# SOFTWARE REQUIREMENT SPECIFICATION

for

# EXAM REGISTRATION SYSTEM

Version 1.0

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MINI-PROJECT

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# 1. INTRODUCTION

Managing exam activities is a very complex and sophisticated process. In the conventional method of manual registration, the communication between different parties involved in the registration process is very difficult. If not centralized and automated, it opens up room for a lot of errors and mishaps which is not something to be taken lightly when the error in discussion is regarding examinations. Even small mistakes might have serious repercussions, something that cannot be left to chance.

Our Exam Registration System is an interface between the Student and the Exam Controller responsible for the Issue of Hall Ticket. It aims at improving the efficiency in the Issue of Hall ticket and reduces the complexities and time involved in it to the maximum possible extent. The details of what all are the needs of the Exam Registration System and if it fulfils these needs are detailed in the use-case and supplementary specifications.

## 1.1 Purpose

The aim of this project is to create an exam registration software that computerizes the exam registration and scheduling process. If the entire process of issuing a hall ticket is done in a manual manner then it would take several days for the hall ticket to reach the student. Considering the fact that the number of students for hall tickets is increasing every year, an Automated System becomes essential to meet the demand. So, this system uses several programming and database techniques to elucidate the work involved in this process.

The purpose of the Software Requirements Specification (SRS) document is to describe the external behaviour of the Exam Registration System. Requirements Specification defines and describes the operations, interfaces, performance, and quality assurance requirements of the Exam Registration System.

The document also describes the non-functional requirements such as the user interfaces. It also describes the design constraints that are to be considered when the system is to be designed, and other factors necessary to provide a complete and comprehensive description of the requirements for the software. The Software Requirements Specification (SRS) captures the complete software requirements for the system, or a portion of the system.

## 1.2 Scope

The Exam Registration System provides the students and members of the exam cell with information about exams, online registration for exams and many other facilities. The developed project will have the following features:

- Students using the system can register for exams by entering details (such as name, reg.no etc.,).
- Students will be able to search for upcoming examinations based on course name or course ID.
- They will have tracking features available to them such as a schedule of exams they have enlisted for with the ability to withdraw if needed.
- Additionally, they'll be able to keep tabs on exams they have to reappear for.
- There are different kinds of end users that can access the system (Student, Administrator).
- There is an authentication system enabled for different types of users
- Administrators using the system will have the ability to add new examinations, remove or re-schedule exams.
- A software will be available to them to generate schedules for desired exams.
- They can access the list of students who have applied for each exam, generate statistics and reports of an exam.

The features that are described in this document are used in the future phases of the software development cycle. The features described here meet the needs of all the users. The success criteria for the system is based on the level up to which the features described in this document are implemented in the system.

## 1.3 Definitions, Acronyms and Abbreviations

CoE – Controller(s) of Examination
Id – Identification number

## 1.4 Overview

The SRS will provide a detailed description of the Exam Registration System. This document will provide the outline of the requirements, overview of the characteristics and constraints of the system.

1.4.1 Section 2: This section of the SRS will provide the general factors that affect the product and its requirements. It provides the background for those requirements. The items such as product perspective, product function, user characteristics, constraints, assumptions and dependencies and requirements subsets are described in this section.

1.4.2 Section 3: This section of SRS contains all the software requirements mentioned in section 2 in detail sufficient enough to enable designers to design the system to satisfy the requirements and testers to test if the system satisfies those requirements.

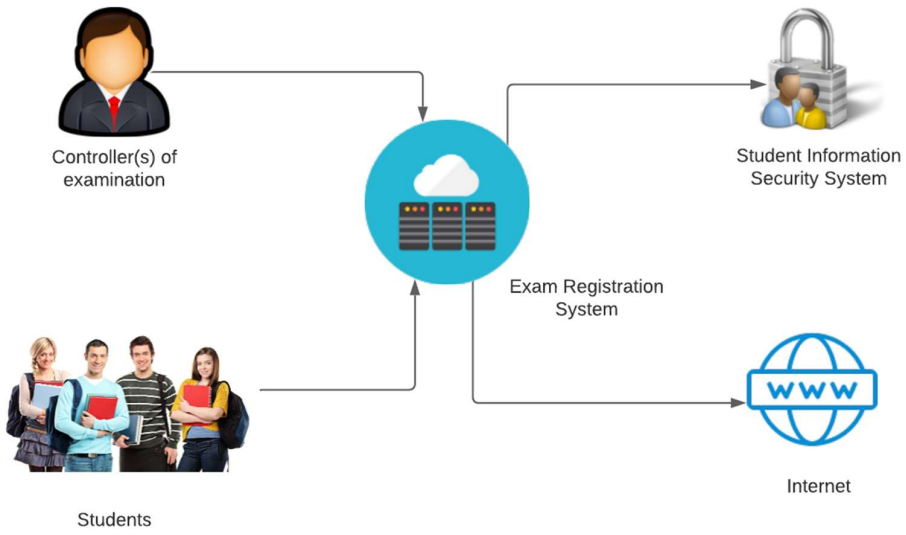
# 2. OVERALL DESCRIPTION:

## 2.1 Product Perspective

The Exam Registration system is a software package used by college systems to automate the process of scheduling exams and thus making it simpler for the management to schedule/re-schedule exams in a seamless and efficient manner. The software will have a portal for both the students and the controller(s) of examination. The students can register for exams using this portal and also keep a track of the exams that they are writing. The automated scheduling is one of the key features of the software, the admin will also have the authority to manually change dates of the exams in case of unexpected events. The application will also provide statistical reports to the admin about exams.

The complete overview of the system is shown in the overview diagram given below:

1. The product to be developed has the interactions with the users: Controller(s) of Examination, Students.
2. The product will have to interact with other systems like: Internet, Student information security system.




## 2.2 Product Functions

- The Exam Registration system provides an online platform for registration and scheduling of exams. The Product functions are more or less the same as described in the product perspective. The functions of the system include the various services provided by the system based on the type of user [Student/CoE].
- Students will be given a portal to login and search for exams based on course id and register for the exam from the same.
- Students can keep a track of exams that they have registered for and can view the results once they are released.

- The controller of exam is given the provision to automatically schedule the exams, and also manually schedule if needed.
- The controller is provided with interfaces to add, remove and update examination information.
- The controller can access the list of students who are writing a particular exam and also, he can view the exams taken up by a particular student.
- The controller can obtain statistical reports such as the number of students attending an exam, average score, marks distribution and so on.
- The system uses the University information security requirements to provide the login facility to the students

## 2.3 User Characteristics

The users of the system are the students and controller(s) of examination. Both the users are assumed to have basic computer knowledge. The administrators of the system to have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

## 2.4 Constraints

- The information of all the users must be stored in a database that is accessible by the Exam Registration System.
- The University Student Information Security System must be compatible with the Internet applications.
- The Online Exam Registration System is connected to the university server and is running all 24 hours a day.
- The users access the Online Exam Registration System from any computer that has Internet browsing.
  capabilities and an Internet connection.
- The users must have their correct usernames and passwords to enter into the Online Exam Registration System.

## 2.5 Assumptions and dependencies

- The users have sufficient knowledge of computers.
- The University computer should have Internet connection and Internet server capabilities.
- The users know the English language, as the user interface will be provided in English
- The product can access the university student database

## 2.6 Use Cases

The system will consist of a screen that displays various options for the users to select from. The system queries the customer for the type of account - either Student or CoE.

After getting the type of account, the system redirects them to the login screen and validates the user's credentials.

### 2.6.1 Use Case: Register for an Examination

Brief Description:

Student searches for an exam by its ID or name and registers for the same.

Step-by-Step Description:

1. Student logs on to the system as examinee.
2. Student searches for an exam by its name or course id.
3. Student registers for the selected exam.
4. Student makes payment for the exam.
5. Student details are verified by the CoE.
6. CoE issues digital hall ticket for the student.

Users Involved:

1. Student
2. CoE
3. Bank Servers

Exceptions:

1. Invalid login.
2. Bank servers are down.
3. Invalid exam name or id.
4. Invalid student details.
5. No exam seats available.

### 2.6.2 Use Case: Access Student Dashboard

Brief Description:

The Examinees can view their student dashboards which contain personal information along with details of all the exams he/she has registered for.

Step-by-Step Description:

1. Examinee logs on to the system.
2. User submits request to the system to access the student dashboard.
3. He/she can edit their personal details and confirm the changes.
4. The user can view the list of all exams they have registered for and the examination schedules the were published.

Users Involved:

1. Student

Exceptions:

1. Invalid login.
2. Invalid entries while editing personal details.

#### 2.6.3 Use Case: Add or Update an Examination

Brief Description:

CoE adds a new examination into the Exam Registration.

Step-by-Step Description:

1. Controller logs on to the system as CoE.
2. Controller adds details of new examination or update details of existing examination.
3. Controller verifies the new details and confirms it.

Users Involved:

1. CoE

Exceptions:

1. Invalid login.
2. Conflicting exam name or id.
3. Updates to the same examination by two users at the same time.

#### 2.6.4 Use Case: Prepare Examination Schedule

Brief Description:

CoE prepares a system generated/manual examination schedule.

Step-by-Step Description:

1. Controller logs on to the system as CoE.
2. Controller generates a schedule for the desired exams either manually or using the software.
3. Controller verifies the generated schedule and confirms it.
4. Controller publishes the schedule.

Users Involved:

1. CoE

Exceptions:

1. Invalid login.
2. Conflicting examination timings.
3. One or more selected exams have already been scheduled.

# 3. SPECIFIC REQUIREMENTS

This section describes in detail all the functional requirements.

## 3.1 Functionality

#### 3.1.1 Log-on Capabilities

The product provides secure login facilities

#### 3.1.2 Automatic Scheduling

Provision for automatic scheduling is given to simplify the work of the CoE.

#### 3.1.3 Reminder Service

Students will be alerted if they have an exam to attend.

## 3.2 Usability

**3.2.1** Since all users are familiar with the general usage of browsers, no specific training is required.

**3.2.2** The system is user friendly and self-explanatory

## 3.3 Reliability

The system has to be very reliable due to the importance of data and the damages incorrect or incomplete data can do.

### 3.3.1 Availability

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

### 3.3.2 Mean Time Between Failures (MTBF)

The system will be developed in such a way that it may fail once in a year.

### 3.3.3 Mean Time to Repair (MTTR)

Even if the system fails, the system will be recovered back up within an hour or less.

### 3.3.4 Accuracy

The accuracy of the system is limited by the accuracy of the speed at which the employees of the examination cell and examinees use the system.

### 3.3.5 Maximum Bugs or Defect Rate

Not specified.

### 3.3.6 Access Reliability

The system shall provide 100% access reliability.

## 3.4 Performance

### 3.4.1 Response Time

The information is refreshed every two minutes. The access time for the system should be less than a minute. The system shall respond to the user in not less than two seconds from the time of submission request. The system shall be allowed to take more time when doing large processing jobs.

### 3.4.2 Administrator/Controller Response

The system shall take as less time as possible to provide service to the controller(s).

### 3.4.3 Throughput

The number of transactions is directly dependent on the number of users, the users may be the CoE and also, the people who use the Exam system for registering, viewing examination details, etc.

#### 3.4.4 Capacity

The system is capable of handling 250 users at a time.

#### 3.4.5 Resource Utilization

The resources are modified according the user requirements and also according to the books requested by
the users.

## 3.5 Supportability

The system designers shall take in to considerations the following supportability and technical limitations.

#### 3.5.1 Internet Protocols

The system shall comply with the TCP/IP protocol standards and shall be designed accordingly.

#### 3.5.2 Information Security Requirement

The system shall support the University's information security requirements and use the same standard as the University's information security requirements.

#### 3.5.3 Billing System Data Compatibility

The exam registration amount that will be calculated and sent to the billing system shall be compatible with the data types and design constraints of the billing system.

#### 3.5.4 Maintenance

The maintenance of the system shall be done as per the maintenance contract.

#### 3.5.5 Standards

The coding standards and naming conventions will be as per the American standards.