**RailwayApplication**

**Software Testing:**

Software testing is the process of evaluation a software item to detect differences between given input and expected output. Also to assess the feature of A software item. Testing assesses the quality of the product. Software testing is a process that should be done during the development process. In other words software testing is a verification and validation process.

**Verification:**

Verification is the process to make sure the product satisfies the conditions imposed at the start of the development phase. In other words, to make sure the product behaves the way we want it to.

**Validation:**

Validation is the process to make sure the product satisfies the specified requirements at the end of the development phase. In other words, to make sure the product is built as per customer requirements.

**Basics of software testing:**

There are two basics of software testing: blackbox testing and whitebox testing.

**Blackbox Testing:**

Black box testing is a testing technique that ignores the internal mechanism of the system and focuses on the output generated against any input and execution of the system. It is also called functional testing.

**Whitebox Testing :**

White box testing is a testing technique that takes into account the internal mechanism of a system. It is also called structural testing and glass box testing.

Black box testing is often used for validation and white box testing is often used for verification.

**Types of testing:**

There are many types of testing like

* Unit Testing
* Integration Testing
* Functional Testing
* System Testing
* Stress Testing
* Performance Testing
* Usability Testing
* Acceptance Testing
* Regression Testing
* Beta Testing

**Unit Testing:**

Unit testing is the testing of an individual unit or group of related units. It falls under the class of white box testing. It is often done by the programmer to test that the unit he/she has implemented is producing expected output against given input.

**Integration Testing:**

Integration testing is testing in which a group of components are combined to produce output. Also, the interaction between software and hardware is tested in integration testing if software and hardware components have any relation. It may fall under both white box testing and black box testing.

**Functional Testing:**

Functional testing is the testing to ensure that the specified functionality required in the system requirements works. It falls under the class of black box testing.

**System Testing:**

System testing is the testing to ensure that by putting the software in different environments (e.g., Operating Systems) it still works. System testing is done with full system implementation and environment. It falls under the class of black box testing.

**Stress Testing:**

Stress testing is the testing to evaluate how system behaves under unfavorable conditions. Testing is conducted at beyond limits of the specifications. It falls under the class of black box testing.

**Performance Testing:**

Performance testing is the testing to assess the speed and effectiveness of the system and to make sure it is generating results within a specified time as in performance requirements. It falls under the class of black box testing.

**Usability Testing:**

Usability testing is performed to the perspective of the client, to evaluate how the GUI is user-friendly? How easily can the client learn? After learning how to use, how proficiently can the client perform? How pleasing is it to use its design? This falls under the class of black box testing.

**Acceptance Testing:**

Acceptance testing is often done by the customer to ensure that the delivered product meets the requirements and works as the customer expected. It falls under the class of black box testing.

**Regression Testing:**

Regression testing is the testing after modification of a system, component, or a group of related units to ensure that the modification is working correctly and is not damaging or imposing other modules to produce unexpected results. It falls under the class of black box testing.

**Beta Testing:**

Beta testing is the testing which is done by end users, a team outside development, or publicly releasing full pre-version of the product which is known as beta version. The aim of beta testing is to cover unexpected errors. It falls under the class of black box testing.

**TEST CASES:**

**Unit test:**

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| Test Case ID | 1 |
| Test Case Description | War file should get installed properly. |
| Steps | 1.Install the application inside Tomcat.  2. Run the application. |
| Test Case Result | Application should be successful installed. |
| Action Result | Application successfully started. |
| Status | Pass |

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| Test Case ID | 2 |
| Test Case Description | After running application web page should be open on browser |
| Steps | 1.Install the application.  2. Open Mozilla browser  3. Type URL address |
| Test Case Result | Application should be successfully started. |
| Action Result | Application successfully started and displayed welcome page |
| Status | Pass |

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| Test Case ID | 3 |
| Test Case Description | Application should provide login to admin only |
| Steps | 1. Install and Run the application  2. Login with admin |
| Test Case Result | Click on login insert valid username and password of admin, Then successfully login to next page |
| Action Result | Click on login insert valid username and password of admin, Then successfully login to next page |
| Status | Pass |

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| Test Case ID | 4 |
| Test Case Description | System should not provide login to other than admin |
| Steps | 1.Install the application.  2. Run the application  3. Click on login link |
| Test Case Result | Insert invalid username and password, then application stay on same page and give proper error message |
| Action Result | Same as expected |
| Status | Pass |

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| Test Case ID | 5 |
| Test Case Description | Functionality on admin page. |
| Steps | 1. Run the application  2.Login as admin |
| Test Case Result | For admin all options are given through link |
| Action Result | For admin all options are given through link |
| Status | Pass |

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| Test Case ID | 6 |
| Test Case Description | Check functionality for different link |
| Steps | 1. Run the application  2.Login as admin |
| Test Case Result | Click on the link, then according to link next page is opened |
| Action Result | Click on the link, then according to link next page is opened |
| Status | Pass |

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| Test Case ID | 7 |
| Test Case Description | Admin can insert new station |
| Steps | 1. Run the application  2.Login as admin  3.Click on add option |
| Test Case Result | Click on stations option add link, then admin add new station |
| Action Result | Click on stations option add link, then admin add new station |
| Status | Pass |

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| Test Case ID | 8 |
| Test Case Description | Admin can add new Station Master. |
| Steps | 1. Run the application  2.Login as admin  3.Click on add option |
| Test Case Result | Click on Station Master’s option add link, then admin add new Station Master |
| Action Result | Click on Station Master’s option add link, then admin add new Station Master |
| Status | Pass |

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| Test Case ID | 9 |
| Test Case Description | Admin can add Train Info |
| Steps | 1. Run the application  2.Login as admin  3.Click on add option |
| Test Case Result | Click on Train Info’s option add link, then admin add Train Info |
| Action Result | Same as expected |
| Status | Pass |

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| Test Case ID | 10 |
| Test Case Description | Admin can add train root |
| Steps | 1. Run the application  2.Login as admin  3.Click on add option |
| Test Case Result | Click on train root’s option add link, then admin add new train root |
| Action Result | Click on train root’s option add link, then admin add new train root |
| Status | Pass |

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| Test Case ID | 11 |
| Test Case Description | Admin can add nearest tourist place. |
| Steps | 1. Run the application  2.Login as admin  3.Click on add option |
| Test Case Result | Click on nearest tourist place’s option add link, then admin add new nearest tourist place |
| Action Result | Click on nearest tourist place’s option add link, then admin add nearest tourist place |
| Status | Pass |

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| Test Case ID | 12 |
| Test Case Description | Admin can view station |
| Steps | 1. Run the application  2.Login as admin  3.Click on view option |
| Test Case Result | Click on stations option view link, then admin view all registered station |
| Action Result | Click on stations option view link, then admin view all registered station |
| Status | Pass |

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| Test Case ID | 13 |
| Test Case Description | Admin can view Station Master information |
| Steps | 1. Run the application  2.Login as admin  3.Click on view option |
| Test Case Result | Click on Station Master option view link, then admin view Station Master information |
| Action Result | Click on users option view link, then admin view Station Master information |
| Status | Pass |

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| Test Case ID | 14 |
| Test Case Description | Admin can view registered Train Info |
| Steps | 1. Run the application  2.Login as admin  3.Click on view option |
| Test Case Result | Click on Train Info option view link, then admin view Train Info |
| Action Result | Click on Train Info option view link, then admin view Train Info |
| Status | Pass |

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| Test Case ID | 15 |
| Test Case Description | Admin can update station information |
| Steps | 1. Run the application  2.Login as admin  3.Click on update option |
| Test Case Result | Click on stations option update link, then admin can update station information |
| Action Result | Click on stations option update link, then admin can update station information |
| Status | Pass |

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| Test Case ID | 16 |
| Test Case Description | Admin can update registered Station Master information |
| Steps | 1. Run the application  2.Login as admin  3.Click on update option |
| Test Case Result | Click on Station Master option update link, then admin update Station Master information |
| Action Result | Click on Station Master option update link, then admin update Station Master information |
| Status | Pass |

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| Test Case ID | 17 |
| Test Case Description | Admin can update Train Info information |
| Steps | 1. Run the application  2.Login as admin  3.Click on update option |
| Test Case Result | Click on Train Info option update link, then admin update Train Info information |
| Action Result | Click on Train Info option update link, then admin update Train Info information |
| Status | Pass |

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| Test Case ID | 18 |
| Test Case Description | Admin can delete station information. |
| Steps | 1. Run the application  2.Login as admin  3.Click on delete option |
| Test Case Result | Click on station option delete link, then admin can delete station |
| Action Result | Click on station option delete link, then admin can delete station |
| Status | Pass |

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| Test Case ID | 19 |
| Test Case Description | Admin can delete Station Master |
| Steps | 1. Run the application  2.Login as admin  3.Click on delete option |
| Test Case Result | Click on users option delete link, then admin can delete Station Master |
| Action Result | Click on users option delete link, then admin can delete Station Master |
| Status | Pass |
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| Test Case ID | 20 |
| Test Case Description | Admin can delete Train Info. |
| Steps | 1. Run the application  2.Login as admin  3.Click on delete option |
| Test Case Result | Click on Train Info option delete link, then admin can delete Train Info |
| Action Result | Click on Train Info option delete link, then admin can delete Train Info |
| Status | Pass |

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| Test Case Result | Click on station option delete link, then admin can delete station |
| Action Result | Click on station option delete link, then admin can delete station |
| Status | Pass |

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| Test Case ID | 21 |
| Test Case Description | Admin can delete Station Master |
| Steps | 1. Run the application  2.Login as admin  3.Click on delete option |
| Test Case Result | Click on users option delete link, then admin can delete Station Master |
| Action Result | Click on users option delete link, then admin can delete Station Master |
| Status | Pass |

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| Test Case ID | 22 |
| Test Case Description | Apk should get installed properly. |
| Steps | 1.Install the application.  2.Open the application. |
| Test Case Result | Application should be successful installed. |
| Action Result | Application successfully started. |
| Status | Pass |

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| Test Case ID | 23 |
| Test Case Description | After clicking on the android icon, application should be started. |
| Steps | 1.Install the application.  2. First click on the menu  3. Search the application  4.Run application as android application. |
| Test Case Result | Application should be successfully started. |
| Action Result | Application successfully started. |
| Status | Pass |

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| Test Case ID | 24 |
| Test Case Description | System should provide the menu from which user can select the option for enter ip address. |
| Steps | 1.Click on the menu button.  2. Option menu should get open . |
| Test Case Result | After clicking on the menu system should perform the respective operation. |
| Action Result | After clicking on the menu system should perform the respective operation. |
| Status | Pass |

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| Test Case ID | 25 |
| Test Case Description | System should go to login page after click on button start, After filling Ip address. |
| Steps | 1.Run application as android application.  2.Insert IP addrees  3. Click the start button. |
| Test Case Results | After click on start button application shows next page i.e login page. |
| Action Result | Same as expected |
| Status | Pass |

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| Test Case ID | 26 |
| Test Case Description | System should provide the login to the validate users only |
| Steps | 1. Install the application.  2. First click on the menu  3. Search the application  4. Run application as android application.  5. Go to login page. |
| Test Case Result | System should provide the username password fields. |
| Action Result | Insert valid username and password, and submit. System logged in successfully |
| Status | Pass |

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| Test Case ID | 27 |
| Test Case Description | System should provide different buttons for searching train, nearest tourist place, lockers etc |
| Steps | 1. Install the application.  2. First click on the menu  3. Search the application  4. Run application as android application.  5. Go to login page. |
| Test Case Result | After login as validate user, next page is opened with various button options |
| Action Result | After login as admin, next page is opened with various button options |
| Status | Pass |

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| Test Case ID | 28 |
| Test Case Description | System should not put the phone  On flight mode while running. |
| Steps | 1.Run application as android application.  2.Click on start button. |
| Test Case Result | Application should run and phone should be in on mode. |
| Action Result | Running properly. |
| Status | Pass |

**Performance Testing**

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| Test Case ID | 29 |
| Test Case Description | Phone should not get hang due to application. |
| Steps | 1.Run application as android application.  2.Click on start button. |
| Test Case Result | Application should run. |
| Action Result | Application running and phone working properly. |
| Status | Pass |

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| Test Case ID | 30 |
| Test Case Description | System should not disturb telephony activity. |
| Steps | 1.Run application as android application.  2.Click on start button.  3.User can receive incoming calls. |
| Test Case Result | Application should not block incoming calls. |
| Action Result | User can receive calls. |
| Status | Pass |

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| Test Case ID | 31 |
| Test Case Description | System should not block incoming massages. |
| Steps | 1.Run application as android application.  2.Click on start button.  3.User can receive incoming massages. |
| Test Case Result | Application should not block incoming massages. |
| Action Result | User can receive massages. |
| Status | Pass |

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| Test Case ID | 32 |
| Test Case Description | Application should not run as background service. |
| Steps | 1.Run application as android application.  2.Click on start button. |
| Test Case Result | Application should not run as background service. |
| Action Result | Application is not running as background service. |
| Status | Pass |

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| Test Case ID | 33 |
| Test Case Description | Application should use minimum battery. |
| Steps | 1.Run application as android application.  2.Click on start button. |
| Test Case Result | Application should use minimum battery. |
| Action Result | Application battery usage is minimum. |
| Status | Pass |