



Software Requirements Specification

ONLINE EXAM PORTAL

V1.1



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1. Introduction

This document explains in detail about a project to test various programming skills of an individual. This will also enable us to access level of understanding an individual has about Web application technologies. It also provides detailed instructions that should be followed while executing this assignment.

2. Scope

2.1 Problem Statement

Exams are conducted by various institutes and organisations regularly to test the knowledge of the individual. These exams give the individual the idea about how well they have understood the concepts. If a user wants to give the test, user must register first; only then user will be able to attempt the exam. The users who have registered previously can give the exams by logging in into the system.

The Online Examination system should allow the user to register and login into the system. The system should show all the different kind of tests or exams available in the system to the user and the user must be able to take any of the tests. The exams list should be maintained regularly by the system. The user should be allowed to take the test only once. After the test, the system must display the results.

The system should allow the creation of new users in the system. It should be accessible by two kinds of users 1.) The system administrator 2.) The users.

The administrator should be able to upload the question bank. The admin should also be able to load the tests and make changes accordingly. The admin should also manage the users.

2.2 Key Features

1. System should maintain all the data about the user and admin.
2. The system should also allow for the creation and validation of the users.
3. Admin must be able to load the question bank as well as the tests.
4. The user must be able to take tests.
5. The system should allow the user to register with the system and only the registered users should be able to take the tests.

3. Acronyms & Abbreviations

SRS – Software Requirements Specification

GUI – Graphical User Interface



4. Functional Requirements

An organization desires to introduce an online test/exam portal. A candidate should be able to register him/herself with the system, enrol for the selected examination and undertake the examination and view the final results.

1. A user should be able to self-register and activate his/her account with email verification.
2. Upon activated account, user should be able to login to the portal with selected credentials.
3. User would be authenticated based on username/password.
4. User would be authorized based on his/her role (i.e. Roles: user, administrator)
5. After login user should land up on home page with links to view his/her historical tests/results and new tests enrolment.
6. Any user should be allowed to appear for any test only once.
7. All tests would be time bound (using session management)
8. The questions should be selected randomly
9. During test remaining time should be shown on the window top-right corner
10. Answers to be auto saved upon each answer selected by user
11. At the end of exam (session) time, all answers have to be submitted and results i.e. final score be presented to the user

4.1 Persona's / Actors

Types of users

Persona/Actors	Description
User	Registered user who can login to take up the test
Administrator	Admin user who can manage the administration module to create tests, delete tests and be able generate reports

4.2 Epics

Epics of IFL System

Epic Id	Epic
EP-1	Administration Module
EP-2	User Management Module
EP-3	Exam Module



4.3 User Story

User Story ID: EP1-OEP1

User Story Title: Admin Login

As an Administrator, I can login into the Online Exam portal, so that I can perform Administrative actions

Business Rules

- Admin Login should be created by default
- Admin should be allowed to login to and access his profile page and features meant for Admin to manage

User Story ID: EP1-OEP2

User Story Title: Admin New Test Creation

As an Administrator, I can add tests (uploaded from a flat file along with the list of answer option and the correct answer), so that tests are available on the exam portal for users to register and take up tests

Business Rules

- Admin should be able create tests
- Admin should be able to view registered users for a test, and a consolidated report or total number of registered users for all tests available

User Story ID: EP1-OEP3

User Story Title: Admin Test Management

As an Administrator, I can Manage tests (delete old questions / tests), so that new / modified tests are available for users to register

Business Rules

- Admin should be able Manage tests
- Admin should be able delete old questions from a question bank / delete a complete test

User Story ID: EP1-OEP4

User Story Title: Admin User Management

As an Administrator, I can Manage Users so that reports of updated Users registered is available to view

Business Rules

- Admin should be able Manage users
- Admin should be able to view all the registered users

User Story ID: EP2-OEP1

User Story Title: User Registration

As a User, I can register on Online exam portal, so that I can view the available tests and register for them

Business Rules

- User should be able to register on the Online Exam portal
- User should activate the registration via email verification



- Validation for empty fields

User Story ID: EP2-OEP2

User Story Title: User Login

As a User, I can Login to Online exam portal, so that I can access my profile and view the available tests and register for them

Business Rules

- User should be able to login with valid credentials
- Forgot password option to allow users to reset their password with appropriate validation check via email or security question
- Validation for empty fields and wrong credentials

User Story ID: EP2-OEP3

User Story Title: User Profile Management

As a User, I can Login to Online exam portal, so that I can access my profile

Business Rules

- User should be able to login with valid credentials
- User should have access to his/her profile to be able to manage or edit his/her profile
- User should have access to available tests, previous history

User Story ID: EP2-OEP4

User Story Title: User Dashboard

As a User, I can Login to Online exam portal, so that I can view my dashboard

Business Rules

- User should be able to login with valid credentials
- User should have access to his/her dashboard
- User should have access to available tests, previous history of tests undertaken along with his/her results

User Story ID: EP2-OEP5

User Story Title: User Test enrollment

As a User, I can Login to Online exam portal, so that I can enroll to available tests

Business Rules

- User should be able to login with valid credentials
- User should be able to view all available tests
- User should be able to enroll to the list of available tests
- User should be able to enroll and appear only ONCE for any given test

User Story ID: EP3-OEP1

User Story Title: Taking a Test

As a User, I can start a test, so that I can answer all questions and complete the test

Business Rules



- User should have already enrolled for a test
- User should be able to start the test he/she has enrolled
- Answers should be auto saved on each selection of the test
- Results page should show all the questions with the right answers, answers submitted by the user and the final score displayed.

User Story ID: EP3-OEP2

User Story Title: Taking a Test Time

As a User, I can start a test, and the test should be timed

Business Rules

- The test should be time bound (using session management)
- During the test, a counter showing the remaining time left should be displayed on a window top-right corner
- Answers should be auto saved on each selection of the test

User Story ID: EP3-OEP2

User Story Title: Test Results

As a User, I can complete a test, and should be able to see my results

Business Rules

- Results page should have all the questions listed with the submitted answers
- Correct answers marked in Green, wrong answers marked in Red and the correct ones shown
- Final score to be displayed at the bottom of the results page
- Results to be saved for each user to be able to view from My History page.

5. System Details

5.1 Use Case Diagram

<To be filled by the students>

5.2 Class diagram

<to be filled by the students>

5.3 Sequence Diagram

<To be filled by the students>

5.4 E-R Diagram

<To be filled by the students>



6. Technical Details

6.1 Technology Details

- **Build Tool: Apache Maven latest version**
- JDK: 1.8 any latest update available
- **Spring Framework – Spring Microservices, Spring Boot**
- **Logging: Slf4j with Log4j**
- DB: Oracle / MySQL / MongoDB
- IDE: STS or Eclipse
- **Data Layer: JPA, Spring Transaction Management with Hibernate JPA Implementation.**
- UI Layer: React, Bootstrap
- Devops Tools : Git, Docker, Jenkins, Kafka

6.2 UI Screens

<To be filled by the students>