Software Requirements Specification

for

TECLMS + TECMIS (Joint Application)

Version 1.0

Database Management Systems Practicum

ICT 1222

Assignment 02 – Mini Project

Group No 10

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Revision History

Name	Date	Reason for modification	Version
Group no	9/17/2023	Initial creation	1.0

1. Introduction

1.1 About the software and the document

This document termed as the Software Requirements Specification (SRS) is intended to provide an extended description of The Joint Application of TECLMS and TECMIS, in order to allow a broad understanding of the functionality of the system to be constructed. A proper system functionality and boundary overview leads to a software that fulfills the necessary user requirements and this document is necessary to review the requirements at the final stages of the document process

The end result of this The Joint Application of TECLMS and TECMIS is allow the faculty to give the ability of manage academic activities and manage information regarding the faculty. This application eases the activities of the faculty residents by allowing online system access rather than physical engagement alone.

1.2 Document conventions

The lower mentioned table serves the purpose allowing the users to understand the SRS document easily and by that to understand the application.

Document details category	Description
Documenting software	Microsoft Word
Font type	Calibri
Font size	11pt
Line and paragraph spacing	1.15
Headings	Bold
Color	Black

1.3 Intended audience and the product scope

This software is strictly intended to be used in The Faculty of Technology, University of Ruhuna and by that functions varies as the hierarchy within the organization.

This application gives an upper hand to the organization in management process and academic activities. There are mainly two sectors Learning Management System section and the Management Information System Section.

In the Learning Management System section student academic related details, academic staff academic related details, course contents, assignment details, examination details are mainly present.

In the Management Information System section student basic and registration details, academic staff basic and academic status, course module registration, payment details, medical submissions, exam registrations, overall GPA status are stored.

1.4 References

2. Overall Description

2.1 Product features

- Student log-in functionality.
- View student basic details.
- View student last log-in time.
- CGPA/SGPA check.
- Payable details check
- Student academic details check
- Staff log-in functionality
- Staff basic details check
- Staff academic details check
- Department basic details
- Course basic details check
- Course materials
- Past paper query
- Account query
- Student attendance check
- Staff attendance check
- Submissions check
- Assessment check
- Notice check
- Centralized data administration
- Data querying regarding to the status within the organization.

2.2 User descriptions

- **Administrator –** Centralized character for managing the overall system and maintaining it at the highest order. The one person with all the privileges within the system with granted permission of all data monitoring and authorizing all tasks. He's also primarily responsible for data backups as well.
- **Academic staff user –** Granted with all permission for one or many course modules and capable of uploading course documents, scheduling exams and publishing exam results. Also capable of viewing student academic data only for the slotted course module and a restricted view of student personal data and also upload past papers.
- **Non-Academic staff user –** Granted with only the permission to upload and update student attendance data and restricted to all other data.
- **Undergraduate –** The main intended user of the application who can access course module materials including past papers, grades, GPA values, access examinations and view their reports and a restricted view of other students and lecturers academic and personal data.
- **Accountants –** Only concerned with the accounting part which is to process payable data and upload it to the system.
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2.3 Operating environment

- **Operating system –** Operating systems above Microsoft Windows 7 or above.
- **Database –** MYSQL database
- **Coding editor –** Visual Studio Code
- **Server –** XMAPP

2.4 Assumptions and dependencies

2.4.1 Assumptions

- A constant internet connection is assumed in order to have a 24 hour running.
- The user must process an understanding of basic functionality of a computer and the system.
- The only option against a security breach is the separate data backup server.
- The user entered information if within the basic data type is assumed to be correct.

2.4.2 Dependencies

- A funding method is required to maintain and improve the system.
- Mainly dependent upon the correct information and commands.
- Availability of logical and physical resources.

3. System Features

3.1 System Features and Description.

3.1.1 Student Register and Login

3.1.1.1 Description and priority

- Description – Allows users (lecture, student) to create an account and log in to access their profiles.
- Priority-High

3.1.1.2 Stimulus/Response Sequences

Stimulus

- User enters to the website.
- Click on Login/Registration Tab
- User fills in field student id, password log in and lecture uses the lecture id and password to log in.

Response

- If the password and username are correct the System verifies and display design dashboard according to the user who login in to webpage.

3.1.2 User Profile

3.1.2.1 Description and Priority

- Description-Enable user to view their course module that enrolling in and details.
- Priority- High

3.1.2.2 Stimulus /Response Sequences

Stimulus

- User (Lecture, Student) enter to website.
- Users can add submissions, Quizes.
- Users can customize their profile.

Response

- The system displays user details.

3.1.3 Couse registration

3.1.3.1 Description and priority

- Description – Student can enroll the courses according to department
- Priority-High

3.1.3.2 Stimulus /Response Sequences

Stimulus

- Students can register for courses.

Response

- The system stores the student register details also can be displayed.

3.1.4 Medical and attendance

3.1.4.1 Description and priority

- Description – Tracking attendance and medical information for students.
- Priority-High

3.1.4.2 Stimulus /Response Sequences

Stimulus

- Instructor Marks Attendance mark for student that according to date and time.
- Medical leave of absence getting serious of medical condition.

Response

- Records the attendance data of each student of respective course.
- System calculates the attendance percentage and updates the attendance profile.

3.1.5 Search past papers

3.1.5.1 Description and priority

- Description – Allow students to search exam past papers related to the courses that enroll.
- Priority-Low

3.1.5.2 Stimulus /Response Sequences

Stimulus

- Students can search the past papers using course code, course name, semester or specific keyword to find papers.

Response

- The system processes the search that related past papers based on students searched keyword.
- Matching the details relevant search and display the past papers to student.

3.1.6 Assignment submission and Quizzes

3.1.6.1 Description and priority

- Description –Presenting the digital way to Assignment, Quizes .so it makes lecture and the student work more efficient and convenient.
- Priority-High

3.1.6.2 Stimulus /Response Sequences

Stimulus

- Students upload their assignment files to acceptable format.
- Students can see the deadline of the Assignment submission. Quizes time duration.

Response

- System accepts successful submission.
- System accepts the successful Quizes attempt.

3.1.7 Grades

3.1.7.1 Description and priority

- Description –Student performance will be grading with assignment, quizzes, exams.

- Priority-High

3.1.7.2 Stimulus /Response Sequences

Stimulus

- Lecture views the student's assignment for grading.
- Lecture assign the numerical value for the student assignment.
- Lectures can give feedback to the students about their grade.

Response

- The system records the grade and calculates the student statistics.
- If their feedback from lecture it will display to the student, or there will be auto generate feedback.

3.1.7 Notice

3.1.7.1 Description and priority

- Description –Disseminate important information and announcements to the student.

- Priority-High

3.1.7.2 Stimulus /Response Sequences

Stimulus

- Lectures provide specifics information about quizzes, mid exam, end exam and special events that come up with university.

Response

- If there is a scheduled specific event the system will automatically deliver it at a specific time and date.
- Students can download the notice.

3.1.8. Administrator Dashboard

3.1.8.1. Description and priority
- Description – Allow admin to handle all functionalities related to the user.
- Priority – High.

3.1.8.2. Stimulus/ Response Sequences

Stimulus

- Enter the web site.
- Admins create an admin profile.
- Admin fills in the required fields, such as username and password.
- Click on the Register button.
- Login.

Response

- Redirect to create profile page.
- Verifies the admin details.
- Display message registration successful message.
- System provides admin to manage all the user functionality facility.

3.1.9. Browsing Courses

3.1.9.1. Description and priority
- Description – Allow users to view all Courses that have access to the user.
- Priority – Medium.

3.1.9.2. Stimulus/ Response Sequences

Stimulus

- User enters to the website.
- Users can click on the course.
- Display the course content.
- Users can make changes to the course content according to User privileges.

Response

- Verifies the user details.
- Redirected to webpage according to User privileges.
- Redirected to Course content page.

3.1.10. File Vault

3.1.10.1.   Description and priority
- Description – Allow users to view all Courses that have access to the user.
- Priority – Medium.

3.1.10.2.   Stimulus/ Response Sequences

Stimulus

- User enters to the website.
- Select the privet file option.
- Users can upload, download, or delete privet files in the File vault.

Response

- Verifies the user details.
- Redirected to privet file according to User privileges.
- Do certain changes in the Database.

3.1.11. Event Management

3.1.11.1.   Description and priority

- Description – Allow users to view all Deadlines and submissions that have access to the user.
- Priority – Medium

3.1.11.2.   Stimulus/ Response Sequences

Stimulus

- User enters to the website.
- Select the timeline option.
- User can select the Submission according to the deadlines or the course.

Response

- Verifies the user details.
- Redirected to course according to User privileges.
- Select the course module according to the user instructions.
- display the course modules

3.1.12. About Us

3.1.12.1.   Description and priority
- Description – Enable user to view the details about website. how to use the website & what are the preference
- Priority –Low.

3.1.12.2.   Stimulus/ Response Sequences

Stimulus

- User enters to the website.
- Click on the Overview tab.

Response

- Verifies the user details.
- System displays details about websites and how to use websites and preference links.

3.1.13. Logout

3.1.13.1.   Description and priority
- Description – Users or Admin who log to the system shall be able to Logout.
- Priority –High.

3.1.13.2.   Stimulus/ Response Sequences

Stimulus

- Click on logout.

Response.

- Verifies the user details.
- User/Admin is logged out.

4.   External Interface Requirements

4.1   User Interfaces

The user interface for The Joint Application of TECLMS and TECMIS is exclusively based on a Command Line Interface (CMD). This section outlines the specific requirements related to this interface.

4.2   Command Line Interface (CMD)

4.2.1 Command Syntax

The CMD interface shall use MySQL-compatible syntax for user commands to interact with the database.

4.2.1 User Prompts

The system shall provide clear prompts within the CMD interface, guiding users on MySQL commands and their usage.

Prompts shall assist users in constructing valid MySQL queries.

4.2.3 Command Execution

Upon entering valid MySQL commands with correct syntax, the system shall execute corresponding database operations accurately.

Users shall receive appropriate feedback or confirmation upon successful execution of MySQL queries.

4.2.4 Error Handling

In the event of invalid MySQL commands or syntax errors, the system shall provide informative MySQL-specific error messages to assist users in identifying and rectifying issues.

4.3   Data Entry

4.3.1 Data Input Format

Users shall be required to input data in a format compatible with MySQL database tables and fields.

Data formats for various data types (e.g., text, numbers, dates) shall adhere to MySQL data type specifications.

4.3.2 Data Validation

The system shall ensure that user-entered data adheres to MySQL data type constraints and table structure.

Validation rules shall be established within the MySQL database itself to prevent data entry errors and maintain data integrity.

4.3.3 Data Submission

Users shall interact with the MySQL database directly through SQL queries and commands to submit and manipulate data.

SQL queries and statements used for data submission shall be documented in the system's user guide.

Successful data submission through SQL queries shall result in the desired data changes within the database.

4.4   MySQL User Accounts Interfaces & Privileges

TECLMS + TECMIS (Joint Application) system contain the following MySQL user accounts with the specified privileges.

4.4.1 Admin

MySQL User: Admin

Privileges: All privileges with Grant Option for all the tables in the database.

4.4.2 Dean

MySQL User: Dean

Privileges: All privileges without Grant for all the tables in the database.

4.4.3 Lecturer

MySQL User: Lecturer

Privileges: All privileges without Grant for all the tables in the database.

User creation privileges for all the tables in the database.

4.4.4 Technical Officer

MySQL User: Technical Officer

Privileges: Read, write, and update permissions for attendance-related tables/views.

4.4.5 Student

MySQL User: Student

Privileges: Read permission for final attendance and final marks/Grades tables/views.

4.5   Hardware Interfaces

For TECLMS + TECMIS (Joint Application) system, the following are the characteristics of the hardware interfaces.

- Device – Laptop or Desktop Computer.
- Processor - Core i3
- Monitor/Display - Resolution of 1366 x 768 or better.
- Mouse & Keyboard.
- Network Devices

A specific computer must match the above-mentioned requirements in order to gain the maximum benefits from the system in an efficient manner.

4.6 Software Interfaces

- Operating System – Windows 7 or above
- Database – MySQL
- Web Brower (View Database)
- XAMPP– (Connect with PHP & view Database as web page)
- Microsoft Office – Documentation

5. Other Nonfunctional Requirements

5.1 Performance Requirements

We're committed to making sure our system runs smoothly and responds quickly for users. Specifically, when it comes to MySQL, we want it to perform efficiently with fast response times for queries and data retrieval. This ensures everything operates seamlessly and data management is effective.

5.2 Safety Requirements

To ensure safety and protect user data, we're implementing security measures. This includes MySQL authentication, where access to MySQL components requires proper usernames and passwords, ensuring that unauthorized usage is prevented.

5.3 Security Requirements

Because user data is sensitive, we're taking extra steps to keep it safe. Our system will have a secure MySQL login process with strong password protection to make sure only authorized users can access the data, and to keep that data private.

5.4 Software Quality Attributes

Software Quality: Our system, serving as an official database system, adheres to critical quality attributes:

Correctness: The system must accurately manage data and transactions in line with requirements.

Usability: MySQL interactions will be user-friendly and straightforward for efficient data management.

Flexibility: The system will accommodate diverse data management scenarios and adapt to evolving official needs.

Integrity: Data integrity within the MySQL database will be rigorously upheld to preserve the reliability of records.

Maintainability: The system will be designed for ease of maintenance and updates, ensuring it remains in compliance with standards.

Portability: It will be configured to run seamlessly in standard MySQL environments, guaranteeing compatibility and accessibility.

Testability: The system will undergo rigorous testing to validate its adherence to official requirements and functionalities.