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## American International University- Bangladesh (AIUB)

## Department of Computer Science

## Software Quality and Testing

## Spring 2021-2022

## 

## Project: Developing a Test Plan for Dhaka Subway Systems Automated Ticket Issuing System

## 

## Objective:

The objective of this project is to develop a test plan. The students will apply their knowledge and understanding learned from the course in order to develop the test plan. Based on the given requirements and functionalities of the system under test, the students will write the Test Plan.

## Submission Rules:

**Deadline**: **April 19,** **2022**

**Group**: **Group of four or five** (minimum– four members; maximum– five members);

You have to choose your project-partners.

**Submission**: Submit a hard copy of the test plan to me in the class.

On the top page (title page) of your document, write the Name and ID # of the

group members in a table. Also, write your course title and section on title page.

**Plagiarism**: 100% penalty for all the groups involved in copying each other’s works (It includes the

original producer).

**Late Submission**: NOT allowed

**Total marks**: 20% of the final term marks

## Problem Statement:

Suppose your software firm **Datasoft, Inc.** has been awarded a contract to develop software for Dhaka Subway Systems Automated Ticket Issuing System. You are the Test Lead of the project. Based on the requirements and functionalities of the system, you have to develop (write) a software test plan.

General description and specifications of the software application are as follows:

“An automated ticket issuing system sells subway tickets. Users select their destination, and input a credit card and a PIN (personal identification number) number. The subway ticket is issued and their credit card account charged with its cost. When the user presses the start button, a menu display of potential destinations is activated along with a message to the user to select a destination. Once a destination has been selected, users are requested to insert their credit card. Its validity is checked and the user is then requested to input a PIN number. When the credit transaction has been validated, the ticket is issued.

”

The software has the following set of requirements:

* 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 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 transaction using bill(taka) /coin
* The software will support next and previous navigation during ticket purchase process.
* The software will support ticket availability information.
* The software will support information display via web.
* The software will support account management of Dhaka Subway Systems
* The software will use Oracle database server. Dhaka North City Corporation (DNCC) will be responsible for the license fees of Oracle database server.

The major functionalities of the system are as follows:

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

A sample test plan outline is given below. Use it for your project; however **you can customize it**.

**Sample TEST PLAN Outline:**

**1. Test Plan Identifier**

**2. References**

**3. Introduction**

**4. Test Items**

**5. Software risk issues**

**6. Features to be tested**

**7. Features not to be tested**

**8. Approach**

**9. Item Pass/Fail criteria**

**10. Suspension Criteria and Resumption Requirements**

**11. Test Deliverables**

**12. Remaining test tasks**

**13. Environmental needs**

**14. Staffing and Training needs**

**15. Responsibilities**

**16. Schedule**

**17. Planning Risks and Contingencies**

**18. Approvals**

**19. Glossary**

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| **INTERNATIONAL** |
| **UNIVERSITY** |
| **BANGLADESH** |

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| **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 |
| **Semester:** | Spring 2021-22 | **Program:** | B.Sc. in CSE. |

**Group No:**

|  |  |
| --- | --- |
| **Name** | **ID** |
| Rahman,Md Shohanur | 19-39474-1 |
| FAWJIA, JEBA | 19-39815-1 |
| Md. Refatul Islam | 18-37818-2 |
| Hasan,Mehedi | 18-36196-1 |
| Arindam Dey | 18-38458-2 |

# Project: Developing a Test Plan for Dhaka Subway Systems Automated Ticket Issuing System

1. **Test Plan Identifier**: FTP\_DSST\_1.0.0

# 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

# 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

# Test Items

|  |  |
| --- | --- |
| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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 |  |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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 | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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 | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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 | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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 | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

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| Project Name: Automated ticket issuing system | Test Designed By: Md Shohanur Rahman |
| 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. | |

1. **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

# 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

# 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.

# 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.

# 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:

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| --- | --- |
| **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:

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| --- | --- |
| **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 |

1. **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

# 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.

# Responsibilities

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| --- | --- | --- | --- | --- |
| **Name** | **Designation** | **Date** | **Specific responsibilities** | **Signature** |
| JEBA FAWJIA | Test Lead | 01/04/202  2 | 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. | Md Shohanur Rahman |
| ARINDAM DEY | Project Manager | 02/04/202  2 | * 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 |

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|  |  |  | * 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 | 02/04/202  2 | * 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 | 03/04/202  2 | 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 | 05/04/202  2 | * 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 | 04/04/202  2 | 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 |

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| ASIF MAHMUD | Configuration Manager | 03/04/202  2 | 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 | 03/04/202  2 | 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 | 04/04/202  2 | * 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 | 04/04/202  2 | 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 |

1. **Schedule**



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| **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** |

1. **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.

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| --- | --- | --- | --- | --- |
| 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. |

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| --- | --- | --- | --- | --- |
| 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. |

# Approvals:

|  |  |  |
| --- | --- | --- |
| Name & Designation | Date | Sign |
| Fawjia, Jeba, Test Lead, Datasoft, Inc. | 15 April 2022 | Shohan |
| 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 |