Trainee Selection System	Software Requirement Specification
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Revision History

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Contents

1. Introduction

The Trainee Selection System (TSS) is a comprehensive portal designed to streamline the process of selecting trainees for job vacancies at BJIT. The system provides a user-friendly interface for applicants to register, apply for desired job circulars, and track their application status. It also offers powerful administrative tools for reviewing applicant information, generating admit cards, tracking participants during exams, uploading marks, communicating via an internal mailing system, and ultimately selecting the final trainees.

1.1 Purpose

The purpose of the Trainee Selection System (TSS) is to automate and optimize the trainee selection process at BJIT. By leveraging this system, BJIT aims to enhance efficiency, transparency, and fairness in selecting suitable candidates for various job circulars. The system simplifies the application and evaluation processes, improves communication between applicants and administrators, and provides a centralized platform for managing the entire selection process.

1.2 Scope

The scope of the Trainee Selection System (TSS) encompasses a comprehensive set of features and functionalities designed to streamline the trainee selection process at BJIT. The system facilitates applicant registration, allowing individuals to provide their personal information, educational background, and relevant documents. Registered applicants can then browse and apply for desired job circulars through a user-friendly dashboard. The system empowers admin panel members to review applicant information and filter candidates based on specific criteria for approval. Admit cards with unique identification features are automatically generated for selected applicants. During exams, a hidden code is assigned to each participant's answer sheet for identification, and marks can be uploaded by assigned evaluators based on predefined categories. An internal mailing system ensures effective communication with applicants regarding their application status. An applicant dashboard and notice board provide applicants with updates and notifications throughout the selection process. BJIT admins can upload marks, prepare results, and ultimately select the final trainees based on a rank list generated by the system. Overall, the TSS aims to enhance efficiency,

transparency, and fairness in the trainee selection process, benefiting both applicants and administrators involved.

1.3 Intended Stakeholder

The BJIT Academy is the main Stack Holder of the project.

1.4 References

Reference	Location
Requirement Specification	

1.5 Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
APP	Abbreviation of Application
API	Application Programming Interface
SRS	Software Requirement Specification
TSS	Trainee Selection System

2. Overall Description

The Trainee Selection System (TSS) is a comprehensive and efficient platform designed to streamline the process of selecting trainees for job vacancies at BJIT. It provides a user-friendly interface for applicants to register, apply for desired job circulars, and track their application status. The system offers powerful administrative tools for reviewing applicant information, generating unique admit cards, tracking participants during exams, uploading marks, and communicating through an internal mailing system. It also facilitates result preparation and the selection of final trainees based on a rank list. By leveraging the TSS, BJIT aims to enhance the efficiency, transparency, and fairness of the trainee selection process. The system simplifies administrative tasks, improves communication between applicants and administrators, and provides a centralized platform for managing the entire selection process. With its comprehensive features and functionalities, the TSS optimizes the trainee selection process, making it easier for both applicants and administrators to navigate and ensuring the selection of the most suitable candidates for job vacancies at BJIT.

2.1 Overview

This area of the SRS is all about the overall influences on the product and its specifications. This section does not mention particular criteria. Instead, it offers a context for those criteria, which are stated in full in section 3, and makes them simpler to grasp. Include stuff like as:

1. Product Perspective: The Trainee Selection System (TSS) serves as a centralized platform that automates and streamlines the trainee selection process. It provides an intuitive interface for applicants to register, apply for job circulars, and track their application status. For administrators, the system offers powerful tools for applicant evaluation, admit card generation, result preparation, and communication. The TSS improves efficiency, transparency, and communication, enhancing the overall selection experience for both applicants and administrators.

2. Product Functions: The Trainee Selection System should have the following features:

- Applicant can register by providing personal details, educational information and contact details.
- Applicants can browse and apply for desired circulars
- Admin can review applicant information and mark as "Approve" so that selected applicant can sit for written test.
- Automatically generate unique admit cards with identification features.
- Evaluators upload marks for candidates based on categories.
- Send emails to applicants regarding their application status.
- Provide a dashboard or notice board for applicants to view updates.
- Admin upload marks for technical and HR rounds and prepare results
- Admin prepare a rank list based on candidate scores and finally selects the top 20 for training.

3. User Characteristics:

The Trainee Selection System (TSS) caters to a range of user characteristics. Applicants, the primary users, should be comfortable with online registration, document uploads, and tracking their application status. Admin panel members require proficiency in reviewing applicant information, filtering data, and marking candidates for approval. Evaluators should possess the ability to assess candidates based on predefined categories and upload marks. BJIT admins, overseeing the entire process, need experience in managing applicant data, generating reports, and making final selections. The TSS accommodates these diverse user characteristics to ensure a seamless and efficient trainee selection process.

4. Constraints: The following constraints may impact the development of the Trainee Selection System:
    I. Time Constraint: Develop and implement the system within specified deadlines for each phase.
    II. Scalability Constraint: Ensure the system can handle a growing number of applicants, job circulars, user load, and data volume.

III. Compatibility Constraint: Make the system compatible with various platforms, browsers, and devices, delivering a consistent user experience.

IV. User Accessibility Constraint: Design the system to be user-friendly and accessible for applicants, admins, and evaluators, considering diverse user abilities.

5. Assumptions and Dependencies: The following assumptions and dependencies are made while developing the Trainee Selection System:

I. Applicants have reliable internet access and necessary technical skills.The app will require access to third-party API's for live score updates.

II. Adequate server infrastructure and network bandwidth are available.

III. The development team will have the necessary technical expertise and resources to complete the project.

IV. Dependency on third-party APIs for email integration and document uploads.

V. Availability of qualified evaluators within the specified timeframe.

VI. Compliance with data protection and privacy regulations.

6. The above-mentioned points provide an overview of the project's perspective, functions, user characteristics, constraints, assumptions, and dependencies. A comprehensive and well-defined project scope statement can ensure that the project is completed within the given time and resource constraints, and that all stakeholders are aligned with the project's goals and expectations.

2.2 Technical platform

The technical platform for the Trainee Selection System may include the following components:

1) Operating System: The Spring Boot web application can run on any operating system that supports Java, including Windows, macOS, and Linux distributions.

2) Development Environment: A suitable integrated development environment (IDE) such as Intellij or Eclipse will be required to develop and debug the web app.
3) Programming Languages: Java will be used as the primary programming language for the creating the web app
4) Frameworks and Libraries: React Js will be used for the front end development.
5) Database: MySql database will be used to store and retrieve data for the trainee selection web app, such as trainee registration, approve applicants for written test.
6) Security: The app will need to implement appropriate security measures such as encryption, authentication, and authorization to protect sensitive user data and ensure privacy.
7) User Experience: The web app will be designed with a focus on user experience, including intuitive navigation, clear and concise user interface, and responsive performance.
8) Mobile Device Compatibility: The web app will need to be tested and optimized for different types of mobile devices, including smartphones and tablets, to ensure compatibility and optimal performance.

These are some of the key technical components that may be part of the technical platform for the Trainee Selection System web app. The technical platform should be chosen and implemented in a way that ensures the app meets the needs and requirements of the end-users and stakeholders.

3. Functional Requirements

The functional requirements of the Trainee Selection System web app are the characteristics and capabilities that the app must provide in order to satisfy the expectations of its users. Among the essential functional need are described below.

3.1 Overview

This section sums up in the below table the main functionalities or services provided by the sub-system, which will be detailed in the following subsections. A use case diagram could be also used to list the main functionalities.

Serial No	Main Features	Description
1	Login/Registration	Applicants can register by providing personal information, contact details, educational background, and upload a photo and CV/resume.
2	Apply for the Desired Circular	Registered applicants can browse and apply for job circulars through a panel/dashboard.
3	Approval of Applicants	Admins can view and sort applicant data based on various criteria and mark applicants as "APPROVED FOR INTERVIEW" for specific job circulars.
4	Admit Card Generation	The system automatically generates unique admit cards with serial numbers, barcodes, and QR codes for selected applicants.
5	Track Participants of the Exams	The system generates and stores unique codes on participants' answer sheets for identification during written exams.
6	Upload Marks of the Participants	Evaluators can upload marks for each participant based on different categories.
7	Internal Mailing System	Integration of a mailing service to send status notifications to applicants, informing them about their application status or exam results
8	Applicant Dashboard, Notice Board	Applicants can access a dashboard or notice board section to view notifications and updates regarding their application status and exam results.

9	Upload Marks and Prepare Results	Admins can upload marks for technical viva and HR viva rounds, facilitating the preparation of results.
10	Select Final Trainees List	Admins can access a dashboard/page to view the final selected candidates for a specific job circular, sorted by scores or ranking.

3.1.1. Login/ Registration

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_001	A applicant can create a new account by providing basic information such as their First Name, Last Name, email address, and password.	Essential	Server might not be available	TC_001
TSS_002	Once a applicant has created an account, they can log in using their email address and password.	Essential	Server might not be available	TC_002

TSS_003	If a user forget their password then they should be able to recover the password	Essential	User may not be registered.	TC_003
TSS_004	Users can log out of their account at any time by clicking the logout button in the app's menu.	Essential	User may not be logged in.	TC_004

3.1.2. Apply for the Desired Circular

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_005	Applicant can view job circular.	Essential	None	TC_005
TSS_006	Applicants can apply to their desired job circular.	Essential	None	TC_006

3.1.3. Approval of Applicants

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_007	Admin can view all the applicants information	Essential	None	TC_007
TSS_008	Admin can sort applicant data by particular job, gender, degree name etc	Essential	None	TC_008
TSS_009	Admin can mark applicant as APPROVED for interview	Essential	None	TC_009

3.1.4. Admit Card Generation

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_010	Automated admit card generate for the selected applicant..	Essential	May require packages.	TC_010

TSS_011	Admit card will have unique serial number for individual identification.	Essential	None	TC_011

3.1.5. Track Participants of the Exam

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_012	BJIT executives will put a unique code for each participants answer sheet for identification	Essential	None	TC_012
TSS_013	Trainee Selection System web app will store the unique code for future references	Essential	None	TC_013

3.1.6. Upload Marks of the Participants

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_014	Admin will assign evaluators for marking and they will have the option to upload candidate mark.	Essential	None	TC_014

3.1.7. Internal Mailing System

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_015	Integrate a mailing service within the portal for sending necessary emails to applicants.	Essential	None	TC_015

TSS_016	Inform applicants about their application status, interview selection, written exam results, and technical viva results.	Essential	None	TC_016

3.1.8. Applicant Dashboard and Notice Board:

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_017	There will be an applicant dashboard or notice board section for applicants to view notifications related to their application status	Essential	None	TC_017
TSS_018	Display updates such as interview selection, written exam results, and technical viva results.	Essential	None	TC_018

3.1.9. Upload Marks and Prepare Results

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_019	Enable BJIT admins to upload marks for technical viva and HR viva rounds.	Essential	None	TC_019
TSS_020	Facilitate the preparation of results based on the uploaded marks.	Essential	None	TC_020

3.1.10. Final Trainee Selection

Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_021	Provide a dashboard or page for BJIT admins to view and select the final candidates for each job circular.	Essential	None	TC_021
TSS_022	Present candidates in a rank list format based on their scores.	Essential	None	TC_022

4. User Interface

UI No.	UI Name	Related Function Requirement ID	Description	Test case Identifier
TSS_UI_023	Registration Form		Allows applicants to register by providing their personal information, contact details, educational background, and uploading a photo and CV/resume	TC_023
TSS_UI_024	Job Circular Panel/Dashboard		Displays a list of available job circulars that applicants can view and apply for.	TC_024
TSS_UI_025	Applicant Dashboard		Provides applicants with a personalized dashboard to track their application status and view notices/notifications.	TC_025

TSS_UI_026	Admin Panel		Enables administrators to view and manage applicant data, sort applicants based on criteria such as job post, gender, degree name, etc., and mark applicants as approved for interview.	TC_026
TSS_UI_027	Admit Card Generation		Automatically generates system-generated admit cards for selected applicants, including unique serial numbers, barcodes, and QR codes for identification.	TC_027
TSS_UI_028	Internal Mailing System		Integrates a mailing service to send necessary emails to applicants, informing them of their application status (e.g., selected for interview, passed written exam, passed technical viva, etc.).	TC_028

TSS_UI_029	Results Preparation		Enables administrators to upload marks for the technical viva and HR viva rounds, and prepares the final results based on the scores.	TC_029
TSS_UI_030	Final Trainees List		Displays a dashboard or page where administrators can view and select the final candidates for a particular job circular, sorted by their scores as a rank list.	TC_030

5. Non-Functional Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_031	The app should have a fast and responsive user interface with minimal latency. The average response time should not exceed 2 seconds, and the maximum response time should not exceed 5 seconds.	Essential	May require optimization of the code and the use of efficient algorithms to ensure good performance	TC_031
TSS_032	The app should use appropriate encryption techniques to protect user data. It should also have a secure login system to prevent unauthorized access.	Essential	May require regular security audits and updates to ensure protection against emerging threats	TC_032

TSS_033	The user interface should be intuitive, easy to navigate, and visually appealing, ensuring a positive user experience.	Essential	May require regular user testing and feedback to improve the user experience	TC_033
TSS_034	The system should be compatible with multiple devices and browsers to ensure accessibility for applicants from various platforms	Essential	May require regular testing on different devices and platforms to ensure compatibility	TC_034

5.1 Performance Requirements

1. Response Time:
   a) A transaction's average response time should be less than 2 seconds.
   b) A transaction's maximum response time should not exceed 5 seconds.
2. Throughput:
   a) The application must be able to process at least 50 transactions per second.
3. Capacity:
   a) The application must support a minimum of 10,000 concurrent users.
4. Capital Utilization:
   a) Memory usage should not above 250 MB.
   b) Optimizing disk utilization will reduce storage use

c) The use of communications should be improved to reduce data consumption

d) The application should be built to reduce battery use and prevent excessive heat production.

5. Reliability:

a) The app should be available at least 99.5% of the time.

b) The application should feature error-handling capabilities to maintain stability and reduce accidents.

6. Security:

Encryption and secure authentication measures should be used to safeguard the application against unwanted access and data breaches.

7. Scalability:

a) The application should be able to accommodate an increase in the number of users and transactions without seeing a noticeable decrease in performance.

b) Future additions and functions should be readily included into the application's design.

8. Compatibility:

The Trainee Selection System should be compatible with popular web browsers and various devices to ensure seamless access and usability for all users

9. Support:

a) The application should offer enough user assistance, including documentation, frequently asked questions, and a method for reporting problems and difficulties.

b) The application should be regularly reviewed and updated in order to maintain optimum performance and handle any problems that may occur

10. Usability:

a) The application's UI should be straightforward and user-friendly, with easy navigation and accessible functions.

b) With adequate support for screen readers, high-contrast mode, and other accessibility features, the application should be accessible to people with impairments.

11. Reporting and Analytic:

a) The application should give information and insights into use trends, user behavior, and performance indicators.

b) The application should provide real-time analytic and reporting features to aid in identifying performance problems and enhancing the user experience.

12. Integration:

a) To give users with a full and engaging experience, the app should interact with third-party services and platforms, such as social networking and advertising.

These are a few performance requirements for Trainee Selection System application. Depending on the type and breadth of the application, as well as the intended audience, the particular requirements may vary.

5.2 Safety Requirements

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

TSS_035	The Trainee Selection System must prioritize the protection of users, safeguarding them from any potential hazards or adverse effects, both physically and psychologically.	Essential	May require regular user testing and feedback to ensure safety	TC_035
TSS_036	The app should safeguard user data, including personal data and login credentials, in a secure and private manner.	Essential	May require regular security audits and updates to ensure data safety	TC_036
CricJass_037	The app should not cause damage to the device or equipment being used to access the app.	Essential	May require regular testing and compatibility checks to ensure equipment safety	TC_037

5.3 Security Requirements

To prevent unauthorized or malicious access, use, modification, destruction, or disclosure of software, the following security measures may be implemented:

1. Utilize Encryption: Encrypt sensitive data such as user passwords, financial transactions, and other secret information to prevent unwanted access. A powerful encryption method, such as AES or RSA, should be used by the application to guarantee data security.

2. Access Control: The application should have an authentication method to guarantee that only authorized users may access sensitive data. This may consist of a login procedure, password rules, and multi-factor authentication.

3. Role-based Access:Access should be controlled based on the user's role and permissions. Modules should be allocated functions depending on the user's role and permissions. This will aid in preventing unauthorized access to and alteration of sensitive data.

4. Communications between the app and the server should be encrypted using secure protocols such as SSL/TLS for network security. In order to prevent unwanted access to critical data, the app should additionally limit communications between certain software components.

5. Integrity of Data: The application should verify the integrity of crucial variables to guarantee that data is not changed or damaged during transmission. Algorithms may be used to verify the integrity of data.

6. Regular Security Updates: The application should be routinely updated to patch any security flaws and maintain the safety of sensitive data.

These are some of the precautions that may be taken to prevent unauthorized or malicious access, use, modification, destruction, or disclosure of software. Depending on the type and scope of the app and the intended audience, the particular security needs may vary.

REQUIREMENT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_038	The app should use appropriate encryption techniques to protect user data, such as passwords and personal information.	Essential	May require regular security audits and updates to ensure data encryption remains secure	TC_038
TSS_039	The app should have a secure login system to prevent unauthorized access to user accounts.	Essential	May require regular security audits and updates to ensure the login system remains secure	TC_039
TSS_040	The app should check the integrity of critical data to ensure that it has not been modified or tampered with.	Essential	May require regular security audits and updates to ensure data integrity	TC_040
TSS_041	The app should have mechanisms in place to detect and respond to potential security threats, such as malware or unauthorized access attempts.	Essential	May require regular security audits and updates to ensure threat detection remains effective	TC_041

6. Design Constraints

The Trainee Selection System should adhere to the following design constraints:

1. The system must comply with all relevant laws, regulations, and policies related to data privacy, security, and equal opportunity employment.
2. The architectural constraints for the app may include the use of a Model-View-Controller (MVC) or Model-View-Presenter (MVP) architecture, which provides a clear separation between the data, user interface, and business logic of the app. This can help ensure maintainable and scalable code.
3. The system should be designed to accommodate a growing number of applicants, job circulars, and evaluators without compromising performance or user experience.
4. The system should have a user-friendly interface and intuitive navigation to ensure ease of use for applicants, admins, and evaluators with varying levels of technical expertise.
5. The system should implement robust security measures to protect applicant data, prevent unauthorized access, and maintain the confidentiality and integrity of information throughout the selection process.
6. Platform Compatibility: The app should be compatible with the latest version of the Android operating system and should support a range of device types and screen sizes.
7. The app should provide an engaging and intuitive user experience, with clear navigation and accessible features. The design should be visually appealing and consistent throughout the application.
8. The app should have a fast and responsive user interface, with minimal lag or delay. The app should also have optimized performance, with efficient use of memory, processing power, and network resources.
9. The app should have efficient data management, with the ability to handle large amounts of data and provide fast access to critical information. The app should also have the ability to store and retrieve data offline, where necessary.

10. The app should be scalable to accommodate a growing user base and increased usage. The design should take into account the possibility of adding new features and functionality in the future.
11. The app should meet the security requirements outlined in the previous answer, including the protection of sensitive information and the prevention of unauthorized access.

These are some of the design constraints for the Trainee Selection System. The specific constraints may vary based on the nature and scope of the app and the target audience. The design should take into account these constraints to ensure a high-quality and secure app that meets the needs of users.

7. Software Quality Attributes

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
TSS_042	The app should be easy to use and intuitive for users, with a clear and straightforward interface.	Essential	May require regular user testing and feedback to refine usability	TC_042
TSS_043	The app should have a fast and responsive interface, with minimal lag or delay in interactions.	Essential	May require regular performance testing and optimization to ensure high performance	TC_043

TSS_044	The app should be able to handle an increasing number of users and transactions without degradation in performance.	Essential	May require regular testing and scalability improvements to ensure scalability	TC_044
TSS_045	The app should have high availability and minimal downtime, with the ability to recover from failures and errors.	Essential	May require regular testing and reliability improvements to ensure reliability	TC_045