AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH

Assignment Title:	Developing a Test Plan for Dhaka Subway Systems Automated Ticket Issuing System		
Report No:	Final Project: 01		
Course Title:	Software Quality and Testing	**Section:**	E
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Project: Developing a Test Plan for Dhaka Subway Systems Automated Ticket Issuing System

1. Test Plan Identifier: FTP_DSST_1.0.0

2. References:

The following information is the reference for the test plan:

- Software Requirement Specification (SRS) Document
- High-Level Design Document
- Detail Design Document
- Low-Level Design Document

3. Introduction:

This document is an overview defining our testing strategy for Automated Ticket Issuing System for Dhaka Subway Systems. This project's goal is to provide automated ticket selling for public use. This document will address the different standards that will apply to the unit, integration and system testing of the specified application. We will utilize testing criteria under the white box, black box, and system-testing paradigm. This paradigm will include but is not limited to, the testing criteria, methods, and test cases of the overall design. Throughout the testing process, we will be applying the test documentation specifications described in the IEEE Standard 829 for Software Test Documentation. Specifically, testing will now consist of the following phases (listed chronologically):

- Unit and integration level – adherence to coding standards and successful communication between units
- Code Quality Assurance - acceptance into system-level testing by successfully repeating a small subset of the tests performed in the code and integration level
- System-level – compatibility, performance, usability, functionality, etc.
- System Quality Assurance & Acceptance
- Post Implementation

4. Test Items

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_1	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Credit card validity	
Test Title: Verify Credit Card validity	
Description: After selecting the User's destination, input a credit card and a PIN (personal identification number) number. Check if the card is valid or not.	
Precondition(if any): The user must enter the credit card.	
Test Steps: 1. User must select the destination 2. Then, Input a credit card 3. Check any messages appear or not 4. Check the message says the card is valid or not 5. Input a PIN number	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_2	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Credit card transaction	
Test Title: Verify Credit Card transaction	
Description: After inputting a credit card and a PIN (personal identification number) number. Check if the card is valid or not. Then, the credit card account charged with its cost.	
Precondition(if any): The user's credit card must be valid.	
Test Steps: 1. User must Input a valid credit card 2. Input a PIN number 3. Checks the credit card account charged with its cost	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_3	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Touch Screen monitors and keyboard interface.	
Test Title: Verify Touch Screen monitors and keyboard interface.	
Description: The User touch the monitor and see if the monitor works or not and checks the keyboard interface. Checks the keyboard to input the right data.	
Precondition(if any): The user touches the monitors and keyboard.	
Test Steps: 1. User must touch the monitor's screen. 2. Checks the monitor is working or not for proper command 3. Touch the keyboard interface and check the keyboard is working or not for proper command	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_4	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Ticket availability status	
Test Title: Verify Ticket availability Information	
Description: Enter the desired destination and check whether its ticket is available or not.	
Precondition(if any): The users must search available destination	
Test Steps: 1. Enter the desired destination 2. Check whether its ticket is available or not 3. Checks the display shows the correct information of the ticket availability.	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_5	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Multiple ticket issues in one transaction	

Test Title: Verify Multiple ticket issues in one transaction
Description: After entering the desired destination and check whether its ticket is available or not and enter the number of the ticket to take issue. Checks system will support limiting the number of tickets purchased at the same time. Then, issued multiple tickets in one transaction.
Precondition(if any): The user requested multiple tickets in one transaction.
Test Steps: 1. Entering the desired destination 2. Check whether its ticket is available pr not. 3. Enter the number of the ticket to take issue 4. Checks system will support limiting the number of tickets purchased at the same time. 5. Issue multiple tickets in one transaction.

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_6	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Coin/Taka recognition and acceptance	
Test Title: Verify Coin/Taka recognition and acceptance	
Description: Enter the coin/take in the system. Checks the system recognizes the coin/taka or not. Then, checks whether the system will accept the coin/taka or reject it.	
Precondition(if any): The user enters the valid coin/taka.	
Test Steps: 1. User must Enter the valid coin/take in the system. 2. Checks whether the system recognizes the coin/taka or not. 3. Checks the system will accept the coin/taka or reject it	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_7	Test Designed Date: 10/04/2022
Test Priority: High	
Module name: Train arrival and departure time status	
Test Title: Verify Train arrival and departure time display	
Description: Checks the system will display the list of incoming trains, their destinations and arrival and departure times.	
Precondition (if any): The user checks their expected travel time	
Test Steps: 1. Checks the system support to display the list of incoming trains 2. Checks train's destination 3. Checks train's arrival and departure times	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_8	Test Designed Date: 10/04/2022
Test Priority: High	

Module name: Source and destination selection
Test Title: Verify Source and destination selection
Description: Checks the system will display Source and destination selection
Precondition(if any): The user selects the source and destination
Test Steps: 1. Select source and destination from the menu 2. Checks source and destination selection is working or not.

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_9	Test Designed Date: 10/04/2022
Test Priority: medium	
Module name: next and previous navigation	
Test Title: Verify next and previous navigation	
Description: Checks the system will support next and previous navigation during the ticket purchase process	
Precondition(if any): The user sees the next and previous navigation	
Test Steps: 1. Checks next and previous navigation is working or not during the ticket purchase process.	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_10	Test Designed Date: 10/04/2022
Test Priority: medium	
Module name: transaction cancellation	
Test Title: Verify transaction cancellation	
Description: Checks software will support ticket cancellation before the final confirmation of the purchase	
Precondition(if any): The user cancel transaction.	
Test Steps: 1. Checks software will support ticket cancellation before the final confirmation of the purchase.	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_10	Test Designed Date: 10/04/2022
Test Priority: medium	
Module name: display information via web.	
Test Title: Verify display information via web	
Description: Checks software will support to display of information via web	
Precondition(if any): The user knows the software web server.	
Test Steps: 1. Checks software will support to display of information via web.	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_11	Test Designed Date: 10/04/2022
Test Priority: medium	
Module name: Account management of Dhaka Subway Systems	
Test Title: Verify Account management of Dhaka Subway Systems	
Description: Checks software will support Account management of Dhaka Subway Systems	
Precondition(if any): The user selects Account management of Dhaka Subway Systems.	
Test Steps: 1. Checks software will support Account management of Dhaka Subway Systems.	

Project Name: Automated ticket issuing system	Test Designed By: JEBA FAWJIA
Test Case ID: T_12	Test Designed Date: 10/04/2022
Test Priority: medium	
Module name: Oracle database server and license checks.	
Test Title: Checks Oracle database server and license	
Description: Checks software will use an Oracle database server and Dhaka North City Corporation (DNCC) will be responsible for the license fees.	
Precondition(if any): The user checks the Oracle database server	
Test Steps: 1. Checks software will use Oracle as the database server. 2. Checks Dhaka North City Corporation (DNCC) will be responsible for the license fees.	

6. Features to be tested:

The feature will be tested that are as follows:

- Touch screen menu selection.
- 24/7 service
- Displayed trains arrival and departure time Information, fare
- Multiple ticket purchase supports simultaneously
- Limiting the number of tickets purchased at the same time by privilege control and the administrator access only
- Ticket cancellation support before the final confirmation of the purchase
- Purchased ticket cancellation support by the administrator Ticket availability information,
- Credit/Debit card transaction
- Con/Taka recognition and acceptance.
- Ticket availability information display.
- Source and destination selection
- Multiple ticket issue in one transaction
- Credit/Debit cant acceptance

7. Features not to be tested:

The features are not to be tested given bellow:

- Displayed information via Website
- Touch Screen monitors and keyboard interface.

- Oracle database server support

8. Approach:

The accompanying addresses the general progression of the testing system approach distinguish the necessities to be tested.All test cases will be inferred utilizing the current Program Specification.

Testing approach can be manual or automation testing. Manual testing is a product testing process in which experiments are executed physically without utilizing any robotized apparatus. All experiments executed by the analyzer physically as per the end client's point of view. It guarantees whether the application is working, as referenced in the necessity record or not.

Automation testing is the most common way of testing programming and other tech items to guarantee it meets severe prerequisites. Basically, it's a test to twofold make sure that the hardware or programming does the exact thing it was intended to do. It tests for bugs, deserts, and whatever other issues that can emerge with item improvement.

The character which specific test(s) will be utilized to test every module Audit the test information and test cases to guarantee that the unit has been checked and that the test information and test cases are satisfactory to confirm appropriate activity of the unit Identify the normal outcomes for each test. Archive the test case setup, test information, and expected outcomes Perform the tests. Archive the test information, test cases, and test arrangement utilized during the testing system. This data will be submitted to the Unit/System Test Report (STR) Successful unit testing is expected before the unit is qualified for part combination/system testing.

Fruitless testing requires a Bug Report Form to be produced. This record will depict the test case, the issue experienced by its conceivable reason, and the arrangement of occasions that prompted the issue. It will be utilized as a reason for later specialized investigation. Test archives and reports will be submitted. Any determinations to be reviewed, revise, or then again updated will be given right away.

9. Item Pass/Fail criteria

This section specifies generic pass/fail criteria for the tests covered in this plan. They are supplemented bypass/fail criteria in the test design specification. Note that “fail” in the IEEE standard terminology means “successful test” in our terminology.

Component Pass/Fail criteria

Tests executed on components only pass when they satisfy the signatures, constraints, and interfaces dictated by the Object Design Specification for that component. This includes positive tests, negative and stress tests, and boundary tests. If a test exhibits a product failure to meet the objectives of the object design specification, it will fail and a defect/issue will be reported in the defect tracking system for review by the triage team. The Component Pass/Fail criteria is 92%. Below 92% the Component will be fail.

Integration Pass/Fail criteria

Tests executed on integrated components only pass when they satisfy the signatures, constraints, and interfaces dictated by both the object design specification and the system architecture specification. This includes positive tests, negative and stress tests, boundary conditions, and tests that explicitly manipulate the interface environment (such as the physical connection to the database server). If a test exhibits a product failure to meet the objectives of both the object design specification and the system architecture specification, it will fail and a defect/issue will

be reported in the defect tracking system for review by the triage team. The Integration Pass/Fail criteria is 90%.Below 90% the Integration will be fail.

System Pass/Fail criteria

Tests executed against the system use the functional requirements, non-functional requirements, and use cases as the oracle to determine pass or fail.

If a test exhibits a product failure to meet the objectives of any of the functional requirements, non-functional requirements, or the use cases, it will fail and a defect/issue will be reported in the defect tracking system for review by the triage team. The System Pass/Fail criteria is 95%.Below 95% the System will be fail.

11. Test Deliverables

- Acceptance test plan
- System/Integration test plan
- Unit test plans/turnover documentation
- Test Cases
- Summary Report mock-ups
- Test Scripts
- Execution log
- Defect log
- Defect/Incident reports and summaries
- Test logs and turnover reports
- Fixed bug report

Phase 1 Testing Deliverables:

Items Name	Date
Master Test Plan	Jan 2022
System Test Results Document	Feb 2022
Acceptance Test Results Document	April 2022

Phase 2 Testing Deliverables:

Items Name	Date
System Test Results Document	May 2022
Acceptance Test Results Document	June 2022

The developer has responsibility for the following software testing deliverables and milestones:

Phase 1 Testing Deliverables:

Items Name	Date
Completion of Software Coding	Jan 2022
Completion of Unit, Integration & System Testing	Feb 2022

Integration Test Results Document	April 2022
Completion of Field Acceptance Testing	May 2022

13. Environmental needs

One separate, controlled system will be required for the initial phase of testing, setup as per one standard, complete office environment. In order to maintain the integrity of the test environment this network will not be accessible to anybody outside this project. The printers are also exclusively for use by the test network.

Hardware components required:

1 Network Controller
6 Networked PC's (See below):
1 DAP Workstation
1 Motorola 6520
1 Oracle Server
1 Batch Waste Printer
1 HP LaserJet 4v Printer
15 Touch screen monitor

PC Specifications:

The 6 PC's required for the test environment will include the following:

1 x P100, 1 GB HD, and 16Mb RAM [Current Minimum Specification] 3 x P166, 1.5 GB HD and 32 Mb RAM [Current Standard Specification] 1 x P333, 2.5 GB HD, and 64 Mb RAM [Current Maximum Specification] .These specifications are the various specifications currently in use in different branches.

1 x Pentium running Windows NT is also required as the Test center for controlling and executing the automated testing

Software:

Test IMS environments

Test IMS region X will be required for System Testing. Additional
or amended data will be populated where required.

Test Environment Software

System Test will be run on the following Software Versions:

Custom Desktop Vers.97.0.1
Windows 7 Operating System
Visual Basic 5 Runtime Files
MS Office 2010
Novell Netware

14. Staffing and Training needs:

This section outlines how to approach staffing and training the test roles for the project. Staffing is fixed for the duration of this project. It is most of the staff will assume some testing role that will be discussed in detail in responsibilities section bellow.

Assuming that this is an Iteration Test Plan, we ought to zero in fundamentally on where and what preparing could happen during the Iteration. Preparation needs, and plan to plan this in view of a Just-In-Time JIT approach-there is in many cases an impulse to go to preparing excessively far ahead of its use when the test group has evident leeway. Doing this presents the gamble of the

preparation it being forgotten when required. Searching for potential chances to join the acquisition of efficiency apparatuses with preparing on those devices, and orchestrate with the seller to defer conveyance of the preparation until not long before want it. Assuming that we have sufficient headcount, consider having preparing conveyed in an altered way , potentially at own site. The test group frequently needs the help and abilities of other colleagues not straightforwardly a piece of the test group. Ensures orchestrate in arrangement for fitting accessibility of System Administrators, Database Administrators, and Developers who are expected to empower the test effort. Milestone Planned Start Date Actual Start Date Planned End Date Actual End Date Iteration Plan concurred Iteration begins Requirements baselined.

15. Responsibilities

Name	Designation	Date	Specific responsibilities	Signature
JEBA FAWJIA	Test Lead	01/04/2022	involves in the planning, monitoring, and control of the testing activities and tasks as follows: • Building up and leading the Testing Team to the success of the project. • Defining the scope of testing within the context of each release/delivery. • Deploying and managing resources for testing. • Applying the appropriate test measurements and metrics in the product and the Testing Team. • Planning, deploying andselects mana ging the testing effort for any given engagement.	Jeba fawjia
ARINDAM DEY	Project Manager	02/04/2022	• Initiating: In this phase Develop a project charter and Identify stakeholders. • Planning: Planning, defining, and developing schedules, activities, estimating resources and activity durations, planning for and identifying potential risks, performing qualitative and quantitative risk analysis. • Executing: Performing all aspects of managing quality	Arindam Dey

			• Monitoring and controlling:Validating and controlling the scope of the project. • Budgeting: Fix the possible amount of the Budget. • Closing: Closing and delivering all project procurements	
MEHEDI HASAN	Director Manager	02/04/2022	• To direct and control the company's operations • to give strategic guidance and direction to the board to ensure that the company achieves its mission and objectives.	Mehedi Hasan
Md. REFATUL ISLAM	Director IT, DNCC	03/04/2022	Includes many high-level tasks related to IT management, security, and efficiency. • Developing IT security policies that cover data access, devices, incident response, and other issues • Managing computer systems, networks, and security • Protecting sensitive information and system-crucial data	Refatul Islam
Mr. ARIFUL ISLAM	Tester	05/04/2022	• Develop test cases and prioritize testing activities. • Develop Tests • Execute Tests • required to record bugs, glitches and other flaws in great detail. • Troubleshoot Issues • Execute and log the tests	Ariful Islam
MOSTAFIZUR RAHMAN	QA Analyst	04/04/2022	Identifies and defines specific tests to be conducted. • Define test details and identify test ideas. • Perform document change requests. • ensuring the product is culturally compatible with the target market • determining test results and evaluating product quality. • Monitor efforts to resolve product issues and track progress	Mostafizur Rahman

ASIF MAHMUD	Configuration Manager	03/04/2022	Ensure daily end-to-end delivery of Configuration Management services in accordance with this Configuration Management Plan. • Managing the day to day activities of the process, including establishing priorities and work assignments. • Tracking compliance to policies and procedures and resolving / escalating any compliance issues. • Facilitates communication and engages business and IT management • encourages configuration management efforts and value proposition	Asif Mahmud
ARGHO DAS	Developers	03/04/2022	In charge of writing the code and developing the software products. • Develop the features of the software. • Update the status of the software to the project manager.	Argho Das
FAHIM FAISAL	Designer	04/04/2022	• Define the test classes required to support testability requirements. • Analyze functional requirements intended for the users. • Define the information architecture and navigation model.	Fahim Faisal
JASMIN RAHMAN	Database Manager	04/04/2022	Provide guidance to the database team on test data(database) and features as follows: • Ensure database management and maintenance tasks • Identify and resolve database issues related to performance and capacity. • Supervise installation, migration, and upgrade of databases. • Ensure that the database is developed according to business requirements.	Jasmin Rahman

16. Schedule

Week Works	Week 1	Week 2	Week 3	Week 4	Week 4	Week 5	Week 6
Panning Requirements/ Documentation							
1. Identify Needs And Benefits							
2. Requirements Gathering							
3. Resource Planning							
4. Prepare Documentation							
Analysis							
1. Requirements Analysis							
2. Budget Estimation							
3. Requirements Specification							
Design							
1. Use Case Diagram							
2. Activity Diagram							
3. Class Diagram							
4. User Interface Design							
Test Plan							
Implementation							
1. System Construction							
Testing							
1. Quality Testing Plan							
2. Unit Testing							
3. Integration Testing							
4.System Testing							
5.Acceptance Testing							
Development							
Maintenance							
possible completion							

17. Planning Risks and Contingencies:

1. Prior to the app launch, it's easy to focus all of our resources on development alone. While it's essential to build a high-performing app, marketing efforts are just as important in order to ensure success once your app has hit the app stores.

2. Consumers are more likely to download an app if they can see its value. Strong ratings and reviews provide potential users with insight before they've even downloaded the app. additionally; App store algorithms consider reviews and ratings as a part of their ranking system. In order to rank high, your app needs to have positive feedback from its users.

Risk	Probability	Risk Type	Owner	Contingencies
Unable to acquire the necessary number of skilled personnel as the components become ready to test	30%	Personnel Schedule	Test Manager	Resources for components will be split between the existing resources. The schedule must be adjusted accordingly.
Unable to acquire some of the necessary hardware and software required for integration and system testing	25%	Equipment	Program Manager Test Manager Development Manager	Utilize existing acquired hardware. Split test execution into morning and evening shifts such that testing can occur for multiple teams on the same day using the limited hardware. This requires the support of the development during both shifts.
Third-party services utilized in the system become unavailable during testing	5%	Third-party	Alliance Manager	Set up a communication channel to 3rd party to report and handle issues when they occur. Use the communication channel above to stay aware of planned outages and maintenance to help schedule test execution.

Components are not delivered on time	25 %	Schedule	Development manager	Integration testing with those components must be delayed until the component is delivered. The overall integration test approach may be modified to do an appropriate amount of bottom-up as well as top-down or sandwich integration. The schedule must be adjusted accordingly.
Turn over	5%	Personnel	Test Manager	Testers will work in pairs on components. If a single member of the team decides to leave, secondary testing with the knowledge of the component will still be able to train a new tester or finish the work. The schedule must be adjusted accordingly.

18. Approvals:

Name & Designation	Date	Sign
Fawjia, Jeba, Test Lead, Datasoft, Inc.	15 April 2022	Jeba
Md. Refatul Islam, Director IT, DNCC , Datasoft, Inc.	15 April 2022	Refatul
Rahman,Md Shohanur, Devloper, Datasoft, Inc.	15 April 2022	Shohanur
Arindam Dey, Project Manager, Datasoft, Inc.	15 April 2022	Arindam
Mehedi Hasan, Director Manager, Datasoft, Inc.	15 April 2022	Mehedi
Mohammad Arifur Rahman Project Assistant Director, IT, DNCC	15 April 2022	Arifur