

Software Requirements Specification(SRS)

for

Examination Management System

Version 1.0

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1. Introduction

The aim of this SRS document is to gather and analyze and give an in-depth insight of the complete **Examination Management System** by defining the problem statement in detail. This Software provides facility for conducting examinations worldwide.

1.1 Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to users. Also, we shall predict and sort out how we hope this software will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the software develops. In short, the purpose of this SRS document is to provide a detailed overview of my software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery life cycle (SDLC) processes.

1.2 Document Conventions

This document is prepared using the IEEE recommended practice for Software Requirements Specification.

1.3 Intended Audience

Target-Audience of SRS– Developers and testers.

1.4 Product Scope

Target-Audience of Software – Students, Companies and Universities.

SRS is very well documented and just follow-on the given order to get the most of this document.

1.4 Over-View Of SRS

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 this software. It also gives the user viewpoint of product. Section 3 also gives the specific requirements of the product. Section 3 also discusses the external interface requirements and gives detailed description of functional requirements.

2. Overall Description

2.1 Product Functions

The functions are divided according to the user types such as:-

Admin:-

The function of the admin is to maintain the database and answer queries.

Company:-

The function of the company user is to add/edit exams in the test module.

Candidate:-

The function of the student is to update his/her profile and give various exams.

2.2 User Classes and Characteristics

The various users of this software are classified into two types:-

- Admin
- Company/University
- Students

2.3 Operating Environment

This software is internet based so it will run in any operating system with internet access through a web browser.

2.4 Design and Implementation Constraints

There are no legal policies to hinder this software growth.

Regarding Implementation, All the GUI's and Back-end stuff is doable. Database must be regularly backed up by the admin to maintain the contents in case of any Crash in Database ,Malware attacks ,Denial of Service attacks etc...

2.5 User Documentation

The software will include a user manual. The user manual will include product overview, complete configuration of the required software and hardware, technical details and contact information which will also include email address of software maintainers(myself here).

2.6 Assumptions and Dependencies

Proper working of this software is dependent on the internet connectivity of the users.

Assumptions and dependencies:

- It is assumed that the user has basic knowledge of the system as any action by the user is considered valid during an examination.*
- It is assumed that the data entered by the user while registering is true.*
- It is assumed that the candidate does not cheat during the exam as there are no supervisors around to monitor.*

3. External Interface Requirements

3.1 User Interfaces

•Welcome Page:

Various fields available on this screen will be:

*****Highlighted*****

- Register*
- Log-In*
- Log-In **Admin***

*****Less Highlighted*****

- Student Guide*
- Company/University Guide*

*****footer*****

- FAQ*
- Careers*
- Contribute*

•Registration Screen(NA to Admin):

Various fields available on this screen will be:

- Login Name*
- Email Id*
- Password*

- Confirm Password
- Mobile Number
- About me
- Login Screen:
 - Various Fields available on this screen are:
 - Login Name
 - Login Password
- Home Page for Admin:
 - Various Fields are:
 - Answer a Query
 - ReSet the DataBase(Warning Provided)
 - BackUp Details
 - Change Password
 - Log out
- Home Page for Company/University:
 - Various Fields are:
 - view list of students enrolled for your course
 - Open Question Bank
 - Set an Examination
 - Edit Bio
 - Change Password
 - Make a Query
 - Log out
- View List of Students enrolled (Company homepage option-1):
 - Various Fields are:
 - Table with Columns as Student-Id,Student-Name,Student-Roll-No and Date&Time of Enrolling
 - Go Back
- Open Question Bank(Company homepage option-2):
 - Various Fields are:
 - Edit Question Paper
 - View Question Paper
 - Delete Question Paper
 - Go Back
- Set an Examination(Company homepage option-3):
 - Edit Question Paper
 - View Question Paper
 - Delete Question Paper
 - Go Back
- Edit Bio(Company homepage option-4):
 - All Details of user are shown here with ability to change their Basic Details.

- Go Back
- Change Password(Company homepage option-5):
 - Enter New Password(and Confirmation also)
 - Go Back
- Home Page for Student:
 - Various Fields are:
 - view list of courses enrolled to give exams
 - Enroll for an examination
 - De register from a course
 - Start an Examination
 - Edit Bio
 - Change Password
 - Make a Query
 - Log out
- Start an Examination:
 - Select Course to start exam
 - Go back
- Start Exam:
 - **instructions are shown first***
 - **Questions are shown with options (as radio buttons)***
 - **At End of exam detailed report is shown and sent to both student and company via email***
- ***trivial options are skipped****

3.2 Hardware Interfaces

Tablets , Laptops and all kinds of PC's are supported. Mobiles are not supported.
Screen resolution of at least 800X600 is required for proper and complete viewing of screens.
Higher resolution is also welcome.

3.3 Software Interfaces

- Operating systems Supported -
 - All OS' are supported as this a web based application.*
- Browser support for MySQL Server Databases is needed.

3.4 Communications Interfaces

Communication Standard used would be mostly HTTPS.Our own Encryption and Decryption Module is not included as of now ..may be extended after a beta release.So as of now we depend upon the browser's encryption standards.

4. System Features

4.1 Registration

4.1.1 Description and Priority

Description – Registers a user after user enters his/her details

Priority – High as it is the starting node of any user.

4.1.2 Stimulus/Response Sequences

Stimulus - User will enter his name,email-id,mobile number ,bio ,address.

For Student – College Details are also enquired and stored.

For Company – About your Company question is asked and details are stored.

Response - After Entering all the details the response from the software is that it redirects the user to a Login Page.

4.1.3 Functional Requirements

- Software internally checks if the entered email-id is valid or not
- Software internally checks if the entered Password is valid or not
- Software Shall ensure the password entered twice is matching
- If the above checks fail then system asks user to enter the specific details again.
- The System shall auto-generate a email to Welcome the user to our software.

4.2 Sign-In

4.2.1 Description and Priority

Description – sign in page...prompts user to enter email-id and password.

Priority – High as it is the highest security feature any system can give to a user.

4.2.2 Stimulus/Response Sequences

Stimulus - User will enter his name,email-id and password. Sign in page looks same for all three roles(admin,student,company).

Response - After Entering the email id and password ,the response from the software is that it redirects the user to a Home Page.

4.2.3 Functional Requirements

- Software checks the database if the entered email-id is already registered or not
- Software checks the database if the entered Password is matching or not
- If the first check fails then system redirects the user to registration page.

- If the Second Check fails, then the system prompts the user to try to enter password for three times ...and if in all of three cases user enters wrong password then he/she is redirected to Welcome page.
- *Security Feature* – If email id is entered correctly and password check failed for three times a notification is sent via email to the user that there is a threat to his/her account.

4.3 Home-Page for student (Similar page for company and Admin)

4.3.1 Description and Priority

Description – homepage page that contains options.

Priority – Medium..

4.3.2 Stimulus/Response Sequences

Stimulus - User will choose a option from the display(choices are all enumerated in User Interface Module).

Response - After Entering the option system redirects to corresponding page.

4.3.3 Functional Requirements

- Any Invalid Choice is discarded automatically.

4.4 View List of students

4.4.1 Description and Priority

Description – list of students enrolled for a company.

Priority – low..

4.4.2 Stimulus/Response Sequences

Stimulus - User can select a student from the list.

Response - After Entering the option system redirects to details of the selected student.

4.4.3 Functional Requirements

- Any Invalid Choice is discarded automatically.

4.5 Exam Page for student

4.5.1 Description and Priority

Description – exam page in jsp format.

Priority – Medium..

4.5.2 Stimulus/Response Sequences

Stimulus- User will take the exam and choose the option for questions and clicks submit .

Response- After clicking the submit option system redirects student to a detailed report of his performance in the exam.

4.5.3 Functional Requirements

- Any Invalid option is discarded automatically.

4.6 Making of question bank

4.6.1 Description and Priority

Description – question paper management

Priority – Medium..

4.6.2 Stimulus/Response Sequences

Stimulus - User will enter the questions and related options and correct option along with the details of marking scheme.

Response - After clicking the submit option system saves the details of exam in database and redirects the company to view the question bank.

4.6.3 Functional Requirements

- Flexibility in increasing the number of options
- Correct option is ensured to be within in the option list.(else gives a error message here)
- In marking schema,Negative marking module ensures the entered weightage is negative and similar check for correct answers.

4.7 FAQ module

4.7.1 Description and Priority

Description – general queries are posted here.

Priority – Medium..

4.7.2 Stimulus/Response Sequences

Stimulus - User will be able to see a list of questions and answers of various queries.

Response - redirects back to welcome page.

4.7.3 Functional Requirements

- This module only read-only.

4.8 Manual Query

4.8.1 Description and Priority

Description -queries specific to a user are posted here.

Priority – Medium

4.8.2 Stimulus/Response Sequences

User can enter any query and he is shown a message that your query would be soon answered.

4.8.3 Functional Requirements

- The query is first checked within the FAQ module ..if found then user is directed to FAQ module.

4.9 FORGOT Password**4.3.1 Description and Priority**

Description - security feature ..user can answer a security question if he forgets password and then a link is sent via email for changing password.

Priority – high

4.8.2 Stimulus/Response Sequences

trivial

4.8.3 Functional Requirements

- The software checks if the answer is correct and if yes then only sends a change password link via email.

***Many other function modules are not listed that are thought to be more kind of trivial and less important and do not have a major impact on software life cycle. ***

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Some Performance requirements identified are listed below:

- The database shall be able to accommodate a minimum of 5,000 records of Users.
- The software shall support use of multiple users at a time.
- There are no other specific performance requirements that will affect development.

5.2 Safety Requirements

The database may get crashed at any certain time due to malware/cyber attacks or operating system failure. Therefore, it is required to take the database backup.

5.3 Security Requirements

- *The system shall not leave any cookies on the customer's computer containing the user's password ensuring that any third party system can't access it.*

- *The system shall not leave any cookies on the customer's computer containing any of the user's confidential information.*
- *The system's back-end servers shall only be accessible to admin.*

5.4 Software Quality Attributes

The Quality of the System is maintained in such a way so that it can be very user friendly to all the users.

The software quality attributes are assumed as under:

- Accurate and hence reliable.
- Secured.
- Fast.
- Compatible on all platforms(Platform Independent).
- Travis - Custom Integration ,Appveyor Checks ,Codecov's CodeCoverage are made as inbuilt checks for any code change.This ensures that the software is well maintained and thoroughly tested.

*As the software is integrated with above checks **ROBUSTNESS** also handled here.*

6. Other Requirements

-Emails should be sent with a latency of no greater than 12 hours from such an activity.