Trainee Selection System (TSS)

Software Requirement Specification

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1.0	07/03/2023	Md. Rahat Ibna Hossain	Sarwal Miral, Nani Gopal Barai	
1.1	07/26/2023	Md. Rahat Ibna Hossain	Sarwal Miral, Nani Gopal Barai	

Contents

1. Introduction

This section gives a scope description and overview of everything included in this SRS document. Also ,the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose

The purpose of this Software Requirements Specification is to outline the requirements for Trainee Selection System (TSS). It will illustrate the purpose and complete declaration for the development of the system. It will also explain system constraints, interface and interactions with other external applications. This is the version 1.0 of this system.

1.2 Scope

The scope of this system is listed below

- Providing a simplified way to select trainees.
- Providing an easy-to-use system for trainees , trainers and admins .
- Supplying a better and more hassle-free experience for candidates.

The Out of Scope of this product is listed below

- This Product will not provide any other services without trainee selection.
- This Product will not provide any kind of high-level performance.
- All tasks of evaluating the rounds will not be automated by this product.

1.3 Intended Stakeholder

1. Internal Stakeholders

- Admin
- Evaluator

2. External Stakeholders

- User
- Applicant
- Candidate
- Trainee

1.4 References

Reference	Location
Recommended practice for software requirements specifications (IEEE)	http://188.156.157.138/downloads/jpdf/jira-software-requirement-specification.pdf
Metrics for software requirements specification quality quantification	https://www.sciencedirect.com/science/article/abs/pii/S0045790621004043

1.5 Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
TSS	Trainee Selection System
RDBMS	Relational Database Management System
SMTP	Simple Mail Transfer Protocol

2. Overall Description

This section will give an overview of the whole trainee selection 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 that will use the system and what functionality is available for each type. At last, the constraints and assumptions for the system will be presented.

2.1 Overview

The Trainee Selection System (TSS) is a web-based application designed to streamline the selection process for trainee positions in BJIT Academy. The system allows applicants to register, apply for course circulars, and undergo various evaluation stages. It provides an efficient and automated way for administrators to manage applicant data, track candidates, assign evaluators, generate admit cards, conduct evaluations, filter out applicants, and select final trainees.It also allows the evaluators to upload

2.1.1 Product Perspective

The Trainee Selection System is a standalone application that will be developed as a web-based solution. It will serve as a centralized platform for managing the entire selection process, from applicant registration to final trainee selection. The system will interact with external services such as email servers for sending updates and will require integration with a database management system for data storage.

2.1.2 Product Functions

Applicant Registration: Applicants can register by providing their personal and educational information, along with uploading their photo and CV/resume.

Apply for Desired Circular: Registered applicants can browse and apply for job posts of their choice.

Approval of Applicants: Admins can review applicant information and mark them as "Approved for Interview" for specific job circulars.

Admit Card Generation: The system automatically generates unique admit cards with serial numbers, barcodes, and QR codes for identification.

Track Participants of the Exams: The system generates unique hidden codes for participants' answer sheets for identification and future reference.

Upload Written Marks of the Participants: Assigned evaluators can upload written marks for specific candidates using hidden code based on categories defined by admin.

Internal Mailing System: Integration with a mailing service to send status updates to applicants via email.

Dashboard and Notice Board: Applicants, candidates and trainees can view notices and notifications related to their application status.

Upload Other Marks and Prepare Results: Admins can upload marks for aptitude, technical and HR evaluation rounds.

Select Final Trainees List: Admins can view and select the final candidates based on their scores.

2.1.3 User Characteristics

Applicants: Individuals interested in trainee positions who possess the necessary qualifications and want to participate in the selection process.

Candidates: Those applicants who are shortlisted for the written exam by the admin.

Trainees: Those candidates who are the final-selected candidates for the training.

Evaluators: Admin will create evaluators for uploading written marks.

Admins: Personnel responsible for managing the selection process, including reviewing applications, conducting evaluations, creating evaluators, uploading other marks, sending emails, publishing results, and selecting trainees.

2.1.4 Constraints

- The system should be accessible through a web browser.
- The system should handle numerous applicants and efficiently manage their data.
- The system should ensure the privacy and security of applicant information.
- The system should be user-friendly and intuitive for both applicants, evaluators and administrators.

2.1.5 Assumptions and Dependencies

- The availability of an internet connection for users to access the system.
- The availability of external services, such as email servers, for sending notifications.
- The integration of a database management system for storing applicant and evaluation data.

2.2 Technical platform

2.2.1 Operating System

The Trainee Selection System will be compatible with multiple operating systems, including Android, Windows, macOS, Linux etc. As this will be a web application, it will work on most of the operating systems.

2.2.2 Development Environment

- The application will be developed using React and Spring.
- The frontend will be implemented using HTML, CSS, and JavaScript with React.
- Git will be used as a Version control system for source code management. We will be using GitHub.

2.2.3 Programming Languages:

The system will primarily use the following programming languages:

- Java for backend development.
- JavaScript for frontend development.

2.2.4 Frameworks and Libraries

Backend: Spring.

Frontend: React.

Additional libraries and tools: We will be using various libraries like Lombok, Spring Data JPA, Spring Security, Spring Email etc

Database: The system will utilize MySQL as a relational database management system (RDBMS).

2.2.5 Security

- Implement secure coding practices to prevent common vulnerabilities.
- Use strong encryption algorithms to protect sensitive data, such as passwords.
- Employ authentication and authorization mechanisms to ensure that only authorized users can access and modify data.
- Regularly update and patch the system to address any security vulnerabilities that may arise.

2.2.6 Scalability

- Employ caching mechanisms to improve response times and reduce the load on the server.
- Use efficient database indexing and query optimization techniques to handle large amounts of data effectively.

2.2.7 Responsive Design

- Follow responsive design principles to ensure that the system is compatible with various screen sizes and devices, including desktops, tablets, and mobile phones.
- Utilize CSS media queries and flexible layouts to adapt the system's interface to different screen resolutions.
- Optimize images and media files for faster loading times on mobile devices with limited bandwidth.

2.2.8 Accessibility

- Provide alternative text for images, proper labeling for form fields, and keyboard navigation support.
- Use semantic HTML markup to enhance screen reader compatibility and ensure a smooth user experience for individuals with visual impairments.

2.2.9 Testing and Maintenance

- Perform thorough testing, including unit testing, integration testing, and system testing, to identify and resolve any issues or bugs.
- Conduct regular security audits and penetration testing to ensure the system's robustness against potential attacks.
- Establish a maintenance plan to address bug fixes, system updates, and enhancements in a timely manner.
- Monitor system performance and log errors to identify and resolve issues promptly.

3. Functional Requirements

3.1 Overview

The Training Selection System (TSS) is designed to meet specific functional requirements by offering essential features and capabilities. These requirements consist of registration and login functionalities, applicant data management, candidate tracking, admit card generation, evaluation conduction, email communication, assigning evaluators, uploading marks, candidate filtering, applicant communication, final trainee selection etc. The TSS aims to deliver a smooth and user-friendly experience for administrators, enabling them to effectively manage selection processes with efficiency.

Serial No	Main Features	Description
1	User Login	A user should be able to log in to the system.
2	Applicant Registration	Applicants should be able to register themselves by providing their personal and educational information
3	Apply for Desired Courses	Registered applicants should be able to browse and apply for courses of their choice.
4	Approval of Applicants	Admins should be able to view applicant information and mark them as "Candidates" for a specific course. He should also be able to filter the applicants on the basis of gender, degree name, educational institute, CGPA, passing year.
5	Admit Card Generation	The system should automatically generate unique admit cards for candidates. Admit cards should contain a unique serial number. It may also contain a QR code for identification.
6	Track Participants of the Exams	The system should generate a unique code for each participant's answer sheet for identification, which will be hidden from the candidates. The system should store the generated codes for future reference.
7	Upload Written Marks of the Participants	Assigned evaluators should be able to upload written marks for candidates. Admin should be able to specify the number of question of written exams.
8	Mailing System	The system should integrate a mailing service to send emails to applicants regarding their application status. Emails should inform applicants about their selection for an interview, passing the written exam, or passing the technical viva.
9	Applicant Dashboard and Notice Board	Applicants should have access to a dashboard or notice board section where they can view notices and notifications related to their application status.
10	Upload Other Marks and Prepare Results	Admins should be able to upload marks for the technical viva, aptitude test and HR viva rounds. Admin should also be able to prepare results and select candidates.

11	Select Final Trainees List	Admins should have a dashboard or page where they can view the final candidates selected for a particular course. Candidates should be sorted according to their scores

3.2 Feature 1 User Login

A user should be able to log in to the system.

Actors: Applicants, Evaluators, Admin

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_001.1	A user should be able to log in to the system .	Applicants successfully complete the registration process by providing all required information.	None	TC_001.1
TSS_001.2	The login system should recognize them and based on their role they should be provided different functions.	Login system will recognize different user roles	None	TC_001.2

3.3 Feature 2 Applicant Registration

This feature enables applicants to register themselves by providing their personal and educational information.

Actors: Applicants

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_002.1	Applicants should be able to register themselves by providing their information.	Applicants successfully complete the registration process by providing all required information.	None	TC_002.1
TSS_002.2	Applicants should be able to upload their photo and CV/resume during the registration process.	Applicants can upload their photo and CV/resume files, which are stored securely in the system.	Maximum file size limit and allowed file formats to upload	TC_002.2
TSS_002.3	The applicants should be able to verify their email.	Applicants can validate their email.	None	TC_002.3
TSS_002.4	Applicants should get a validation email.	Applicants will get an email with a validation code.	None	TC_002.4
TSS_002.5	Applicants should be able to validate their account with a validation code.	Applicants will validate their account using a validation code.	None	TC_002.5

3.4 Feature 3 Apply for Desired Courses

Registered applicants can browse available courses and apply for the ones they are interested in.

Actors: Registered Applicants, Admins

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier

TSS_003.1	Registered applicants should be able to browse available courses.	Applicants can view a list of courses currently open for applications.	None	TC_003.1
TSS_003.2	Applicants should be able to submit applications for desired courses.	Applicants can successfully submit their application for a specific course.	none	TC_003.2
TSS_003.3	Admins should be able to create courses.	Admins can create courses	none	TC_003.3
TSS_003.4	Admins should be able to browse and update courses.	Admins can view and update the courses currently open.	None	TC_003.4

3.5 Feature 4 Approval of Applicants

Admins can review applicant information and mark them as "Approved for Interview" for specific job circulars.

Actors: Admins

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_004.1	Admins should be able to view applicant information for a specific course.	Admins can access the applicant details, including educational information.	None	TC_004.1
TSS_004.2	Admins should be able to select applicants for marking.	Admins can select applicants for marking for a particular course.	none	TC_004.2

TSS_004.3	Admins can filter the applicants based on their gender, degree name, educational institute, CGPA, passing year.	Admins can sort applicants based on gender, degree title, educational institution, CGPA, and the passing year.	none	TC_004.3
TSS_004.4	Admins should be able mark applicants as candidates for a specific course.	Admins can mark them as "Candidates" for a particular course.	none	TC_004.4
TSS_004.4	Admins should be able view all the candidates	Admins will view all the candidates.	none	TC_004.5

3.6 Feature 5 Admit Card Generation

The system automatically generates unique admit cards for selected applicants, containing identification details.

Actors: System

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_005.1	The system should automatically generate admit cards for candidates.	Admit cards are generated with unique serial numbers, and QR codes for identification purposes.	None	TC_005.1
TSS_005.2	Admit cards should contain personal identification details of the applicants, such as name and photograph.	Admit cards display the correct applicant name and photograph for easy identification.	Admit card layout and formatting constraints	TC_005.2

3.7 Feature 6 Track Participants of the Exams

The system generates a unique code for each participant's answer sheet for identification and future reference.

Actors: System

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_006.1	The system should generate a hidden code for each participant's answer sheet for identification.	Each participant is assigned a hidden code that is used to identify their answer sheet.	None	TC_006.1
TSS_006.2	The system should store the generated codes for future reference.	The generated codes are stored securely in the system for later retrieval and reference.	Storage capacity and data retention	TC_006.2

3.8 Feature 7 Upload Written Marks of the Participants

Assigned evaluators should be able to upload written marks for candidates. Admin should be able to specify the number of questions of written exams.

Actors: Evaluators, Admin

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_007.1	Assigned evaluators should be able to upload written marks for candidates.	Evaluators can successfully upload written marks for each candidate.	None	TC_007.1

TSS_007.2	Admin should be able to assign evaluators for specific answer sheets.	Admin will assign specific evaluators to specific answer sheets.	None	TC_007.2
TSS_007.3	Admin should be able to specify the number of questions of written exams.	Admin will specify the number of question of written exams	None	TC_007.3
TSS_007.4	Admin should be able to create evaluators. Evaluators will get email containing login credentials.	Admin will create evaluators. Evaluators will get email containing login credentials.	None	TC_007.3

3.9 Feature 8 Mailing System

Integration with a mailing service to send status update emails to applicants regarding their application status.

Actors: System, Applicants, Admins

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_008.1	The system should integrate a mailing service to send emails to applicants regarding their application status.	Emails are successfully sent to applicants, providing updates on their application status.	Integration with mailing service	TC_008.1

3.10 Feature 9 Applicant Dashboard and Notice Board

Applicants can access a dashboard or notice board section to view notifications and updates related to their application status.

Actors: Applicants

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_009.1	Applicants should have access to a dashboard or notice board section.	Applicants can log in and access a dashboard or notice board section displaying relevant notifications.	None	TC_009.1

3.11 Feature 10 Upload Other Marks and Prepare Results

Admins can upload marks for the technical viva and HR viva rounds and prepare results based on the evaluations.

Actors: Admins

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_010.1	Admins should be able to upload marks for the aptitude test, technical viva and HR viva rounds.	Admins can successfully upload marks for each candidate in the respective evaluation rounds.	None	TC_010.1

TSS_010.2	Admin should be able to define the number of questions for each round.	Admin can successfully define the number of question for each round.	None	TC_010.2

3.12 Feature 11 Select Final Trainees List

Admins should have a dashboard or page where they can view the final candidates selected for a particular course. Candidates should be sorted according to their scores

Actors: Admins

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_011.1	Admins should have a dashboard or page to view the final candidates for a particular course.	Admins can access a dashboard or page displaying the final selected candidates for each course.	None	TC_011.1
TSS_011.2	Admin should also have the ability to select the final candidates.	Admin can also select the final candidates and mark them as trainees.	None	TC_011.2
TSS_011.3	Admin should also have the ability to make candidates as trainees.	Admin can also mark candidates as trainees.	None	TC_011.3

4. User Interface

The User Interface (UI) of the Trainee Selection System (TSS) is designed with a focus on usability, intuitiveness, and efficient navigation. TSS provides a user-friendly interface that caters to both applicants and administrators, ensuring a seamless experience throughout the trainee selection process.

Requirements

UI No.	UI Name	Related Function Req ID	Description	Test case Identifier
TSS_101	Login Form	TSS_001.1	UI for users to enter their login credentials	TC_101
TSS_102	Registration Form	TSS_002.1	UI for applicants to enter their registration details	TC_102
TSS_103	Available Courses	TSS_003.1	UI displaying available courses for applicants	TC_103
TSS_104	Applicant Profile	TSS_004.1	UI to view applicant information for approval	TC_104
TSS_105	Admit Card Generation	TSS_005.1	UI to generate admit cards for selected applicants	TC_105
TSS_106	Participant Tracking	TSS_006.1	UI to track participants and their unique codes	TC_106
TSS_107	Written Marks Upload Interface	TSS_007.1	UI for evaluators to upload written marks for participants	TC_107
TSS_108	Email Notifications	TSS_008.1	UI to send email notifications to applicants	TC_108

TSS_109	Applicant Dashboard	TSS_009.1	UI for applicants to view notices and updates	TC_109
TSS_110	Other Marks Upload Interface	TSS_010.1	UI for admins to upload marks and prepare results	TC_110
TSS_111	Final Selection List	TSS_011.1	UI to view final selected candidates for a course.	TC_111

5. Non-Functional Requirements

The Trainee Selection System (TSS) adheres to various non-functional requirements to ensure optimal performance, usability, reliability, and compliance. TSS is designed to deliver fast response times.

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_201	Performance: The system should have fast response times and handle numerous concurrent users without significant delays.	The system should respond to user interactions within 2 seconds under normal load conditions.	The system should be able to handle a minimum of 500 concurrent users.	TC_201
TSS_202	Security: The system should ensure the confidentiality, integrity, and availability of applicant data and protect against vulnerabilities.	User data should be encrypted and stored securely. The system should implement proper access controls and protect against security threats.	The system should comply with relevant data protection and privacy regulations.	TC_202
TSS_203	Usability: The system should be intuitive and easy to use for both applicants and administrators.	The system should have a user-friendly interface and provide clear instructions.	None	TC_203
TSS_204	Reliability: The system should be reliable and available for use during the designated operational hours.	The system should have an uptime of at least 99% during operational hours.	Regular system maintenance and updates may require scheduled downtime.	TC_204

TSS_205	Scalability: The system should be able to accommodate future growth and handle an increasing number of users and data.	The system should be able to handle a 20% increase in user load and data volume without significant degradation in performance.	Scaling the system may require additional hardware resources and configuration changes.	TC_205
TSS_206	Compatibility: The system should be compatible with various web browsers and operating systems.	The system should function correctly on the latest versions of commonly used web browsers (e.g., Chrome, Firefox, Safari)	The system may have limited support for older or less common web browsers and operating systems.	TC_206

6. Performance Requirements

The performance characteristics of the Trainee Selection System (TSS) are critical to ensure a seamless and efficient user experience. TSS is designed to deliver fast response times for user transactions.

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_301	Response Time: The system should provide fast response times for user transactions.	The average response time for a transaction should be less than 2 seconds.	Response times are measured under normal load conditions.	TC_301
TSS_302	Throughput: The system should support a high number of transactions per second.	The system should be able to handle a minimum throughput of 100 transactions per second.	Throughput is measured under peak load conditions.	TC_302
TSS_303	Capacity: The system should have sufficient capacity to accommodate numerous applicants and courses.	The system should be able to handle numerous applicants and courses simultaneously.	The actual capacity may depend on the underlying hardware and infrastructure.	TC_303
TSS_304	Degradation Modes: The system should gracefully handle degradation in performance or availability under high load conditions.	When the system experiences high load, it should prioritize essential functionalities and maintain acceptable response times for critical use cases.	A clear definition of acceptable degradation modes should be established based on critical use cases and system priorities.	TC_304
TSS_305	Resource Utilization: The system should effectively utilize system resources such as memory, disk, and network communications.	The system should optimize resource utilization to ensure efficient performance and avoid resource bottlenecks.	Resource utilization may vary based on the underlying hardware and system configuration.	TC_305

7. Safety Requirements

The safety of the Trainee Selection System (TSS) is of paramount importance to protect against accidental or malicious access, use, modification, destruction, or disclosure of data. TSS incorporates various safety measures to ensure the integrity, confidentiality, and availability of sensitive information.

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_401	Data Privacy: The system should ensure the confidentiality and protection of personal and sensitive applicant information.	The system should employ encryption and access controls to safeguard applicant data.	The system should comply with relevant data protection laws and regulations.	TC_401
TSS_402	User Authentication: The system should have secure user authentication mechanisms.	Users should be required to provide valid credentials to access the system.	The system should implement strong password policies.	TC_402
TSS_403	System Availability: The system should be highly available to ensure uninterrupted access for users during the trainee selection process.	The system should have an uptime of at least 99% during operational hours	The system may require scheduled maintenance or occasional downtime for updates.	TC_403
TSS_404	Error Handling: The system should handle errors gracefully and provide clear error messages to users in case of failures or exceptions.	Error messages should be informative, user-friendly, and guide users on resolving the issue.	The system should log and track errors for debugging and analysis purposes.	TC_404
TSS_405	Compliance: The system should comply with relevant legal and regulatory requirements, including those related to equal opportunity.	The system should adhere to equal opportunity laws and regulations in the trainee selection process.	The system should be regularly audited to ensure compliance with applicable laws and regulations.	TC_405

8. Security Requirements

The security of the Trainee Selection System (TSS) is of paramount importance to protect against accidental or malicious access, use, modification, destruction, or disclosure of sensitive data. TSS incorporates robust security measures to ensure the confidentiality, integrity, and availability of the system

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_501	Access Control: The system should enforce appropriate access controls to protect against unauthorized access to sensitive data.	Users should only have access to the data and functionality required for their roles.	Access controls should be implemented at both the user and module levels, ensuring that only authorized users can perform specific functions.	TC_501
TSS_502	Encryption: The system should utilize secure cryptographic techniques to protect the confidentiality and integrity of data in transit and at rest.	Data transmitted over the network should be encrypted using industry-standard encryption protocols. Data stored in the system should be encrypted using strong encryption algorithms.	The system should comply with relevant encryption standards and guidelines.	TC_502
TSS_503	Audit Logging: The system should maintain detailed audit logs to track and monitor user activities and detect any suspicious behavior.	The system should log critical events, such as login attempts, data modifications, and system access.	Audit logs should capture relevant information, including the user, timestamp, and action performed, and should be accessible only to admins.	TC_503

TSS_504	Data Integrity: The system should ensure the integrity of critical variables and data by implementing measures such as checksums or hashing.	Critical variables should have integrity checks in place to detect any unauthorized modifications.	Data integrity checks should be implemented for critical data to prevent unauthorized tampering or corruption.	TC_504
TSS_505	Secure Communication: The system should enforce secure communication protocols to protect sensitive data during transmission.	Communications between the system and external entities should be encrypted using secure protocols.	The system should comply with industry best practices for secure communication protocols and ensure that sensitive data is protected during transmission.	TC_505

9. Design Constraints

Software Language Constraint: The system should be developed using Java programming language. This constraint is mandated to align with the organization's existing software ecosystem and to ensure compatibility and maintainability.

Development Tool Constraint: The development of TSS should be done using specific development tools, such as Intellij IDEA and Gradle build tools. These tools are mandated to standardize the development process and promote collaboration among developers.

Architecture Constraint: TSS should follow a three-tier architecture, consisting of a presentation layer, application layer, and data layer. This architectural constraint is mandated to ensure modularity, scalability, and ease of maintenance.

Design Pattern Constraint: TSS should incorporate the Model-View-Controller (MVC) design pattern to separate concerns and enhance code reusability. This constraint is mandated to improve the overall software design and facilitate future enhancements.

Purchased Component Constraint: TSS may utilize a licensed email service provider, for email notifications. This constraint is mandated to leverage the expertise and reliability of established email service providers.

Class Library Constraint: TSS should utilize a specific logging library, such as Log4j, for capturing and managing system logs. This constraint ensures standardized logging practices and facilitates error debugging and system monitoring.

10. Software Quality Attributes

Software Quality Attributes are crucial aspects of the Trainee Selection System (TSS) that contribute to its overall performance, reliability, usability, and security. Reliability is a key attribute, ensuring that the system remains available and accessible during designated operational hours with a high uptime percentage.

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_601	Reliability: The system should be reliable and available for use during the designated operational hours.	The system should have an uptime of at least 99% during operational hours.	Regular system maintenance and updates may require scheduled downtime.	TC_601
TSS_602	Usability: The system should be intuitive and easy to use for both applicants and administrators.	The system should have a user-friendly interface and provide clear instructions.	None	TC_602
TSS_603	Performance: The system should have fast response times and handle numerous concurrent users.	The system should respond to user interactions within 2 seconds under normal load conditions.	None	TC_603
TSS_604	Scalability: The system should be able to accommodate future growth and handle an increasing user load.	The system should be able to handle a 20% increase in user load without significant degradation in performance.	Scaling the system may require additional hardware resources and configuration changes.	TC_604

TSS_605	Security: The system should ensure the confidentiality, integrity, and availability of applicant data.	User data should be encrypted and stored securely. The system should implement proper access controls and protect against security threats.	The system should comply with relevant data protection and privacy regulations	TC_605
TSS_606	Maintainability: The system should be easy to maintain, allowing for timely bug fixes and updates.	The system's code should follow coding best practices and be well-documented.	The system should be designed with modularity and maintainability in mind, making it easy to add new features or fix issues.	TC_606

11. Other Requirements

Other Requirements of the Trainee Selection System (TSS) encompass additional aspects that contribute to the system's effectiveness, usability, and support. Documentation plays a crucial role, requiring comprehensive and up-to-date materials to assist both users and administrators.

Requirements

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_701	Documentation: The system should have comprehensive and up-to-date documentation for users and admins.	The system documentation should include user manuals, installation guides, and technical specifications.	The documentation should be written in a clear and understandable manner.	TC_701
TSS_702	Training and Support: The system should have training materials for using this website and provide technical support to users.	Training materials should be provided to users to facilitate understanding and usage of the system. Technical support should be available to address user queries and issues.	The training and support resources should be regularly updated to reflect system changes and enhancements.	TC_702
TSS_703	Data Backup and Recovery: The system should have mechanisms in place for regular data backups and recovery.	Data backups should be performed regularly to prevent data loss. The system should have procedures for data recovery in case of system failures or disasters.	The backup and recovery mechanisms should be tested periodically to ensure their effectiveness and reliability.	TC_703

TSS_704	System Compatibility: The system should be compatible with different devices and screen resolutions.	The system should be accessible and usable across various devices, such as desktops, laptops, and mobile devices. It should support different screen resolutions and aspect ratios.	The system may have specific limitations based on the device capabilities, such as limited functionality on mobile devices compared to desktop versions.	TC_704
TSS_705	Error Reporting: The system should provide a mechanism for users to report errors and issues encountered.	User data should be encrypted and stored securely. The system should implement proper access controls and protect against security threats.	The system should comply with relevant data protection and privacy regulations	TC_705
TSS_706	Maintainability: The system should be easy to maintain, allowing for timely bug fixes and updates.	Users should be able to report errors through a dedicated error reporting feature or contact the technical support team.	The system should have a process in place to track and address reported errors and provide timely resolutions or workarounds.	TC_706