



Evaluation Management System	Software Requirement Specification
<p data-bbox="261 1161 667 1192">Version ID Date: 03/07/2023</p> <p data-bbox="261 1230 583 1262">Document ID: SWD/01</p> <p data-bbox="261 1299 498 1331">Version ID: 1.0</p>	

**Revision History**

<b>Doc. Ver.</b>	<b>Date</b>	<b>Author</b>	<b>Reviewer</b>	<b>Description of Revision</b>
1.0	03/07/2023	Akash	Sarwar Miral, Nani Gopa Barai	

# Contents

<b>1. Introduction .....</b>	<b>4</b>
1.1 Purpose .....	4
1.2 Scope .....	4
1.3 Intended Stakeholder .....	4
1.4 References .....	5
1.5 Definitions, Acronyms, and Abbreviations .....	5
<b>2. Overall Description .....</b>	<b>5</b>
2.1 Overview .....	5
2.2 Technical Platform .....	6
<b>3. Functional Requirements .....</b>	<b>7</b>
3.1 Overview .....	7
3.1.1. Login/Registration .....	7
3.1.2. Task Creation .....	9
The Trainers can create Daily Task, Mini Project, Midterm Project and Final Project and upload the task file to the dashboard. ....	9
3.1.3. Evaluation .....	10
3.1.4. View Marks .....	11
3.1.5. User Profiles .....	11
<b>4. User Interface .....</b>	<b>12</b>
<b>5. Non-Functional Requirements .....</b>	<b>14</b>
5.1 Performance Requirements .....	15
5.2 Safety Requirements .....	15
5.3 Security Requirements .....	16
<b>6. Design Constraints .....</b>	<b>18</b>
<b>7. Software Quality Attributes .....</b>	<b>19</b>
<b>8. User Interface .....</b>	<b>19</b>
<b>9. Other Requirements .....</b>	<b>20</b>

# 1. Introduction

The Evaluation Management System is one of the three services of the Academy Training Management System. The EMS service is for managing the evaluations of the tasks and projects that the Trainees complete throughout the training program to track their progress.

EMS serves as a platform for the Trainers for creating tasks and uploading the scores of all the Trainees after evaluation; and for the Trainees to view the assigned tasks given to them by the Trainers and also get access to their achieved marks.

## 1.1 Purpose

The Software Requirements Specification (SRS) document serves the purpose of clearly describing and conveying the needs and expectations of the EMS to the development team. It contains the features, functionality and performance standards of the EMS, ensuring that the stakeholders have a consistent understanding of the scope of the project. This document also acts as a contract between the client and the development team, forming the foundation for future decision-making and quality assurance throughout the development process.

## 1.2 Scope

EMS web app is used by the Trainers to evaluate the tasks and projects that are uploaded by the Trainees based on given criteria. The evaluation is based on the daily tasks/assignments, mini-project, midterm project, and final project. Each of them has a certain criteria based on which the Trainees are evaluated. The marks are uploaded to the system by the Trainers, which then gets stored into the database. The marks obtained by the Trainees on Aptitude Test and CEO Interview are also uploaded by the Trainers. The final mark of the Trainees are generated after all the marks have been uploaded.

For the Trainees, the EMS serves as a platform for viewing the tasks assigned to them and also view the evaluations of the previous submitted tasks. The Trainees can upload their tasks on EMS and wait till the evaluation is provided, which can then be seen on the web app. The Trainees' dashboard will show the recent task and evaluation.

## 1.3 Intended Stakeholder

BJIT Academy is the main Stakeholder of this project.

## 1.4 References

Reference	Location
Requirement Specification	

## 1.5 Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
API	Application Programming Interface
SRS	Software Requirements Specification
EMS	Evaluation Management System
Web App	Web Application
UI	User Interface

## 2. Overall Description

### 2.1 Overview

The EMS web app is a platform for the Trainers as well as the Trainees to evaluate and keep track of the performance of the Trainees. The UI will be user friendly and simple to navigate.

**A. Product Perspective:** EMS web app can be used by Trainers for creating tasks and providing evaluations of the tasks submitted by the Trainees. The Trainees can also view the evaluation that they have received for their submissions.

**B. Product Functions:** The EMS web app will have the following features:

- Trainee and Trainer registration: The Trainees and Trainers can register themselves in the system by providing the required information.
- Batch Assignment: The Trainees will be assigned to specific batches.
- Daily tasks, mini project, midterm project and final project: There will be tasks created by the Trainers which will be from these four types.
- Task Submission: Trainees can complete the given tasks and submit them, also attaching files with them.
- Evaluation for each activity: All the tasks will be manually evaluated and the scores will be uploaded by the Trainers.

- **Manager's Evaluation:** The Trainer will upload the marks based on the given criteria, assessing the trainees' professional skills and qualities.
- **Aptitude Test and Interview Scores:** The Trainers will upload the scores of the trainees' aptitude test and CEO Office/ HR Interviews, which will then be included in the overall evaluation process.

**C. User Characteristics:** The target users are: the Trainees of the selected programs offered by BJIT Academy; the Trainers selected to teach the contents of the programs; and the Management members who are involved in the training program.

**D. Constraints:** The following constraints may impact the development of the EMS web app:

- **Performance Requirements:** The web app entirely depends on posting and retrieving data from the database. These transactions have to be quick.
- **Time and Budget:** The project needs to be completed within the given deadline and budget.
- **Wrong data input:** The EMS relies on the availability of relevant data and information that is required for the evaluation process. Any sort of failure will be dangerous as it will create a chain of errors.

**E. Assumptions and dependencies:** The assumptions made for developing the web app and the dependencies are provided below:

- The Trainers and Trainees will provide all the information while registering.
- The Trainees will correctly submit the assigned tasks, properly stating the Task type and the Task ID, making no human errors.
- The Trainers will give accurate scores during evaluation without making any errors.

## 2.2 Technical Platform

The technical platforms for the EMS web app is listed below:

**A. Operating System:** The web-app will be compatible for any OS: Windows, Mac OS, Android, iOS, Linux, etc.

**B. Development Environment:** The web app will be developed using IntelliJ IDEA for the back-end part and Visual Studio Code for the front-end part of the EMS.

**C. Programming Language:** Java will be used for back-end and HTML, CSS and Javascript will be used for front-end.

**D. Frameworks:** Spring Boot will be used for back-end and Bootstrap will be used for front-end.

**E. Libraries:** ReactJS, React Bootstrap, Lombok, Spring Security, Spring Web, JPA are all the libraries that will be used.

**F. Database:** MySQL will be used for storing and retrieving the data for the web app. The database will be properly designed, normalized and optimized to ensure efficient data management.

**G. Security:** Spring Security is used for security measures such as Authentication and Authorization for protecting sensitive user data and ensuring privacy.

**H. User Experience:** The web app focuses on providing easy navigation with a clear UI and responsive performance.

These are the technical platforms used for EMS to ensure the web app meets the needs and requirements of the end-users and stakeholders.

## 3. Functional Requirements

### 3.1 Overview

Serial No	Main Features	Description
1	Trainee/Trainer Registration	Users can either register themselves as a trainer or a trainee.
2	Assign Trainees to Batches	The Trainees will be assigned to specific batches by the admin
3	Daily Task/Assignment Creation	Trainers can create daily tasks/assignments for the trainees with also attaching the task file.
4	Daily Task Evaluation	The trainees' daily task submission will be evaluated on a predefined criteria.
5	Mini Project Evaluation	The trainees' mini project submission will be evaluated on a predefined criteria.
6	Midterm Project Evaluation	The trainees' midterm project submission will be evaluated on a predefined criteria.
7	Final Project Evaluation	The trainees' final project submission will be evaluated on a predefined criteria.
8	Manager's Evaluation	The Trainers will upload the scores of each trainees that they achieved in the predefined criteria.
9	Aptitude Test and CEO Office/HR Interview Score	The Trainers will upload the scores of each trainees to the system.
10	Final Score Generation	The admin will generate the final score based on weighted strategy.

#### 3.1.1. Login/Registration

The Login/Registration function of the system allows the users to access the data and information that they are authorized to. The procedure consists of the following steps:

**A. User Registration:** Users can create an account by providing the required information such as their full name, address, email, contact details, etc.

**B. Login:** After the users have registered, they need to log in using the email and password that they have set during registration.

**C. Logout:** The users can logout from their account just by clicking the logout button.

**D. User Profile:** The users can access their personal profile and view their personal information after logging in.

**E. Password Recovery:** The users can reset their password by clicking on 'Forget password'. This will provide a temporary password that will be send to them via email which they can use to access their account.

## Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_001	Users can create an account by providing basic information such as their name, email, password, contact details, etc.	Essential	Server might not be available	TC_001
EMS_002	After the account has been created, the user can log in using their email and password.	Essential	Server might not be available	TC_002
EMS_003	Users can reset their password if they forget their password. They can click on 'Forget password' which would send a temporary password to the users' email.	Essential	User may not be registered	TC_003
EMS_004	Users can log out from their account by clicking on the logout button.	Essential	User may not be logged in	TC_004



### 3.1.2. Task Creation

The Trainers can create Daily Task, Mini Project, Midterm Project and Final Project and upload the task file to the dashboard.

#### Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_005	Trainers can create daily tasks for each batch.	Essential	None	TC_005
EMS_006	Trainers can create mini project for each batch.	Essential	None	TC_006
EMS_007	Trainers can create midterm project for each batch.	Essential	None	TC_007
EMS_008	Trainers can create final project for each batch.	Essential	None	TC_008

### 3.1.3. Evaluation

The tasks that are submitted by the Trainees will be manually checked and the marks will be uploaded as per the predefined criteria.

#### Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_009	Trainers can evaluate the daily tasks on a predefined criteria.	Essential	None	TC_009
EMS_010	Trainers can evaluate the mini projects on a predefined criteria.	Essential	None	TC_010
EMS_011	Trainers can evaluate the midterm projects on a predefined criteria.	Essential	None	TC_011
EMS_012	Trainers can evaluate the final projects on a predefined criteria.	Essential	None	TC_012
EMS_013	Trainers can upload the scores of the Manager's Evaluation.	Essential	None	TC_013
EMS_014	Trainers can upload the scores of the Aptitude Test and CEO Office/HR Interview.	Essential	None	TC_014
EMS_015	The system can generate the final score of the trainees based on a weighted strategy.	Essential	None	TC_015

### 3.1.4. View Marks

#### Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_016	Trainers and admin can view the scores of the trainees individually or altogether.	Essential	None	TC_016
EMS_017	Trainees will only be able to view their own marks.	Essential	None	TC_017

### 3.1.5. User Profiles

#### Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_018	The user profile needs to have essential information such as full name, email, ID, contact details, etc.	Essential	None	TC_018
EMS_019	The role of the user needs to be mentioned in the profile, such as admin, trainer, trainee. This will define the access privileges of the user.	Essential	None	TC_019

EMS_020	The profile will show the evaluation history of the user, which would help review the performance.	Essential	None	TC_020
---------	--	-----------	------	--------

## 4. User Interface

UI No.	UI Name	Related Function Requirement ID	Description	Test case Identifier
EMS_UI_001	Home Screen	EMS_Function_001	The main screen of the system displays the latest scores, news, and analysis of recent evaluations.	TC_021
EMS_UI_002	Trainee/Trainer Dashboard	EMS_Function_002	A dashboard providing an overview of the trainee's/trainer's assigned tasks, evaluation progress, and other relevant information.	TC_022
EMS_UI_003	Batch Management	EMS_Function_003	A screen allowing admin to manage batches, including creating new batches, assigning trainees, and viewing batch details.	TC_023
EMS_UI_004	Task/Assignment Creation	EMS_Function_004	A screen where trainers can create tasks or assignments, specifying details such as title, description, and submission deadline.	TC_024

EMS_UI_005	Task/Assignment Submission	EMS_Function_005	A screen enabling trainees to submit their tasks or assignments with file attachments.	TC_025
EMS_UI_006	Task Evaluation	EMS_Function_006	A screen for trainers to evaluate trainees' task submissions, analyzing and assigning scores based on predefined evaluation criteria.	TC_026
EMS_UI_007	Final Score Display	EMS_Function_007	A screen displaying the final scores generated for trainees, reflecting their overall performance and progress throughout the evaluation process	TC_027
EMS_UI_008	Manager's Evaluation	EMS_Function_008	A screen where trainers can upload the manager's evaluation, providing scores and feedback on various parameters such as communication skills and work ethic.	TC_028
EMS_UI_009	User Account	EMS_Function_009	A screen allowing users to create and manage their accounts, including profile information, preferences, and notification settings	TC_030

## 5. Non-Functional Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_021	The system 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
EMS_022	The system 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
EMS_023	The web-app should have a user-friendly interface with clear navigation controls. It should be easy to use for users of all ages and skill levels.	Essential	May require regular user testing and feedback to improve the user experience.	TC_033
EMS_024	The web-app should be compatible with a range of popular web browsers and should work on different screen sizes and resolutions.	Essential	Regular testing is performed on different browsers, screen sizes, and resolutions to ensure compatibility and address any limitations or constraints.	TC_034

## 5.1 Performance Requirements

- **Response time for a transaction:** Average response time of transactions should be less than 2 seconds. Maximum response time of transactions should not exceed 5 seconds.
- **Throughput:** The web-app must be able to process at least 50 requests per second.
- **Capacity:** The web-app must support a minimum of 5,000 concurrent users.
- **Degradation modes:** In the event of a degraded network connection, the application should convert to offline mode while still allowing users to read scores and headlines.
- **Resource utilization:** Memory usage should not exceed 250MB. Optimizing disk utilization will reduce storage use. The use of communications should be improved to reduce data consumption. The application should be built to reduce battery use and prevent excessive heat production.

## 5.2 Safety Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_025	The web-app should not expose users to any potential harm or danger, including physical harm or psychological harm.	Essential	May require regular user testing and feedback to ensure safety.	TC_035
EMS_026	The web-app should protect the privacy and security of user data, including personal information and login credentials.	Essential	May require security audits and updates to ensure data safety.	TC_036
EMS_027	The web-app should not cause damage to the device or equipment being used to access the web-app.	Essential	May require regular testing and compatibility checks to ensure equipment safety.	TC_037

## 5.3 Security Requirements

- **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.
- **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.
- **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.
- **Auditing and Logging:** The application should preserve logs and historical data sets to monitor user activity and identify unusual conduct. These logs should be checked and analyzed on a regular basis to detect possible security concerns.
- **Network Security:** Communications between the web 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 web app should additionally limit communications between certain software components.
- **Integrity of Data:** The application should verify the integrity of crucial variables to guarantee that data is not changed or damaged during transmission. SHA-256 and other hashing algorithms may be used to verify the integrity of data.
- **Regular Security Updates:** The application should be routinely updated to patch any security flaws and maintain the safety of sensitive data.



REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_028	The web-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
EMS_029	The web-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
EMS_030	The web 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
EMS_031	The web 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 software languages for the Evaluation Management System may include Java or Spring Boot for the main application code and XML for the user interface design. The development tools that can be used may include Visual Studio, a popular Integrated Development Environment (IDE) for Web application development.
- The architectural constraints for the web 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 web app. This can help ensure maintainable and scalable code.
- The design constraints for the web app have been outlined in the previous answer and may include considerations such as platform compatibility, user experience, performance, data management, scalability, security, and compliance.
- Purchased components may include third-party libraries or APIs for specific functionalities, such as accessing live cricket scores or news feeds. The use of purchased components should be carefully evaluated to ensure that they meet the performance, security, and compatibility requirements of the app.

Some other constraints can be like :

- **Platform Compatibility:** The web app should be compatible with the latest version of the Android operating system and should support a range of device types and screen sizes.
- **User Experience:** The web 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 app.
- **Performance:** The web 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.
- **Data Management:** The web 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.
- **Scalability:** The web 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.
- **Security:** The web app should meet the security requirements outlined in the previous answer, including the protection of sensitive information and the prevention of unauthorized access.
- **Compliance:** The web app should comply with relevant legal and regulatory requirements, such as data privacy laws and industry standards.

## 7. Software Quality Attributes

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
EMS_032	The web-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
EMS_033	The web-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
EMS_034	The web-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
EMS_035	The web-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

## 8. User Interface

UI No.	UI Name	Related Info No.	Description	Notes	Test case Identifier
<Application name_001>					


## 9. Other Requirements

REQUIREMNT ID	Requirement Description	Acceptability/ Completion Criteria	Limitations/ Constraints	Test case Identifier
<Application name _001>				