his profile Who wanted. <ul style="list-style-type: none"><li>• preferences Course</li></ul>

### 3.2.2 Can modify and add materials to courses.

<b>Use Case ID</b>	2
<b>Use Case Name</b>	Update and add courses
<b>Actors</b>	Lecturer
<b>Description</b>	The purpose of this use case is to Lecturer can modify and add course materials.
<b>Preconditions</b>	Logged into the LMS as Lecturer
<b>Post-conditions</b>	If the Lecturer is Password or username is incorrect, display an error message.
<b>Normal Flow</b>	After The update and add materials to courses updated the system

### 3.2.3 Can modify and add materials to courses.

<b>Use Case ID</b>	3
<b>Use Case Name</b>	Upload marks
<b>Actors</b>	Lecturer
<b>Description</b>	The purpose of this use case is to Lecturer Can upload marks for all kind of exams.
<b>Preconditions</b>	Logged into the LMS
<b>Post-conditions</b>	If the Lecturer is Password or username is incorrect, display an error message.
<b>Normal Flow</b>	Once marks for all types of exams have been uploaded, students can access their results via their student accounts. .

### 3.2.4 Can see student details.

<b>Use Case ID</b>	4
<b>Use Case Name</b>	See student details
<b>Actors</b>	Lecturer
<b>Description</b>	This use case enables lecturers to view comprehensive student profiles, including student names, departments, activities, and details of all subjects, along with eligibility status and GPA.
<b>Trigger</b>	Lecturer Enter Username and Password and go through under the students details unit.
<b>Preconditions</b>	Logged into the LMS as Lecturer
<b>Post-conditions</b>	If the Lecturer is Password or username is incorrect, display an error message.
<b>Normal Flow</b>	After reviewing student information, lecturers determine which exams students need to retake and any necessary actions. They then communicate this information to the students.

### 3.2.4 See attendance records of students.

<b>Use Case ID</b>	5
<b>Use Case Name</b>	See attendance records of students
<b>Actors</b>	Lecturer
<b>Description</b>	The purpose of this use case is to Lecturer Can see attendance and medical records of students
<b>Trigger</b>	Lecturer Enter Username and Password and click on the student details.
<b>Preconditions</b>	Logged into the LMS as Lecturer
<b>Post-conditions</b>	If the Lecturer is Password or username is incorrect, display an error message.
<b>Normal Flow</b>	<p>Lecturer can see,</p> <ul style="list-style-type: none"><li>• Student attendance in each lecture</li></ul> <p>By this, the lecturer will decide whether the concerned student will face the final exam or not and inform the student.</p>

### 3.3 Student management requirements

- Students can update only contact details and profile picture of their profile.
- Students can see their course details.
- Students can see their grades and GPA.
- Students can see attendance details.
- Students can see medical details.
- Students can see notices.

#### 3.3.1 Update student personal details

<b>Use case ID:</b>	1
<b>Use Case Name:</b>	Edit student personal details
<b>Actors:</b>	Student
<b>Description:</b>	The purpose of this use case is to allow to the student to edit and update only contact details and profile picture of their profile.
<b>Trigger:</b>	Registered student can click “Edit Personal Details” button
<b>Preconditions:</b>	First registered student to the LMS
<b>Post – conditions:</b>	If the user is not registered the LMS get an error message
<b>Normal Flow:</b>	<ol style="list-style-type: none"><li>3. Student clicks ‘Edit Personal Details’ button in LMS.</li><li>4. Display to list of personal details.<ol style="list-style-type: none"><li>g. Username</li><li>h. New Password</li><li>i. Confirm Password</li><li>j. Email</li><li>k. Phone</li><li>l. Profile picture</li></ol></li></ol>



### 3.3.2 Students can see their course details.

<b>Use case ID:</b>	2
<b>Use Case Name:</b>	See attendance details
<b>Actors:</b>	Student
<b>Description:</b>	The purpose of this use case is to allow to see the attendance for students (Student attendance percentage)
<b>Trigger:</b>	Registered students enter the username and password student can see the attendance list to user
<b>Preconditions:</b>	Logging to the LMS as student
<b>Post – conditions:</b>	Student Enter the password and username incorrectly display error message
<b>Normal Flow:</b>	After see the attendance percentages and other details student can maintain the attendance and submit the medicals.

### 3.3.3 Can see medical details

<b>Use case ID:</b>	3
<b>Use Case Name:</b>	See medical details
<b>Actors:</b>	Student
<b>Description:</b>	The purpose of this use case is to allow to the student to see the medical details.
<b>Trigger:</b>	Registered students enter the username and password after logging “medical details” tab and student can see the medical details to student.
<b>Preconditions:</b>	Logging to the LMS
<b>Post – conditions:</b>	Student Enter the password and username incorrectly display error message
<b>Normal Flow:</b>	After seeing the medical reports students. If students have the any of the changes student can request to change medical details

#### 3.3.4 Can see students' course details.

<b>Use case ID:</b>	4
<b>Use Case Name:</b>	See students course details
<b>Actors:</b>	Student
<b>Description:</b>	The purpose of this use case is to allow to the student to see the course details.
<b>Trigger:</b>	Registered students enter the username and password after logging “course details” tab and student can see the course details to student.
<b>Preconditions:</b>	Logging to the LMS
<b>Post – conditions:</b>	Student Enter the password and username incorrectly display error message
<b>Normal Flow:</b>	After see the medical reports students. If students can see more about subjects.

### 3.3.5 Can see students grades and GPA

<b>Use case ID:</b>	5
<b>Use Case Name:</b>	See students grades and GPA
<b>Actors:</b>	Student
<b>Description:</b>	The purpose of this use case is to allow to the student to see the GPA, grades and this calculate methods for the student.
<b>Trigger:</b>	Registered student enter the username and password after logging “Result ” tab and student can see the GPA, grades and this calculate methods for the student.
<b>Preconditions:</b>	Logging to the LMS
<b>Post – conditions:</b>	Student Enter the password and username incorrectly display error message
<b>Normal Flow:</b>	After see the Exam results and GPA students. If students, see the result fail student has a button to register those subjects.

### 3.4.6 Can see notices for student.

<b>Use case ID:</b>	6
<b>Use Case Name:</b>	See notices for student
<b>Actors:</b>	Registered student in the LMS
<b>Description:</b>	The purpose of this use case is to allow to student see the notices to student.
<b>Preconditions:</b>	Logging to the LMS
<b>Post – conditions:</b>	Student Enter the password and username incorrectly display error message
<b>Normal Flow:</b>	Students can see notices in the university

### 3.4 Technical Officer Management requirements

- Can update their profile except username and password
- Can add and maintain attendance details of students
- Can add and maintain medical details of students
- Can see notices
- Can see timetables of their department

### 3.4.1 Update profiles details

<b>Use Case ID</b>	1
<b>Use Case Name</b>	update profiles except username and password
<b>Actors</b>	Technical Officer
<b>Description</b>	The purpose of this use case is to allow update user's profiles details.
<b>Trigger</b>	Technical Officer clicks on update users
<b>Preconditions</b>	Logged into the LMS as a Technical Officer
<b>Post-conditions</b>	If one or more fields are empty, display error "Please fill required field"
<b>Normal Flow</b>	<ol style="list-style-type: none"><li>1. Technical Officer clicks on update users.</li><li>2. Display users.</li><li>3. Select a user.</li><li>4. display update form.<ol style="list-style-type: none"><li>a. NIC</li><li>b. Username</li><li>c. Email</li><li>d. Phone</li><li>e. Permission Level</li></ol></li><li>5. Click the 'Add' button to add the new user.</li></ol>
<b>Alternative Flows:</b>	Press the 'Cancel' button.

### 3.4.2 Maintain attendance details of students.

<b>Use Case ID</b>	2
<b>Use Case Name</b>	Can add and maintain attendance details of students
<b>Actors</b>	Technical officer
<b>Description</b>	The purpose of this use case is to keep attendance details of students
<b>Trigger</b>	Technical officers click Attendance button
<b>Preconditions</b>	Logged into the LMS as technical officer
<b>Post-conditions</b>	Error message “attendant sheet is empty”
<b>Normal Flow</b>	<ol style="list-style-type: none"><li>1. click on attendance.</li><li>2. click on the add button.</li><li>3. drop file into upload area.</li><li>4. click save button</li></ol>
<b>Alternative Flows:</b>	Press the ‘Cancel’ button.

### 3.4.3 Update maintain medical details of students

<b>Use Case ID</b>	3
<b>Use Case Name</b>	Can add and maintain medical details of students
<b>Actors</b>	Technical officer
<b>Description</b>	The purpose of this use case is to add and maintain medical details of students
<b>Trigger</b>	Technical officers click on medicals banner
<b>Preconditions</b>	Logged into the LMS as technical officer
<b>Normal Flow</b>	<ul style="list-style-type: none"><li>• click on banner” Medicals.”</li><li>• click on “Add “button.</li><li>• drag and drop files.</li><li>• click on “save” button</li></ul>
<b>Alternative Flows:</b>	Press the ‘Cancel’ button.



#### 3.4.4 Can see notices.

<b>Use Case ID</b>	4
<b>Use Case Name</b>	See notices
<b>Actors</b>	Technical officer
<b>Description</b>	This use case aims to access and view notices.
<b>Trigger</b>	Technical officer view notices under notice section
<b>Preconditions</b>	Logged into the LMS as technical officer
<b>Normal Flow</b>	<ol style="list-style-type: none"><li>1. clicking on the notice</li><li>2. Select a notice.</li></ol>
<b>Alternative Flows:</b>	<ol style="list-style-type: none"><li>3. Press the 'Cancel' button.</li></ol>

## 4. Non-Functional Requirements

### 4.1 Security Requirements:

In the Faculty Management Information System, security is paramount. Access privileges are granted based on roles: an Admin has full control, lecturers and technical officers have limited access related to their roles, and students can only view, upload, and download materials. A login form is implemented to restrict access, ensuring only authorized individuals can use the system.

### 4.2 Performance Requirements:

Non-functional performance requirements for a Learning Management System (LMS) relate to the system's speed and responsiveness. These requirements ensure that the LMS can handle its users' expectations and provide a positive user experience. The following are some examples of common non-functional performance requirements for an TECMIS:

- **Quick Response:** TECMIS must swiftly respond to user actions like page loads, form submissions, and media playback.
- **Efficient Loading:** TECMIS should load pages and media quickly, even during peak usage periods.
- **Scalability:** TECMIS should handle a large number of simultaneous users, including students and instructors, without performance degradation.
- **Data Management:** TECMIS must efficiently manage and store extensive data sets, including student records and course materials.
- **Seamless Media Playback:** TECMIS should seamlessly play multimedia content such as videos and audio without interruptions.

### 4.3 Portability Requirements:

- **OS Compatibility:** The system must work seamlessly with the latest Windows, Mac OS, and Linux versions.
- **Platform Flexibility:** The system should be platform-agnostic and operate efficiently across diverse hardware setups.
- **Code Mobility:** LMS should adopt open-source tech and adhere to industry-standard programming languages for easy adaptation. It should be modular for smooth integration with other software.
- **Data Interchange:** The LMS should facilitate importing and exporting data in standard formats to ensure interoperability.

### 4.4 Usability Requirements:

- **User-Friendly Interface:** LMS should boast a clean, intuitive, and simple interface for effortless navigation.
- **Mobile Accessibility:** LMS should be accessible and functional across various devices, including smartphones and tablets.
- **Customizable Dashboards:** Users should personalize their dashboards and configure custom views to align with their preferences.
- **Reporting and Analytics:** LMS should furnish meaningful data and analytics on student progress and performance for informed decision-making.
- **Course Management:** LMS should facilitate effortless creation, organization, and delivery of online courses and content.

## 5. External interface requirements

**Notification System:** Implement a notification system to alert users about important events, such as new assignments, upcoming deadlines, system updates, or announcements. Notifications should be delivered via email, in-app messages, or SMS, based on user preferences. Users should have the ability to customize notification settings to control the type and frequency of notifications they receive.