Software Requirements Specification For Online Exam Monitoring System

Software Requirements Specification

1.0 Introduction

Exam Monitoring System is an interface between the applicant and the Authority responsible for the GRE Examinations. It is developed for the purpose of reducing the delay in registering for the exams and intimation of results to the exam results to the candidates.

1.1 Purpose

- Registering and Writing GRE is very difficult in the usual context as the complexities involved such as need to register for the exams by going to the Regional GRE Center. The number of people going for western countries and other countries for the education are increasing day by day. So the regular system fails for exam registration to many people. So this Software makes use of database and various levels of programming techniques to make the work easier.

1.2 Scope

- Registering process for GRE exam no longer to be slow.
- Provide a communication platform between the applicant and the administrator.
- For the verification process the applicant has to scan and upload the documents itself. No Need to come to the GRE Exam Center.
- The System provides an online interface to the user where they can fill in their personal details and submit the necessary documents (may be by scanning).
- Results Announcement made as easier.

1.3 Definitions, Acronyms and the Abbreviations

• Administrator - Refers to the super user who is the Central Authority who has been vested with the privilege to manage the entire system. It can be any higher official in the Regional Exam Center.

• Applicant – One who wishes to write a GRE Exam.

• HTML - Markup Language used for creating web pages.

• EMS - Refers to this Exam Monitoring System.

1.4 References

[1]IEEE Software Engineering Standards Committee, "IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications", October 20, 1998.

[2] Pressman, Roger (2010). *Software Engineering: A Practitioner's Approach*. Boston: McGraw Hill

1.5 Overview

The remaining sections of this document provide a general description, including characteristics of the users of this project, the product's hardware, and the functional and data requirements of the product. General description of the project is discussed in section 2 of this document. Section 3 gives the functional requirements, data requirements and constraints and assumptions made while designing the system. Section 3 also gives the specific requirements of the product, external interface requirements and gives detailed description of functional requirements.

1.6 Technologies to be used

- Java
- Javascript
- HTML
- Database – Oracle 10g

1.7 Tools to be Used

Eclipse IDE – Recent Version for JAVA

2.0 Overall Description

This section will give an overview of the whole system. The system will be explained in its context to show how the system interacts with other systems and introduce the basic functionality of it. It will also describe what type of stakeholders who will use the system and what functionality is available for each type.

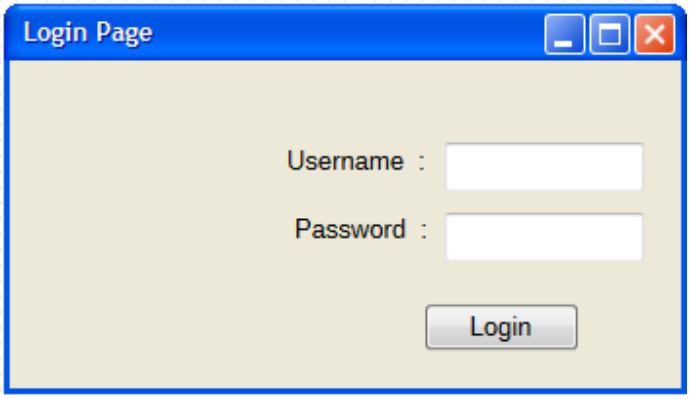
2.1 Product Perspective

The EMS acts as an interface between the 'applicant' and the 'administrator'. This system is developed to provide attractive and easy going user interface at the same time avoiding security risks for data stored in.

2.1.1 User Interfaces

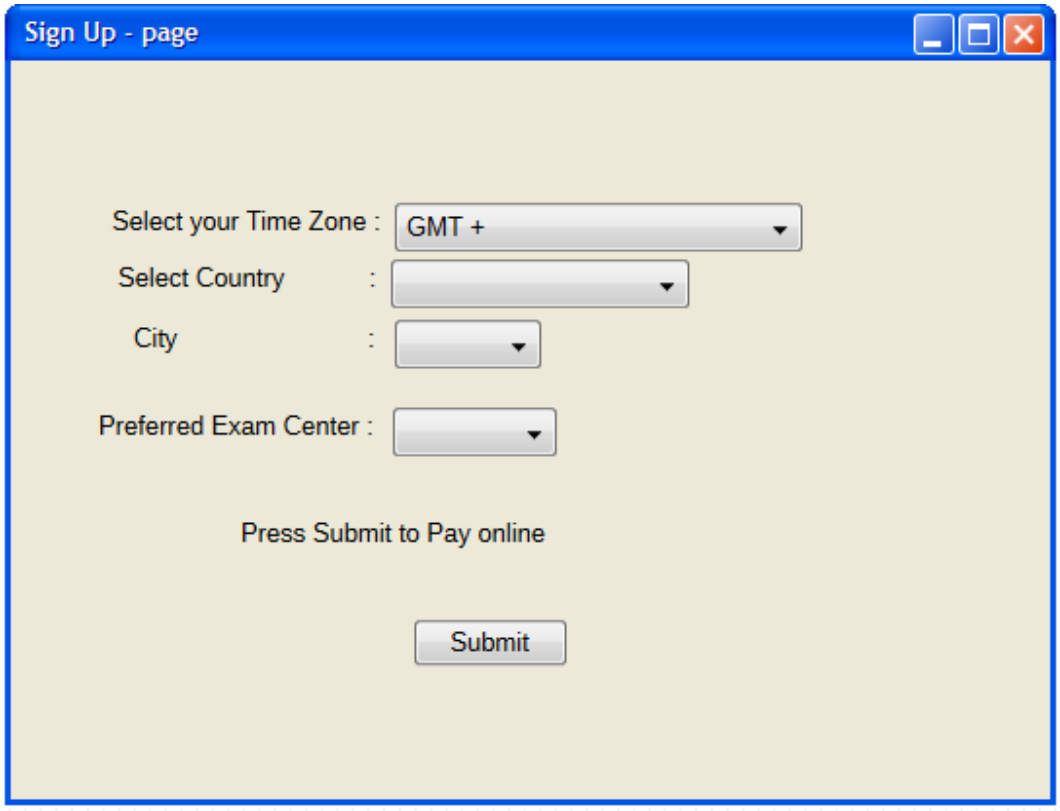
The OEMS system will be placed in the Regional Exam Centers. A copy of the software with client side functionality alone will be provided to the citizens at the time of registration with password.

Login Page

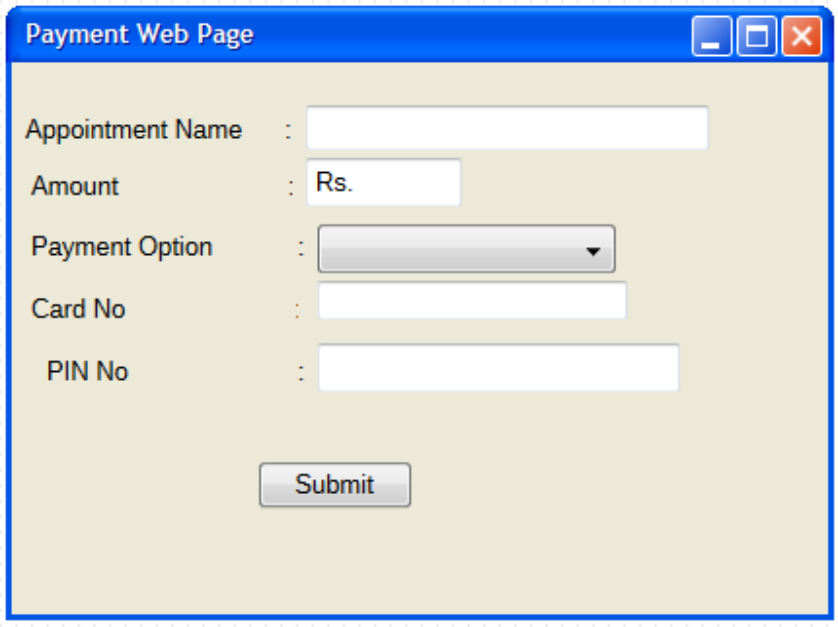


Candidate – Sign Up Page

Exam Registration



Payment – Web Page



2.1.2. Hardware interfaces

EMS is intended to be platform independent. Therefore no specific hardware is excluded. But it will at least work on x86 systems without any additional porting efforts. Moreover, no special hardware is needed for software operation except Scanner.

2.1.3. Software interfaces

EMS is intended to be operating system Window Series such as Windows XP. Databases would be configured using SQL and the front end will be designed using Java.

2.1.4. Memory constraints

EMS is expected to use no more than 256 MB of RAM and 200 MB of external storage.

2.2. Product functions

With the software system the Regional Exam Centerwill be able to generate Unique Registration number to its candidates and maintain their data in their personalized database. The citizens will be able to link their bank accounts with the UserID and pay their Exam Fees. Exam Center can send the results to the candidates who are attended the exam through media services such as Email.

2.3. User characteristics

There are two types of users who use this system.

1) Exam Center Office : EMS officials who use this to retrieve a students information and providing results to the candidates.
2) Candidates : Students who rely on this system to link their bank accounts and pay their Exam fees.

2.4 Constraints

• The applicants require a computer to submit their information.

• The user has to be careful while submitting the information. Much care is required.

• Though the documents are submitted online during registration, it is mandatory to carry the original documents on the date of admission to respective universities.

- User should scan and upload the Recent Photo of him.

2.5 Assumptions and Dependencies

• The Applicants and Administrator must have basic knowledge of computers and English Language

• The applicants may be required to scan the documents and send.

3. Specific Requirements

This section describes in detail all the functional requirements.

3.1 External interface requirements

The EMS will use the standard input/output devices for a personal computer. This includes the following:

- Keyboard
- Mouse
- Monitor

3.2 Functional Requirements

Functional requirements define the fundamental actions that system must perform. The functional requirements for the system are divided into three main categories

1)Exam Registration :

a. The system after authentication collects the citizens
    i. Name
    ii. Gender
    iii. Date of Birth
    iv. Complete address
    v. Documents attached for verification
    vi. Qualification
    vii. Letter of Approval from HoD & Principle of the Institution.
b. This information is stored in a temporary database.
c. After verification with the documents the details are moved to a permanent database.

2) Bill payments :

a. The Candidate enters username and the password.
b. The resultant page will display their linked bank accounts
c. Provision for paying Exam Fees is provided and the changes are made in the databases pertaining to their respective departments.

3) Result Publishing :
    a. The Regional Exam Center uploads the results in the database.
    b. The Candidate enters his username and password.
    c. On the Results Menu Option the user can see the results of the exam written and also a mail has been sent to the candidate.
    d. If Further Required he can download his mark sheet Generated in a Portable Document Format (PDF).

3.3 Non Functional Requirements

Non Functional requirements define the needs in terms of performance, logical database requirements, design constraints, standards compliance, reliability, availability, security, maintainability, and portability.

3.3.1 Alerts

The system can alert the administrator in case of any problems encountered in the system.

3.3.2 Usability

• The system shall allow the users to access the system from the Internet using HTML or it's derivative technologies. The system uses a web browser as an interface.

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

• The system is user friendly and self-explanatory.

3.3.3 Reliability

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

3.3.4 Availability

The system is available 100% for the user and is used around the clock every day and 365 days a year. The system shall be operational around the clock every day and 7 days a week.

3.3.5 Fault Tolerance

Mean Time Between Failures (MTBF)

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

Mean Time to Repair (MTTR)

Even if the system fails, the system will be recovered back up within a hours or less.

3.4 Performance

3.4.1 Response Time

The Splash Page or Information page should be able to be downloaded within a minute using a 56K modem. The information is refreshed every minute. The systems should work concurrently if multiple users are working with the system.The Response time should be within 20-30 seconds.

3.4.2 Maintenance

If the system is under maintenance, it may take around 3 hours to backup the data and the system will be back online after 4 hours.

3.4.3 Capacity

The system is capable of handling 400 users at a time.

3.5 Supportability

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

3.5.1 Internet Protocols

TCP/IP Protocol as it is a reliable one.

3.5.2 Information Security

The system shall not allow the user to enter any malicious content.

3.5.3 Standards

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

3.6 On-line User Documentation and Help System Requirements

Online help is provided for each of the feature available with the EMS. All the applications provide an on-line help system to assist the user. The nature of these systems is unique to application development as they combine aspects of programming (hyperlinks, etc) with aspects of technical writing (organization, presentation). Online help is provided for each and every feature provided by the system.

The user manual should be available as a hard copy and also as online help. An installation document will be provided that includes the installation instructions and configuration guidelines, which is important to a full solution offering. Also, a Read Me file is typically included as a standard component. The Read Me includes a “What’s New With This Release” section, and a discussion of compatibility issues with earlier releases.

Risk Mangement:-

Risks	Category	Impact	Mitigation
Computer Crash	Technical Risk	1	Periodically backup the data atleast once in a two week.
Timely Delivery	Business Risk	3	Enforcing Strict Schedule and Reusing Software Components
Technology chosen will not meet constraints	Technical Risk	4	Seeking guidelines from professionals before start of project.
Changes in Requirements	Project Risk	2	Prototype model with iterations should be adapted to gathering requirements from customer.
Lack of Database Stability	Technical Risk	1	Use of RAID to make a duplicate of each data stored in database.
Poor quality Documentation	Business Risk	2	Conduct audits for documentation periodically
Deviation from Standards	Project Risk	3	Enforcing training on IEEE standards.

Impact Value

1. Catastrophic
2. Critical
3. Marginal
4. Negligible

PROJECT CHART