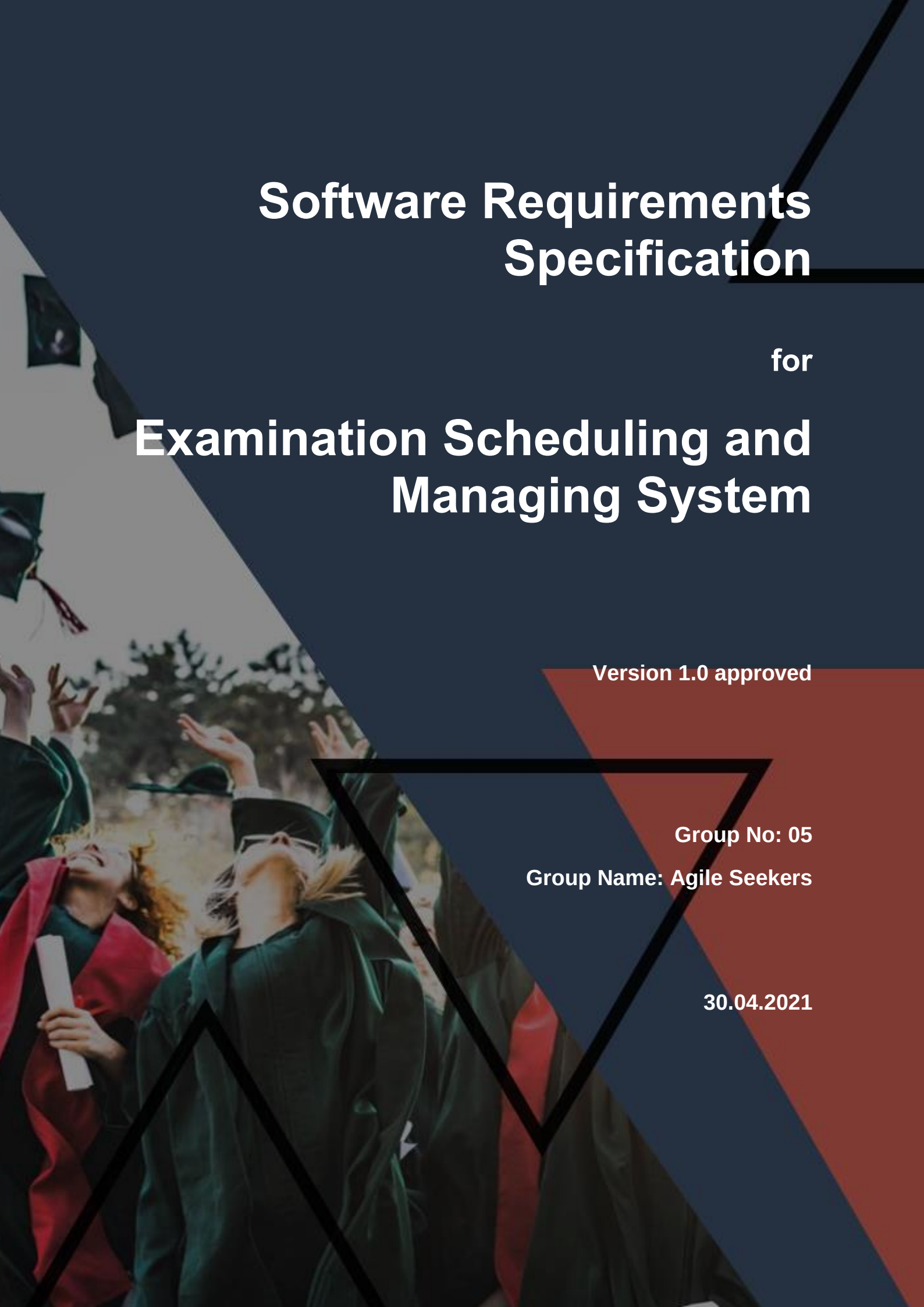


Software Requirements Specification

for

Examination Scheduling and Managing System

Version 1.0 approved

Group No: 05

Group Name: Agile Seekers

30.04.2021

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this SRS document is to specify software requirements of the exams scheduling and managing for the university. It is intended to be a complete specification of the functional and nonfunctional requirements of the system from the user and product perspectives. The main purpose of the system is to automate the tasks carried out manually by different people in the examination branch to perform the examination scheduling and managing.

1.2 Document Conventions

Conventions
Font: Times New Roman
Main topic: Heading 1, Bold
Sub topic: Heading 2
Explanatory points: Italic
Main headings are numbered in whole numbers.

Abbreviations
SRS: Software Requirement Specification
IEEE: the Institute of Electrical and Electronics Engineers

1.3 Intended Audience and Reading Suggestions

This SRS report is composed for a more broad audience, this archive is planned for users straightforwardly engaged with the advancement of the system which incorporates software developers, project consultant's team managers and for general discussions on the implementation decisions. Users are urged to leap to any segment they find applicable without reading the whole document sequentially. Any recommended changes on the requirements recorded on this archive should be comprehended in its last version so it may be a recommendation to validating and developing teams.

1.4 Product Scope

Examination scheduling and management system is fundamentally upgrading the total manual examination handling system into a web based application so that the staff of the examination branch can schedule examination time tables, manage invigilators, update student eligibility for exams, manage seating arrangement and Login process for end users, Exam registration for students, Exam commencements, Papers printing management, appeal/ repeat exam handling, Paper marking handling and Exam results publishing through the system. This application will totally work as a user interface for the system.

1.5 References

The document in this file is adopted from the IEEE Guide to Software Requirements Specifications (Std 830-1998).

2. Overall Description

This part of the SRS is about general factors that affect the system and requirements of the system. The Examination Scheduling and Managing System provides different types of services based on the type of the users (Admin, Staff, Students, lectures). The Examination scheduling and management system is a substitution for the current manual system for examination handling system which is totally based on offline - paperwork.

2.1 Product Perspective

User Interfaces:

The examination scheduling and managing system will have a user friendly and menu based interface.

- ➔ There will be a home page which is the main page that welcomes the audience to the site, tells them what they need to do next, displays the notices and allows them to explore the site in more depth.
- ➔ A Login screen for entering username, password will be provided. Access to different screens will be based upon the user.

Student Profile:

The student is allowed for exam registrations.
The student is allowed for displaying exam details.
The student is allowed to submit their medicals and receipts of payments or online payments.
The student is allowed to view exam results and current GPA.
The student is allowed to check eligibility to sit for a specific exam.

Lecturer profile:

There is a screen for displaying exam details to the lecturer.
There is a screen for displaying for lecturers to upload exam papers.
Current GPA and results of each student can be viewed.

System Interfaces:

- The application runs in the latest version of Chrome or Firefox browser on Windows, Linux and Mac

Hardware Interfaces:

- Processor: Intel 8th Gen Core i5-8400 Processor
- Minimum 500MB disk space for installation
- Hard Disk: 1TB or more
- RAM: 8GB or more
- Network card
- Necessity of a printer to get papers printed.

Software Interfaces:

- Database MySQL

Communication Interfaces:

- The system supports any web browser
- http/https protocols facilitate communication between client and server

2.2 Product Functions

The Examination Scheduling and Managing System will perform the following functions.

- The system should provide the login interface through which only authorized users can pass by.
- The system should allow students to register for their examinations.
- The system should allow students to check their eligibility for their examinations.
- The system should automatically schedule the examination time table.
- The system should automatically allocate the invigilators.
- The system should manage examination commencements.
- The system should allow lecturers to upload papers.
- The system should manage papers printing.
- The system should provide the facility to check the invigilating details to lecturers.
- The system should handle paper marking.
- The system should publish examination results.
- The system should automatically calculate the GPA.
- The system should allow students to submit medicals.
- The system should handle appeal/ repeat examinations.
- The system should allow end users to manage their profiles.

2.3 User Classes and Characteristics

The users identified for this system are,

- ➔ Admin
- ➔ undergraduate students
- ➔ lecturers
- ➔ Exam branch non academics.

Characteristics:

- Administrators of the system are expected to be skilled at using IT facilities and they will be given full access to the system for the purpose of maintenance and troubleshooting. Therefore they should have more knowledge about internal modules of the system and they should be able to rectify small problems which may occur due to sudden system down, disk crashes, power failures and other catastrophe.

- Undergraduate Students and other end users should be familiar with English language and also they are assumed to have the basic knowledge about computers, internet browsing and working on an online platform.

2.4 Operating Environment

Operating environment for the examination scheduling and managing system is as listed below.

- Client/ server system
- Operating system: Windows
- Database: MySQL database
- Platform: Java/PHP

The website is expected to be hosted on an Apache server. Due to the web-based nature of the system it will be compatible with any device that is capable of internet access and has a web browser. With Google chrome being the most popular web browser, special care will be taken to ensure optimum compatibility.

2.5 Design and Implementation Constraints

- System is limited to HTTP/HTTPS Protocols.
- Extra security must be used to secure grades and exam papers.

2.6 User Documentation

This project comprises a user manual. The user manual includes complete product outline, configuration of tools used (Sql Server), technical details, backup procedures and contact information which consists of email address and phone numbers.

2.7 Assumptions and Dependencies

- The product needs Microsoft SQL server to store the database
- The scope of the project won't change for the duration of the life cycle.
- The all-inclusive cost of day-to-day operations will not increase
- Team costs won't change during the undertaking cycle
- Both human and material resources necessary to complete the project must be accessible
- Other asset and material costs will stay reliable all through the project

These suppositions may change during the execution and new attributes might be added. SRS archive will be upgraded in the opinion of changes.

3. External Interface Requirements

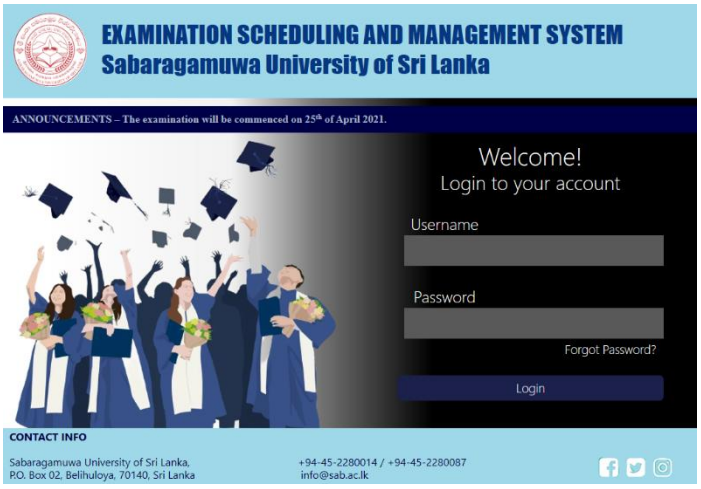
3.1 User Interfaces

- The software provides a good graphical interface for all the end users and allows the administrator to work on the system and perform necessary tasks such as entering, updating and viewing exam information.

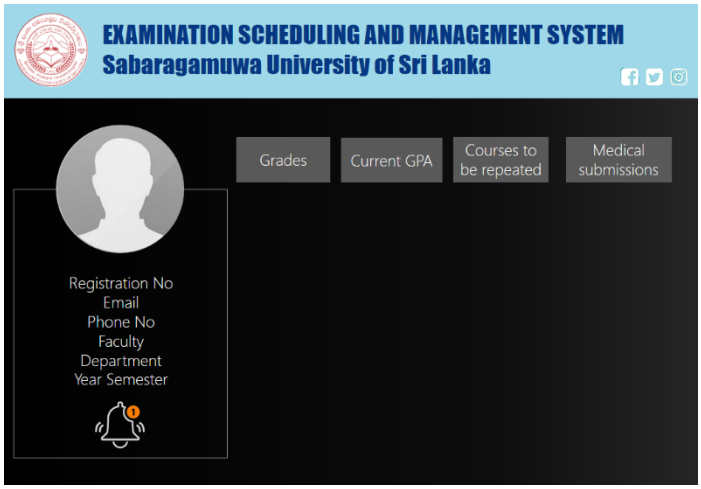
- The examination scheduling and managing system has different modules (Login, Exam Registration, Exam commencements, Paper printing management, Appeal/ repeat exam handling, Paper marking handling, Exam results publishing). All these modules provided with the software are compatible with this graphical user interface and comply with the standard template.

- The design should be simple and the various interfaces should follow a standard template. The user interface should be able to interact with the user management module and a portion of the interface should be dedicated to the login / logout module.

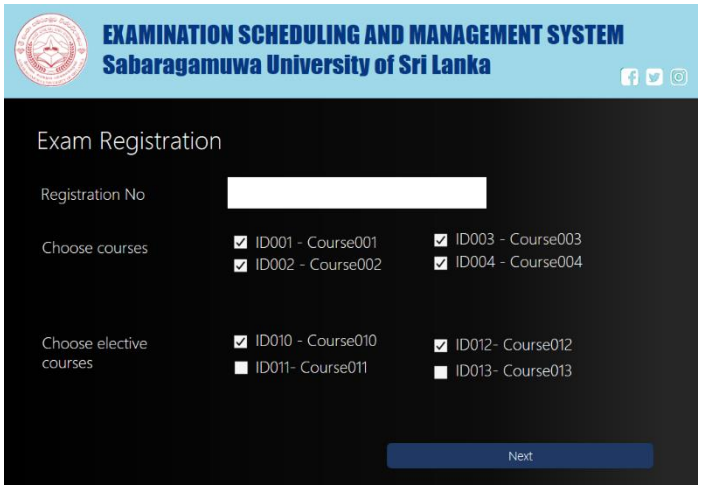
3.1.1 Welcome page

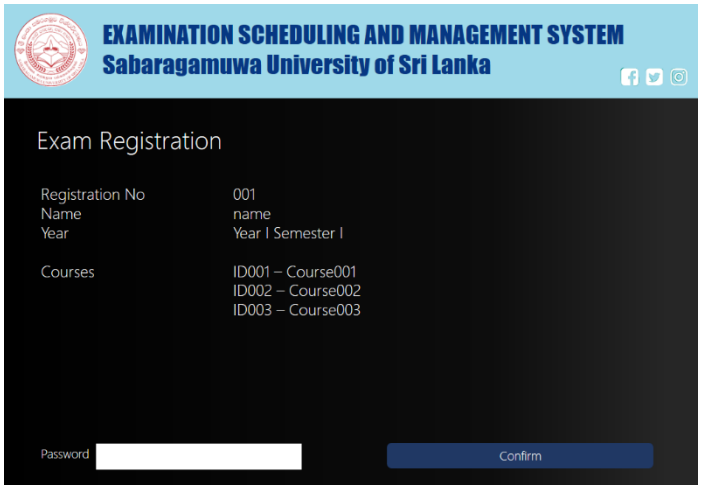


3.1.2 Student profile

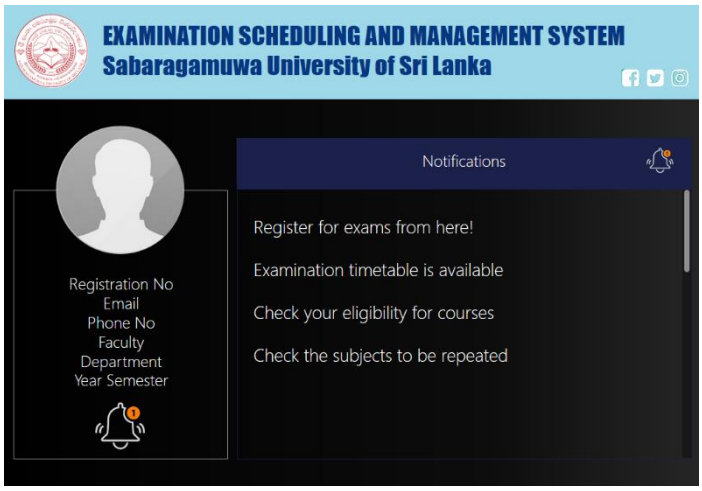


3.1.3 Exam registration

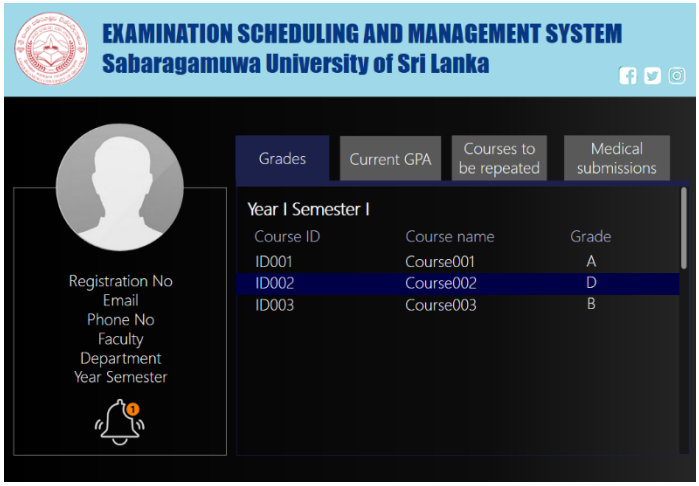




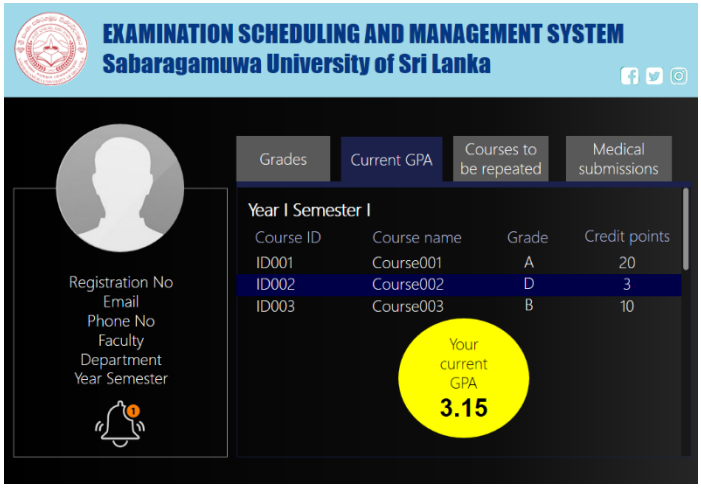
3.1.4 Student Notifications



3.1.5 View grades

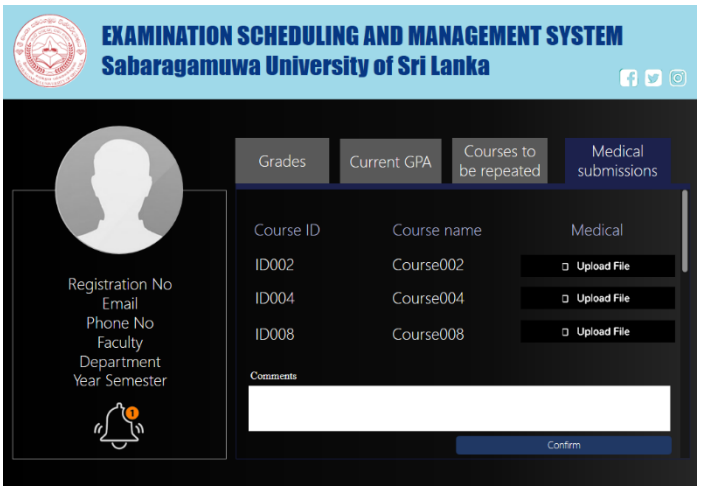


3.1.6 View GPA

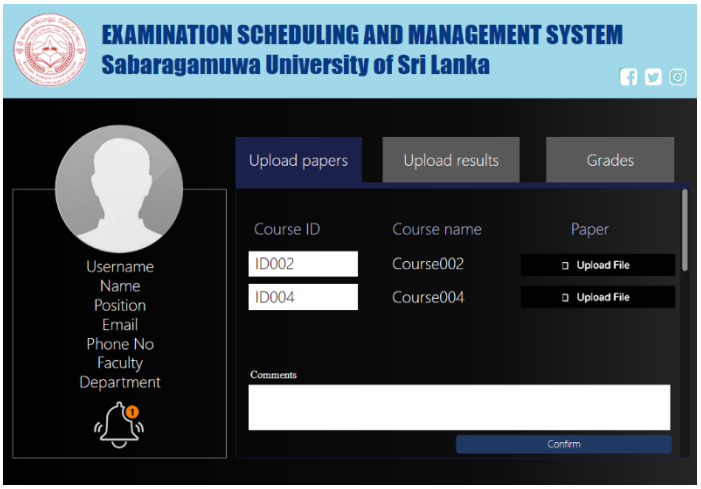


3.1.7 View repeated courses

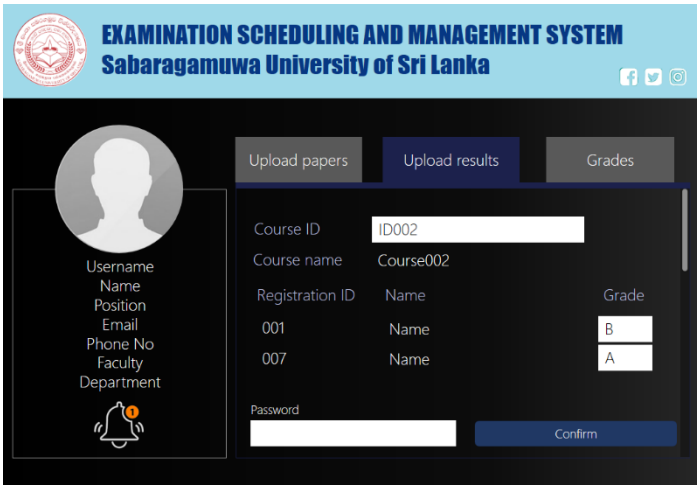
3.1.8 Submit medicals



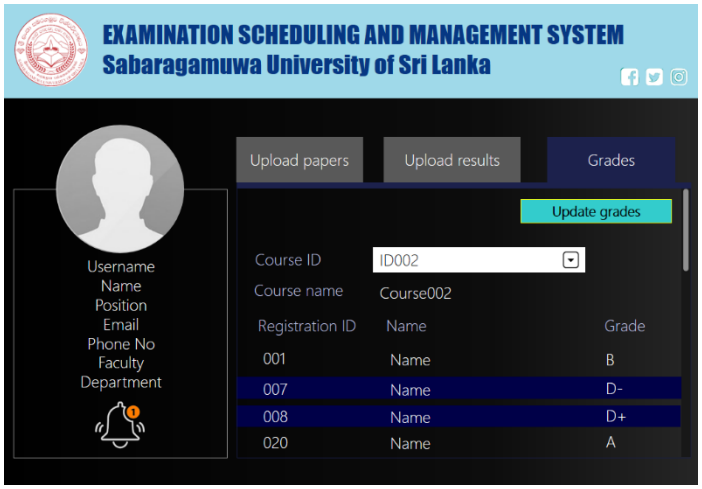
3.1.9 Lecturer profile to upload papers



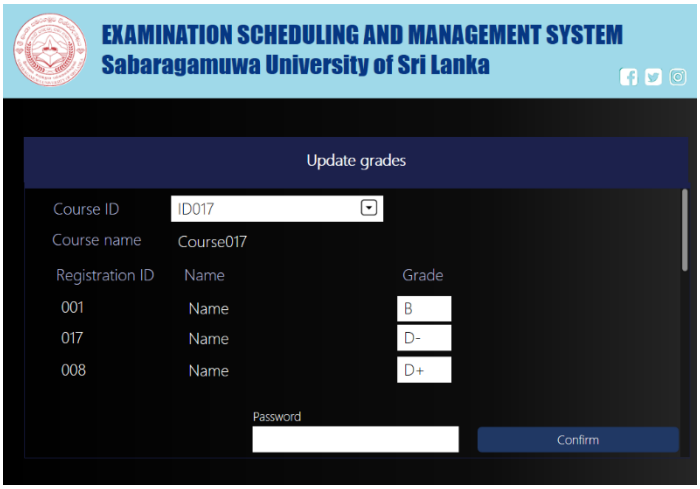
3.1.10 Upload results



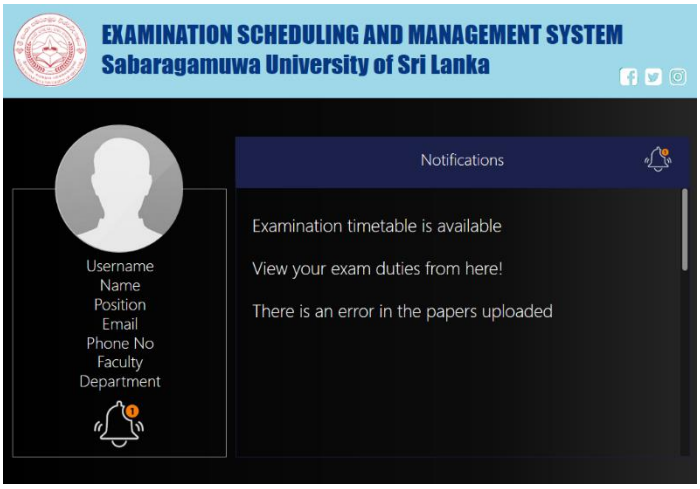
3.1.11 View grades



3.1.12 Update grades



3.1.13 Lecturer Notifications



3.2 Hardware Interfaces

- Processor: Intel 8th Gen Core i5-8400 Processor
- Hard Disk: 1TB or more
- RAM: 8GB or more
- A laser printer for printing of papers

3.3 Software Interfaces

- This software package is developed using java as the front end which is supported by the sun micro system. Microsoft SQL Server as the backend to store the database.
- Operating System: windows operating system
- Language: Java runtime environment, Net beans (front end)
- Database: My SQL Server (back end)

3.4 Communications Interfaces

None

4. System Features

4.1 Login

4.1.1 Description and Priority

This is where all the users can enter the system. Participating actors are admin, student, lecturer, and non-academic staff. Precondition which applied here is that the user should be registered in the system. Priority: - high

4.1.2 Stimulus/Response Sequences

- ➔ The user clicks the login icon.
- ➔ Enter the login credentials.
- ➔ Authenticates username and password. On success, the relevant interface will be displayed.

4.1.3 Functional Requirements

4.1.1.1 Login screen should allow users to enter username and password.
4.1.1.2 After validation of user credentials, if those are correct, the system should allow users to log in.
4.1.1.3 If those are incorrect, the system should not allow users to log in but it should allow users to get an error message and try again.
4.1.1.4 If the user does not remember the password, the system should allow the user to try the 'forgot password' option and get a verification email or verification code and then reset password.

4.2 Exam registration

4.2.1 Description and Priority

This is where the undergraduate students can register for the examinations. Participating actors are undergraduate students. Precondition which applied here is that the undergraduate student should be registered in the system. Priority: - high

4.2.2 Stimulus/Response Sequences

- ➔ The user clicks for exam registration
- ➔ The user selects the relevant courses
- ➔ The user is allowed to recheck the details before submitting
- ➔ The user enters the password and clicks the confirm icon for exam registration.

4.2.3 Functional Requirements

4.2.3.1. The system should notify authorized undergraduate students when the exam registration is available.
4.2.3.2. The system should allow users to select the subjects for their exams.
4.2.3.3. The system should allow the user to preview all input data before submitting.
4.2.3.4. The system should confirm the user after registration.

4.3 View grades (student)

4.3.1 Description and Priority

This is where the undergraduate students can view their results for the examinations. Participating actors are undergraduate students. Precondition which applied here is that the user should be registered in the system. Priority: - high

4.3.2 Stimulus/Response Sequences

- ➔ The user enters to his/her profile and selects the 'Grades' tab
- ➔ The user can view his/her grades relevant to each course followed

4.3.3 Functional Requirements

4.3.2.1 The system should allow users to view their grades.
4.3.2.2 The low graded courses and repeated courses are highlighted.

4.4 View current GPA

4.4.1 Description and Priority

This is where the undergraduate students can view their current GPA for the examinations. Participating actors are undergraduate students. Precondition which applied here is that the user should be registered in the system. Priority: - medium

4.4.2 Stimulus/Response Sequences

- ➔ The user enters to his/her profile and selects the 'Current GPA ' tab
- ➔ The user is allowed to view his/her current GPA as 'Your current GPA' and GPA value.

4.4.3 Functional Requirements

4.4.3.1 The system should allow users to view their current GPAs.

4.5 View courses to be repeated

4.5.1 Description and Priority

This is where the undergraduate students can check which repeat subjects are left to be done. Participating actors are undergraduate students. Precondition which applied here is that the user should be registered in the system. Priority: - low

4.5.2 Stimulus/Response Sequences

- ➔ The user enters to his/her profile and selects the 'Courses to be repeated' tab
- ➔ The user is allowed to view the courses which must be repeated as course ID, course name and course grade

4.5.3 Functional Requirements

4.5.3.1 The system should allow users to view their repeat subjects.

4.6 Submit medicals

4.6.1 Description and Priority

This is where the undergraduate students can submit their medicals for the medical applied examinations. Participating actors are undergraduate students. Precondition which applied here is that the user should be registered in the system. Priority: - low

4.6.2 Stimulus/Response Sequences

- ➔ The student enters to his/her profile and selects the 'Medical submissions' tab
- ➔ The course ID and course name of courses which the medical submissions are allowed is visible
- ➔ The medicals can be uploaded to the relevant courses
- ➔ If the student needs to drop a comment regarding submitting of medicals, it can be done under the text box named 'Comment'
- ➔ The user needs to click the 'Confirm' icon to proceed

4.6.3 Functional Requirements

4.6.3.1 The system should allow users to submit medical information to the system.

4.6.3.2 The system confirms the files were uploaded or sends a message if unsupported files were uploaded.

4.7 Notifications (student)

4.7.1 Description and Priority

This is where the undergraduate students can receive notifications. Participating actors are undergraduate students. Precondition which applied here is that the user should be registered in the system. Priority: - medium

4.7.2 Stimulus/Response Sequences

- ➔ The user enters his/her profile.
- ➔ A bell icon is visible if any notifications are available
- ➔ Availability of the exam timetable, exam registration, eligibility and messages can be viewed.

4.7.3 Functional Requirements

4.7.3.1 The system should notify users whenever notification is available.

4.7.3.2 Timetable of the relevant faculty must be notified

4.8 Submit papers

4.8.1 Description and Priority

This is where the lecturers can submit the soft copies of the examination question papers. Participating actors are lecturers. Precondition which applied here is that the user should be registered in the system. Priority: - high

4.8.2 Stimulus/Response Sequences

- ➔ The lecturer enters to his/her profile and selects 'Upload papers' tab
- ➔ The user must enter the course ID and the system displays the course name and allows users to upload files.
- ➔ The papers can be uploaded to the relevant courses.
- ➔ If the user needs to drop a comment regarding submitting papers, it can be done under the text box named 'Comment'.
- ➔ The user needs to enter his/her password and click the 'Confirm' icon to proceed.

4.8.3 Functional Requirements

4.8.3.1 The system should only allow authorized users to upload the question papers to the system.

4.8.3.2 The system should only allow authorized users to enter a password to access the submitting process.

4.8.3.3 The system confirms the papers were uploaded or sends a message if unsupported files are uploaded.

The papers uploaded are end-to-end encrypted.

4.9 Upload results

4.9.1 Description and Priority

This is where the lecturers can upload the results of the students. Participating actors are lecturers. Precondition which applied here is that the user should be registered in the system. Priority: - high

4.9.2 Stimulus/Response Sequences

- ➔ The lecturer enters his/her profile and selects the 'Upload results' tab.
- ➔ The user must enter the course ID and the system displays the course name and lists out the students who follow the specific course with student ID, name and a textbox to upload the grade.
- ➔ The user needs to enter his/her password and click the 'Confirm' icon to proceed.

4.9.3 Functional Requirements

4.9.3.1 The system should only allow authorized users to upload the grades to the system.

4.9.3.2 The system should only allow authorized users to enter a password before submitting the grades.

4.10 View grades (lecturer)

4.10.1 Description and Priority

This is where the lecturers can view the results of the students. Participating actors are lecturers. Precondition which applied here is that the user should be registered in the system. Priority: - medium

4.10.2 Stimulus/Response Sequences

- ➔ The user enters his/her profile and selects the 'Grades' tab.
- ➔ The user is allowed to select the course ID from a dropdown list.
- ➔ The system displays the course name and lists out the students who follow the specific course with student ID, name and the grade.

4.10.3 Functional Requirements

4.10.3.1 The system should allow the user to view the student results when the user selects the specific course.

4.10.3.2 The system should leave an error message when the user enters an incorrect password.

4.11 Upgrade results

4.11.1 Description and Priority

This is where the lecturers can update the results of the students. Participating actors are lecturers. Precondition which applied here is that the user should be registered in the system. Priority: - high

4.11.2 Stimulus/Response Sequences

- ➔ The lecturer enters to his/her profile and selects 'Grades' tab
- ➔ The user clicks the 'Update grades' icon
- ➔ The user must select specific course ID from the dropdown list and the system displays the course name and lists out the students who follow the specific course with student ID, name and a textbox to upload the grade
- ➔ The user needs to enter his/her password and click the 'Confirm' icon to proceed

4.11.3 Functional Requirements

4.11.3.1 The system should only allow authorized users to upgrade the grades.

4.11.3.2 The system should only allow authorized users to enter a password before updating the grades.

4.12 Notifications (lecturer)

4.12.1 Description and Priority

This is where the lecturers can receive the notifications. Participating actors are lecturers. Precondition which applied here is that the user should be registered in the system. Priority: - medium

4.10.2 Stimulus/Response Sequences

- ➔ The user enters his/her profile.
- ➔ A bell icon is visible if any notifications are available
- ➔ The exam timetable, exam duties, and messages can be viewed.

4.12.3 Functional Requirements

4.12.3.1 The exam duties and timetable of the relevant faculty must be notified

5. Other Nonfunctional Requirements

Non-functional requirements when defined and executed well will help to make the system easy to use and enhance the performance. These requirements focus on user expectations, as they are product properties.

5.1 Performance Requirements

The main performance requirements are response time, throughput, utilization, static volumetric. Each user request should be processed within 10 seconds. The site should load in 3 seconds when there are a large number of simultaneous users using the system.
The performance of the system should be fast and accurate and it must handle expected and unexpected errors, in ways that prevent loss in information and long downtime periods. The system should be able to handle large amounts of data.

5.2 Safety Requirements

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

5.3 Security Requirements

We are going to develop a secured database for the examination branch. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he is able to modify the data, delete, append etc. Whereas the user can only view the information but cannot update or delete the records.

5.4 Software Quality Attributes

5.4.1 ***Reliability***

The examination should be available on the specified date and specified time as many students are doing advance registrations.
The system shall be available 24 hours a day, 7 days of a week on any device.

5.4.2 ***Usability***

This application is a web application designed for the modern users. Moreover, it is using English language so that everyone who is literate with English can use it. Furthermore, users have to know how to use any mobile or desktop devices and how to follow the instructions. Thus, our application is easy to use and understandable so that no time is required for users to become productive at the usage of the system.

5.5 5.5 Business Rules

The business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data. This includes the rules and regulations that the system users should abide by, this includes the cost of the project and the discount provided. The users should avoid illegal rules and protocols
Neither admin nor member should cross the rules and regulations

6. Other Requirements

The individuals are accepted to have essential information on PC and web perusing while the admin of the project must have sound knowledge so he/she can resolve little issues and perform data. The user manual, installation guide and other related material must be adequate to instruct the client how to maintain and utilize the system.