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# **Test Plan Identifier**

### Master Test Plan for Dhaka Subway Systems Automated Ticket Issuing System

### (MTP\_DSS\_1.0.0)

### **2. References**

The given Requirements for the Project-

* The software will support interface to touch screen monitors as well as keyboard interface.
* The software will support display of the list of incoming trains, their destinations and arrival and departure times, fare, expected travel time
* The software will support multiple ticket purchase simultaneously.
* The software will support limiting the number of tickets purchased at the same time. This privilege control will be done by the administrator access only.
* The software will support ticket cancellation before the final confirmation of the purchase.
* The software will support purchased ticket cancellation by the administrator.
* The software will support credit card transaction and validation.
* The software will support transactions using bill(taka) /coin
* The software will support next and previous navigation during the ticket purchase process.
* The software will support ticket availability information.
* The software will support information display via the web.
* The software will support account management of Dhaka Subway Systems
* The software will use an Oracle database server. Dhaka North City Corporation (DNCC) will be responsible for the license fees of the Oracle database server.

# **Introduction**

This document outlines a test strategy for the Automated Ticket Issuing System of Dhaka Subway Systems. It has both a touch screen monitor and a keyboard interface. It can also show information such as train arrival and departure timings, rates, estimated journey time, and ticket availability. It allows people to buy numerous tickets at the same time. They can use a credit card or a bill (taka)/coin to conduct a transaction. Only the administrator can restrict the number of tickets that can be purchased at the same time. During the next and previous navigation, it also gives a buying method.

# **Test Items**

The test items of the system are listed below:

* 24/7 service
* Ticket availability information display
* Train arrival and departure time display
* Touch screen menu selection
* Source and destination selection
* Multiple ticket issues in one transaction
* Limit the number of ticket issues at the same time
* Cancellation of transactions any time during a transaction
* Credit card transaction
* Coin/Taka recognition and acceptance

# **5. Features to be tested**

* Interface to touch screen monitors as well as keyboard interface.
* Display the list of incoming trains, their destinations and arrival and departure times, fare, and expected travel time.
* Multiple ticket purchases simultaneously.
* Limiting the number of tickets purchased at the same time.
* Ticket cancellation before the final confirmation of the purchase.
* Purchased ticket cancellation by the administrator.
* Transaction using bill taka /coin.
* Account management.
* Ticket availability information.
* Information displayed via the web.
* Oracle database server support.

# **6. Features not to be tested**

* Next and previous navigation during the ticket purchase process.
* Credit card transaction and validation.

1. **Approach**

A test approach is the test technique execution of a project, which characterizes how testing would be carried out. This project Dhaka Subway Systems Automated Ticket Issuing System will be done by four levels of testing, manual testing, automated testing, and follow test cases. Unit testing, Integration testing, System Testing, and Acceptance testing are four levels of software testing. Unit testing is the first level of testing and is often performed by the developers themselves. Developers in a test-driven environment will typically write and run the tests before the software or feature is passed over to the test team. Unit testing can be conducted manually, but automating the process will speed up delivery cycles and expand test coverage. The white box testing approach will be used in it. After each unit is thoroughly tested, it is integrated with other units to create modules or components that are designed to perform specific tasks or activities. Integration testing will be performed by professional testers or developers using the Gray Box testing approach. System testing is a black-box testing method used to evaluate the completed and integrated system, as a whole, to ensure it meets specified requirements. The system testing will be performed by professional test engineers. Acceptance testing is the last phase of functional testing and is used to assess whether or not the final piece of software is ready for delivery. The black box testing method is used in acceptance testing and will be performed by customers and end-users.

1. **Item pass/ fail criteria**

The expected resultis the pass/fail criteria for that step. If the test step was executed and the expected result did occur and was either witnessed or recorded and can be confirmed, then that test step can be considered to have passed, and the test step's requirement is verified. It should be considered the budget, time, and end-user of a test plan. If 97% of the system's test cases pass, the system is considered passed or successful in this test plan. In a test plan, 100% of test cases pass is impossible because of not getting infinite resources and time.

1. **Test Deliverables**

* Test Plan
* Test Cases
* Test Scripts
* Test Suite
* Execution Log
* Defect Log
* Summary of the report

1. **Remaining test tasks**

* Unit Testing
* Integration Testing
* System Testing
* Performance Testing
* Acceptance Testing

1. **Environmental needs**

We must meet specific environmental requirements to run the system. We'll need hardware, and software for our system to work properly. Computers are referred to as hardware in our system. The term "software" refers to the operating system. A good amount of space is also required to run the entire system. The table below shows the minimum hardware and software requirements for running the program in the test environment:

|  |  |
| --- | --- |
| **Hardware** | **Software** |
| Computer | Dhaka subway system database(Oracle) |
| Keyboard | Windows 10/11 |
| Mouse | MS Office |
| Printer | Drawio(for design diagrams etc.) |
| Monitor | Microsoft Teams(for the meeting) |
| Extra Hard Disk/ SSD | OBS(Screen& Sound Recorder) |
| Router/Modem | Microsoft Edge |
| Credit card readers/terminal |  |

Besides this hardware and software, we need the Selenium tool for testing purposes.

# **12. Staffing and Training needs**

The "Dhaka Subway Automated Ticket Issuing System" will be developed by a team of four test engineers (three manual and one automated engineer). At least three full-time testers should be on-site at all times during the system, acceptance, and all major mission-critical testing periods. One more member of the test team may be a new hire, allowing us to avoid paying them as full-time testers. They can review the testing procedure, receive training, and learn how to conduct large-scale tests.

To provide thorough and proper testing, the following training areas must be addressed:

* The subway ticketing machine's hardware must be taught to the test engineers. How it works, the interaction mechanism, so they can better understand how to test the device precisely and identify flaws.
* Test engineers should be familiar with the ticket printing mechanism and the hardware that will be used for this purpose.
* Fresh hires should be taught and learn how to do things from senior engineers.

**13. Responsibilities**

|  |  |  |
| --- | --- | --- |
| **Responsibility** | **Name** | **Role** |
| Requirement Analysis | Md. Khairullah Jaman | Requirement Engineer |
| Write Test Plan | Md. Kamrul Hassan | Test Lead |
| Write Test Case | Md. Sayed Kabir | Test Engineer |
| Unit test | Md. Rafiq Islam | Programmer |
| Integration Test | Md. Faruq Islam, Md. Rafiq Islam | Junior Tester and Programmer |
| System Test | Md. Kabir Hossain | Professional Tester |
| Acceptance Test | Md. Harun Mollah | QA Engineer |
| Regression test and control changing | Md. Sayed Kabir, Md. Faruq Islam | Test Engineer and Junior Tester |
| Printed ticket sample review | Fuad Hassan | Project Manager |
| Ticket purchasing review | Fuad Hassan | Project Manager |
| Money transition review | Fuad Hassan | Project Manager |
| Database review | Fuad Hassan | Project Manager |
| Design review | Md. Kamrul Hassan, Fuad Hassan, Md. Faruq Islam | Test Lead, Project Manager, Junior Tester |
| Test documentation & execution | Md. Sayed Kabir, Md. Faruq Islam | Test Engineer and Junior Tester |

**14. Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Duration** | **Start** | **Finish** |
| Requirement Analysis | 7 Days | 01-April-22 | 08-April-22 |
| Test Plan | 15 Days | 09-April-22 | 24-April-22 |
| Test Case Documentation | 40 Days | 25-April-22 | 04-June-22 |
| Select Test Cases | 6 Days | 5-June-22 | 10-June-22 |
| Unit Test | 100 Days | 11-June-22 | 18-September-22 |
| Integration Test | 170 Days | 21-September-22 | 09-March-23 |
| System Test | 60 Days | 13-March-23 | 13-May-23 |
| Acceptance Test | 30 Days | 17-May-23 | 17-June-23 |
| Prepare Test Suits | 10 Days | 21-June-23 | 01-June-23 |
| Alpha Test | 28 Days | 02-June-23 | 30-June-23 |
| Product Release | 1 Day | 01-July-23 | 01-July-23 |
| Beta Test | 60 Days | 02-July-23 | 02- September-23 |
| Regression Test | 30 Days | 03-September-23 | 03- October-23 |
| Final Product Release | 1 Day | 04-October-23 | 04- October-23 |

**15. Planning Risks and Contingencies**

|  |  |
| --- | --- |
| **Risks** | **Backup Plan** |
| Could be data deletion, computer hardware failure, or network failure. | We should keep backup storage for the data (like using cloud storage and SSD/HDD). We have to store some extra computer hardware (like RAM, Power Supply, Cables, etc.) because of can be a failure of computer hardware. And lastly, we have to store Modem. Because Wifi can be a failure, in that situation to backup the network we can use the backup Modem. |
| Could be a lack of power supply, components damage/failure (like AC, light, etc.) | We must have to store a generator. Because if the electricity is gone, in that situation generator will supply the power. And we have to hire an electrician for the office hour. Because any of the components could be a failure (like AC, light, etc.). To fix these we need an instant electrician service. |
| Employees could be sick in the office | We need to hire a doctor because of to check the employee’s health condition |
| Could be an unexpected holiday (like a strike, natural disaster, office maintenance, etc.) | To get rid of this unexpected holiday we have to arrange a workstation via an online platform (like Microsoft Teams, Google meet, etc.) |
| The office may catch fire | All vulnerable sites should have fire detection and suppression equipment, such as smoke detectors, fire extinguishers, and Halon. |
| Could be a failure to upgrade/update the software in the future. | The software system must be adaptable enough to handle changes and expand its capabilities in the future. |
| Delayed Testing Due To new Issues | During testing, there is a good chance that some new defects may be identified and may additionally become a problem that will take time to resolve. Some defects can be raised during checking out because of unclear document specifications. These troubles will significantly have an impact on the general assignment schedule. If new defects are discovered, the defect administration and issue management approaches should be in place to right now grant a resolution. |

# **16. Approvals**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Designation** | **Date** | **Sign** |
| Fuad Hassan | Project Manager | 25-April-22 | fuad |
| Md. Kamrul Hassan | Test Lead | 25-April-22 | kamrul |
| Md. Sayed Kabir | Test Engineer | 25-April-22 | sayed |
| Md. Khairullah Jaman | Requirement Engineer | 25-April-22 | khairullah |
| Md. Rafiq Islam | Programmer | 25-April-22 | rafiq |
| Md. Kabir Hossain | Professional Tester | 25-April-22 | kabir |
| Md. Harun Mollah | QA Engineer | 25-April-22 | harun |
| Md. Faruq Islam | Junior Tester | 25-April-22 | faruq |
| Md. Muhaiminul Islam | IT director, Dhaka Subway System | 25-April-22 | shahed |

**The End**