



American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

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Section: A

Software Quality Assurance and Testing

Delivery System for E-commerce Web Application

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Software Test Plan

For

<Delivery System for E-commerce Web Application>

Version 1.0 approved

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<16.4.2023>

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Table of Contents

Revision History	3
1. TEST PLAN IDENTIFIER: Delivery System for E-Commerce Web Application RS-MTP01.3	4
2. REFERENCES	4
3. INTRODUCTION	4
Background to the Problem.....	4
Solution to the Problem.....	4
4. REQUEIREMNT SPECIFICATION	5
4.1 System Features	5
4.2 System Quality Attributes.....	6
4.3 System Interface.....	6
UI/UX Design	6
4.4 Project Requirements	10
5. FEATURES NOT TO BE TESTED.....	10
6. TESTING APPROACH.....	10
6.1 Testing Levels.....	10
6.2 Test Tools.....	11
6.3 Meetings.....	14
7. TEST CASES/TEST ITEMS	14
8. ITEM PASS/FAIL CRITERIA	17
9. TEST DELIVERABLES	17
10. STAFFING AND TRAINING NEEDS.....	17
11. RESPONSIBILITIES	18
12. TESTING SCHEDULE	18
13. PLANNING RISKS AND CONTINGENCIES	19
14. APROVALS	19

Revision History

Revision	Date	Updated by	Update Comments
0.1	2023.08.06	Tanvir Rahman	First Draft
0.2	2023.08.07	Sawon Mursalin	Second Draft
0.3	2023.08.08	Suraiya Akter	Third Draft
0.4	2023.08.09	Anika Ferdous	Fourth Draft
0.5	2023.08.10	Sawon Mursalin	Fifth Draft
0.6	2023.08.11	Tanvir Rahman	Sixth Draft
0.7	2023.08.12	Sawon Mursalin	Seventh Draft
0.8	2023.08.13	Anika Ferdous	Eighth Draft
0.9	2023.08.15	Tanvir Rahman	Final Draft

1. TEST PLAN IDENTIFIER: Delivery System for E-Commerce Web Application RS-MTP01.3

2. REFERENCES

- Software Requirement Specification (SRS) Document
- <https://www.daraz.com.bd>

3. INTRODUCTION

Background to the Problem

Electronic commerce, commonly known as e-commerce, is the buying and selling products or services over an electronic system such as the Internet. As our world is being developed daily, shop facilities are turning their products into e-commerce. Multivendor e-commerce is a place where multiple sellers can sell their products. But the problem occurs when a customer orders different product from different vendors. For example, A customer wants to buy four or more products, but their desired outcomes are unavailable at the same vendor, so they must order them from a different vendor. So, the first problem is if they called it from another vendor for each product, 's delivery time is not exact, and another big problem is the delivery charge. The vendor charges customers for each delivery. For example: if the delivery charge is 80tk and a customer buys three products from a different vendor, they must pay an extra 240tk. So, if it is considered from a financial point of view, it is a complete loss for a consumer. Therefore, this problem wastes a consumer's money and time

Solution to the Problem

To address the issue above, we'll construct a modular system. The system will serve as an intermediary medium between the buyer and the seller. When a customer purchase product from a multivendor e-commerce site, the order goes straight to the seller. Our technology will review the customer's order. It will verify how many items the customer has purchased and from which supplier's customer bought the product. If the customer places an order with only one vendor and that seller has the items in stock, the system will naturally take the order with that seller.

However, if a consumer buys items from numerous vendors, our system will analyze which seller possesses all products and will notify that seller. The system will determine which supplier can deliver the goods quickly and at the lowest price and execute the order with the relevant seller. Customers can purchase stuff from a wide range of categories. After that, the system will pick which type the product belongs to. It will check whether any goods from the same class have already been ordered. Then the vendors in the category would receive notifications. Based on their response, it will then purchase and arrange for the product to be delivered quickly to the e-commerce company's pick-up location. The products will subsequently be provided to clients from the pick-up site.

4. REQUIREMENT SPECIFICATION

4.1 System Features

Functional requirements

1. System Sign Up

- 1.1 The customer must have a valid email id to create an account
- 1.2 Password must be unique and at least 6 characters with symbols and numerical.
- 1.3 If the email has already been registered for an account, then it will show that the user already has an account.
- 1.4 After registration it will take the user to the Sign In page

Priority Level: High

Precondition: The user must have a valid email address.

2. Customer Order:

Functional Requirements

- 2.1 The user must choose the products that he wants to purchase.
- 2.2 The user must verify the products he has chosen.
- 2.3 Following user confirmation of the order, the modular analysis system will be turned on.

Priority Level: High

Precondition: Order confirmation is required from the user.

3. Ordered Product Analysis

Functional Requirements

- 3.1 First, we need to analyze the number of products ordered.
- 3.2 Next, product categories are analyzed.
- 3.3 Then the number of suppliers ordered by the user is analyzed.
- 3.4 Checks whether the product belongs to the provider.
- 3.5 If not found in a single supplier, the number of suppliers that have all products in stock is analyzed. Then send notifications to users about the provider.
- 3.6 If not found, find the vendor with the most products and find the distance from other vendors with the remaining products.
- 3.7 Then select a minimum distance and notify the user. After contacting us, we will place an order with your consent.

Priority Level: High

Precondition: Orders must be placed and the customer must approve the arranged supplier.

4.2 System Quality Attributes

QA 1 - Usability: After placing an order, the scan will start and it will take 1 minute to 2 minutes to display the desired supplier list.

Precondition: The user must confirm the item

QA 2 – Interoperability: The system will share the login information with google since it needs google authentication to function.

Precondition: The user must have a mail account

QA 3- Portability: It can be accessed from any platform because it is a web-based program.

Precondition: None

QA 4- Integrity: The system integrity is essential because it has been designed for e-commerce platforms in which there will be requisite anonymity during financial transactions.

Precondition: Checkout

QA 5- Readability: It is important to show current price perfectly as in one product lots of customer can buy. So, it is critical to determine whether the system is strong enough to with stand any condition.

Precondition: None

QA 6-Installation: There won't be any time-consuming downloads or installations because it is web-based.

Precondition: None

4.3 System Interface

UI/UX Design

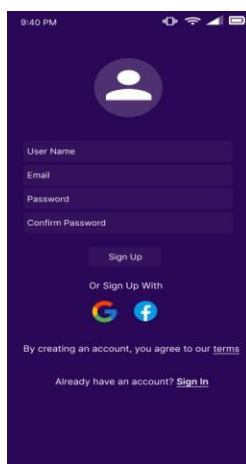


Figure 1 Login page

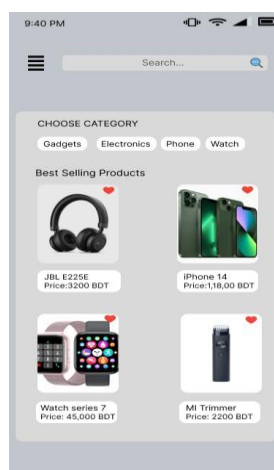


Figure 3 order page

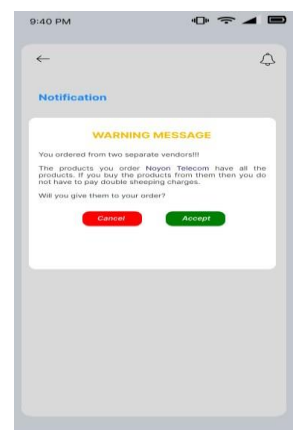
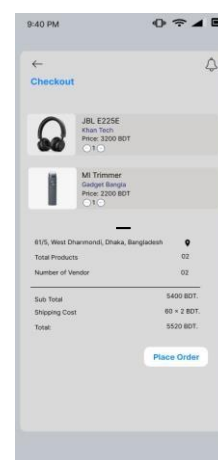
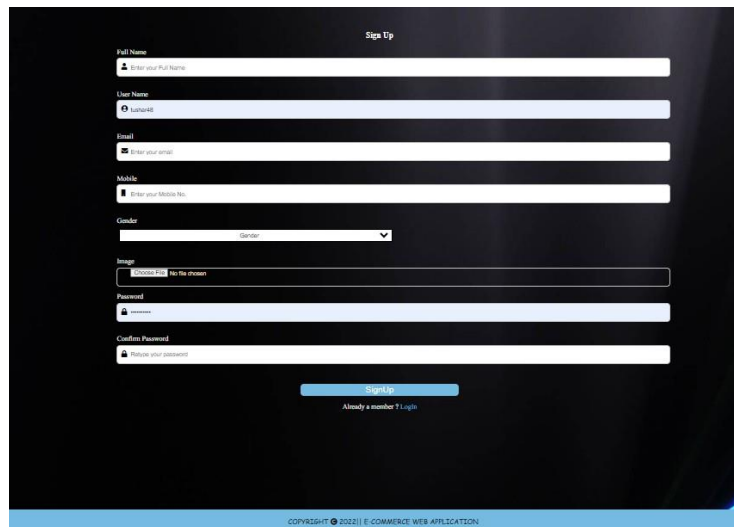


Figure 2.1.3 Notification



Sign Up

Full Name

User Name

Email

Mobile

Gender

Image

Password

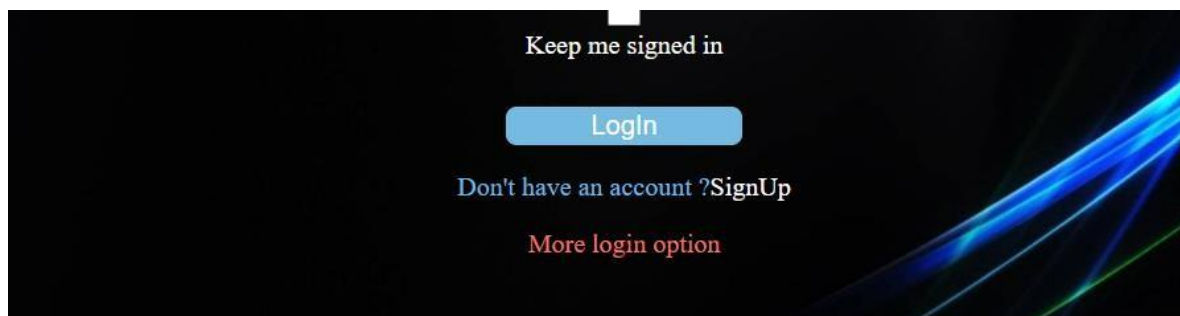
Confirm Password

[Sign Up](#)

[Already a member ? Login](#)

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Figure 4 Registration for Sign In




Keep me signed in

[Login](#)

Don't have an account ? [Sign Up](#)

[More login option](#)

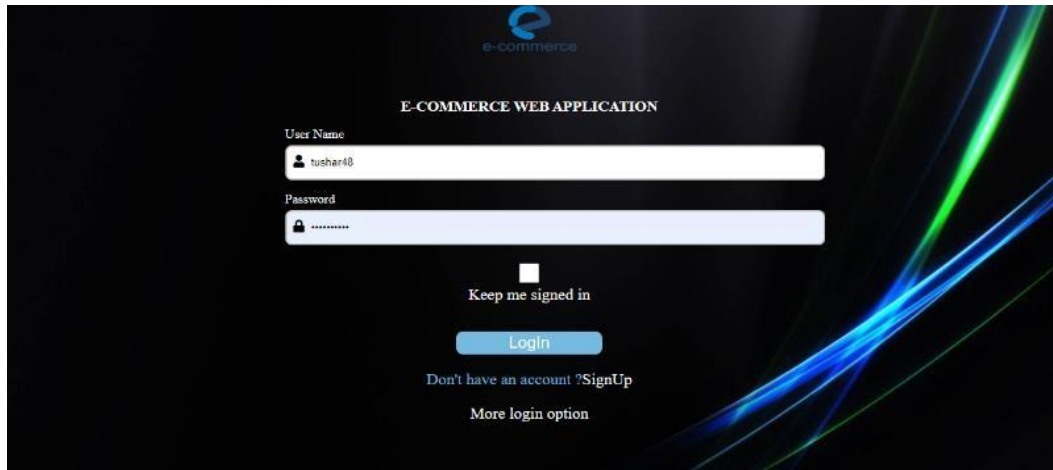
Figure 5 this option for different role login



User LogIn Admin Login Seller LogIn DeliveryMan LogIn

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Figure 6 Fig4.3.1 Home Page



e-commerce

E-COMMERCE WEB APPLICATION

User Name

Password

☐ Keep me signed in

[Login](#)

[Don't have an account ?SignUp](#)

[More login option](#)

Fig4.3.2 Customer Login

Purchase_Token	User Name	Product Name	Price	Qunatity	Total	Date	Location	Delivery Status	Delivery Time	DeliveryMan	Operation
16	rakib007	SAMSUNG Galaxy Watch 4 44mm-green	22500	2	45000	2022-11-04	Kamal Khan Road,Mirpur-14	delivered	2022-12-02 14:15:07	sayef68	Delete Purchase Items
18	rakib007	Apple Watch Series 6 Silver	60850	1	60850	2022-11-05	Dhaka,Mirpur-14	delivered	2022-12-02 14:28:20	sayef68	Delete Purchase Items
19	rakib007	MSI Optix MAG245R2 23.8	24999	1	24999	2022-11-05	Dhaka,Mirpur-14	delivered	2022-12-02 14:28:55	sayef68	Delete Purchase Items
20	tushar48	Apple Watch Series 6 Silver	60850	1	60850	2022-11-05	Mirpur-10, Dhaka	delivered	2022-12-02 14:10:20	sayef68	Delete Purchase Items
21	rakib007	ASRock X570S PG Riptide AMD AM4 ATX Motherboard	22800	1	22800	2022-11-06	Kuril,Dhaka	delivered	2022-12-03 03:56:49	rafi84	Delete Purchase Items

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Fig 4.3.3 Order Analysis

[Order Details](#)

Item Name	Quantity	Price	Total	Action
Razer Book 13 Core i7 11th Gen 512GB SSD 13.4	1	190000	190,000.00	Remove
Total			\$ 190,000.00	<input type="text" value="Enter Delivery location"/>

[Confirm Purchase](#)

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Fig 4.3.4 Order Confirmation



Fig 4.3.5 Order Confirmation Notification

Purchase Token

1

Delivered

Products Details

Purchase_Token	User Name	Product Name	Qunatity	Total	Date	Location	Delivery Status	Delivery Time	DeliveryMan
16	rakib007	SAMSUNG Galaxy Watch 4 44mm-green	2	45000	2022-11-04	Kamal Khan Road,Mirpur-14	delivered	2022-12-02 14:15:07	sayef68
18	rakib007	Apple Watch Series 6 Silver	1	60850	2022-	Dhaka Mirpur-14	delivered	2022-12-02	sayef68

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4.3.6 Delivery man pickup order

Welcome!! sayef68 [Home](#) [Profile](#) [Log Out](#)

Purchase Token

35

Delivered

Products Details

Purchase_Token	User Name	Product Name	Qunatity	Total	Date	Location	Delivery Status	Delivery Time	DeliveryMan
16	rakib007	SAMSUNG Galaxy Watch 4 44mm-green	2	45000	2022-11-04	Kamal Khan Road,Mirpur-14	delivered	2022-12-02 14:15:07	sayef68
18	rakib007	Apple Watch Series 6 Silver	1	60850	2022-	Dhaka Mirpur-14	delivered	2022-12-02	sayef68

Figure 4.3.7 Delivery man confirmed by purchase token



Figure 4.3.8 Delivery Successfully Notification

4.4 Project Requirements

- Time: This web-based application take time about 3 months total 90 days to complete.
- Number of Developer :4
- The final size of this web-based application will not be more than 300-400 MB.
- HTML, CSS, PHP, JavaScript, JQuery and Ajax will be used to build this web application.

Budget estimation

Developer Salary: Employee Salary per month=100000 Taka

Total Salary for 4 person 1 month=4*100000= 400000 Taka

Total salary during project=400000*3= 1200000Taka

Requirement analysis: Salary of 1 requirement engineer 1 month=70000 Taka

Total salary 70000*3=210000 Taka

Transport Cost: 50000 Taka (Approximately)

Hardware Expense :40000 Taka (Approximately)

Project manager: Salary of 1 Project Manager per month 120000 Taka

Total salary during the project 120000*3 =360000 Taka

Accountant's salary: Salary of 1 Accountants salary per month 40000 Taka

Total salary during the project 3*40000=120000 Taka

Total expense = 1200000 + 210000 + 50000 + 40000 + 360000 +120000=1,980,000 Taka

Profit: 30% of total expense = 1,980,000*30%= 594,000 Taka

Total Budget of Project will be: 1,980,000 + 594,000= 2,574,000 Taka

5. FEATURES NOT TO BE TESTED

- Registration form was taken from the previous project. So, this feature was tested previously. This feature does not need to be tested.
- “About us” this feature is not tested.

6. TESTING APPROACH

6.1 Testing Levels

Unit, SYSTEM/INTEGRATION Testing, and Acceptance testing will be included in the testing for the web-based project. Bottom-up integration testing must require at least one full-time independent test tester. However, due to budget and schedule constraints imposed, the majority of testing will be performed by the Test Manager with support from the Development Teams.

Unit testing is a testing method that uses all independent modules tested to determine if there are any problems caused by the developer himself. Before unit tests can be accepted and passed to

testers, the programmer must provide proof of unit tests list of test cases, sample output, and error information. Test participants will also get all information about unit tests.

INTEGRATION Testing: Then, in the second step, we will do the integration. During this testing, we will ensure that all software components are logically integrated, tested as a group, and functioning properly. This level of testing seeks to identify weaknesses in how different software components interact when they are combined. In this step, we will implement "bottom-up integration testing. Bottom-up Testing is a technique for incremental integration testing where two or more modules are connected or integrated by moving upward via the control flow of the architecture structure from bottom to top. Bottom-up testing is an approach to testing that is user-friendly and speeds up software development. High success rates and lasting effects are produced by this kind of testing.

SYSTEM Testing: When integration testing is completed, System testing should be performed to ensure all the modules are working properly together after connecting them as a whole software. This should also be done by dedicated testing team. It can be considered as black-box testing as it is not required to know what is inside those modules and how they are working. We test the system as a whole and tester should be aware of the requirements and real-time usage of the application. Here also test strategy must be ready and critical modules should be identified on a priority basis before starting system. End-to-end testing must be done to verify interaction between all the components and external applications. If system testing is done properly, mitigating and maintenance will be a lot easier later. Low priority bugs can be left to be tested at acceptance testing. System testing must check all the quality attributes of the software to ensure maximum quality of the product.

ACCEPTANCE TESTING: The final stage of software testing is acceptance testing. It is done by the real-time users of that particular software. A beta version of the software is released in the market. Users use the software, and based on their experience, they submit a review. Bugs are resolved as quickly as possible. Acceptance testing validates the effort of both the testing and developer teams and reflects the quality of the software overall.

6.2 Test Tools

For the project required testing tools we are using "Selenium IDE"

SELENIUM IDE: Selenium IDE is an automation Testing tools. Selenium automates browser-based web applications. Firstly, open Selenium Ide from browser extension. Then open our project and copy the project URL provide it in selenium playback base URL. Then start recording our full project testing. After that stop recording and click RUN ALL TEST then selenium automation testing started and detect the bugs of this project.

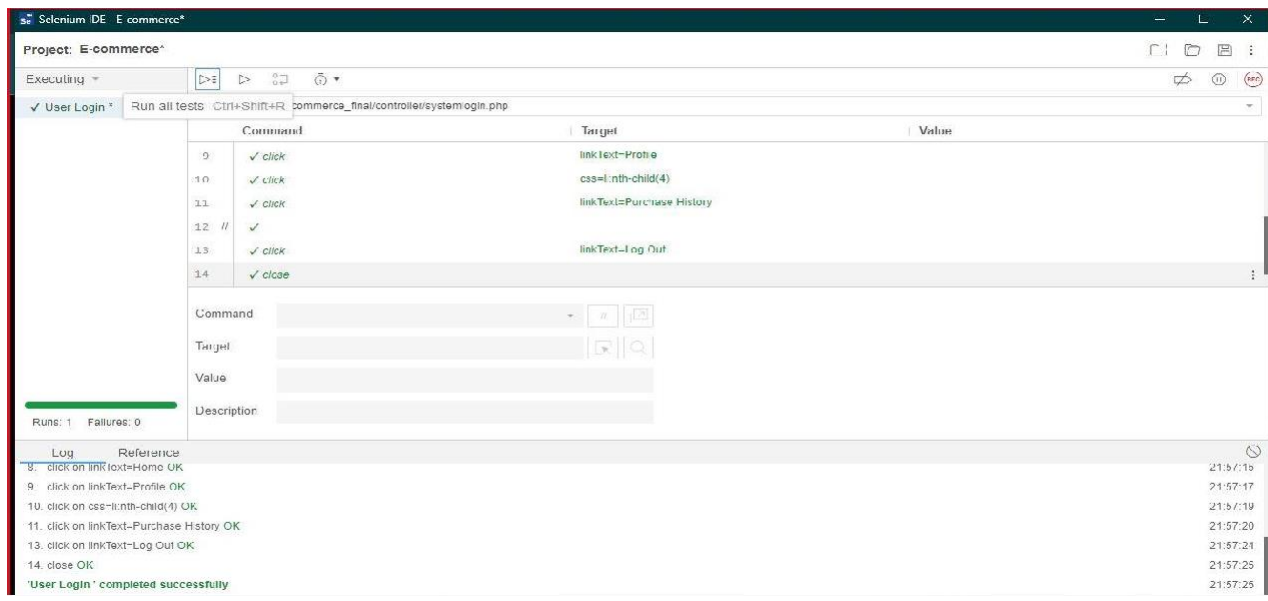


Fig.1- User Login

For testing, we must include the User login page's URL link. Then select the "record" option, and a new window will appear. Then we have to close the window. Once more, the recorder must be stopped before the current test may be run. Here, the testing of our User Login page has been successful.

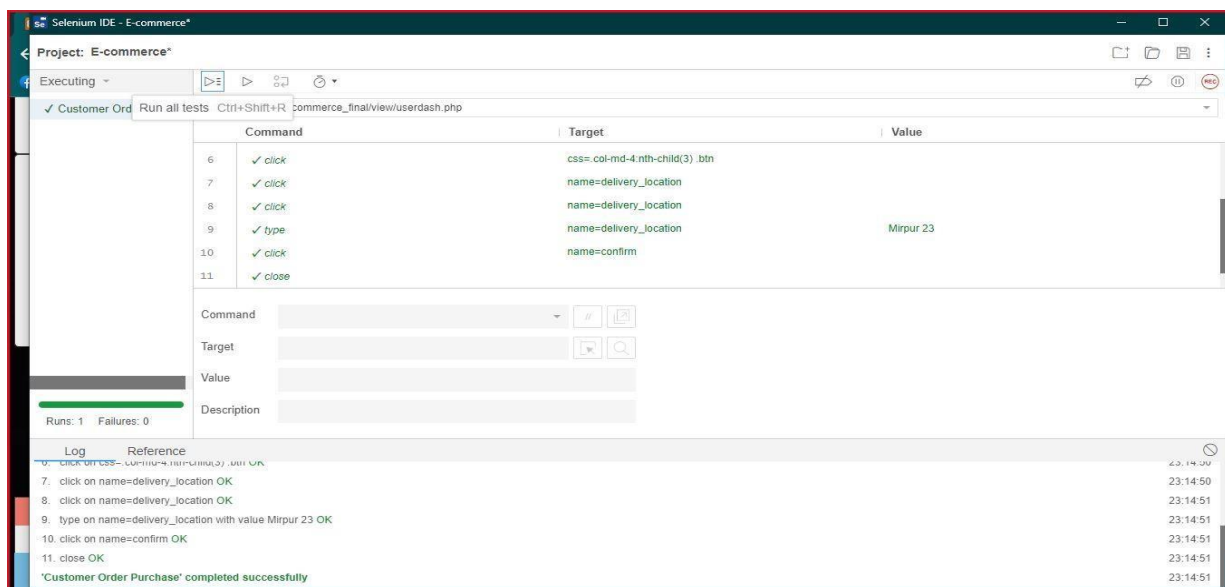


Fig.2- Customer Order Purchase.

For testing, we must include the Customer order purchase page's URL link. Then select the "record" option, and a new window will appear. Then we have to add some order then add to cart the product and select the location and close the window. Once more, the recorder must be stopped before the current test may be run. Here, the testing of Customer order Purchase page has been successful.

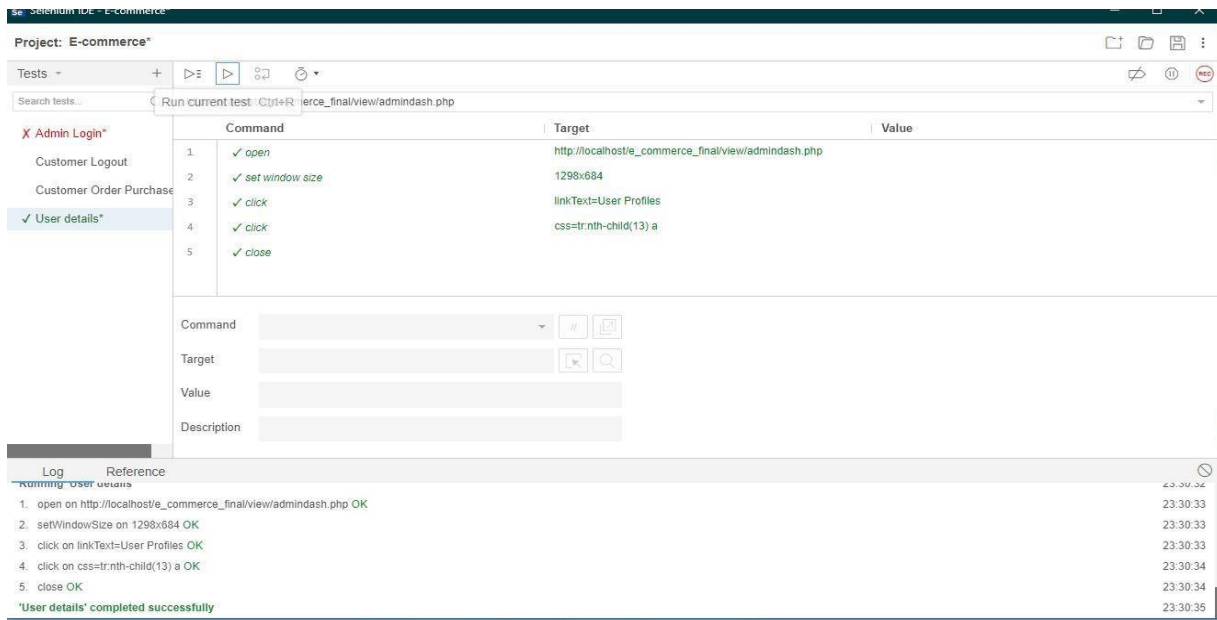


Fig.3- User details control in Admin

For testing, we must include the User Details page's URL link. Then select the "record" option, and a new window will appear. Then we have to control the user all access, also delete user details and close the window. Once more, the recorder must be stopped before the current test may be run. Here, the testing of user details page has been successful.

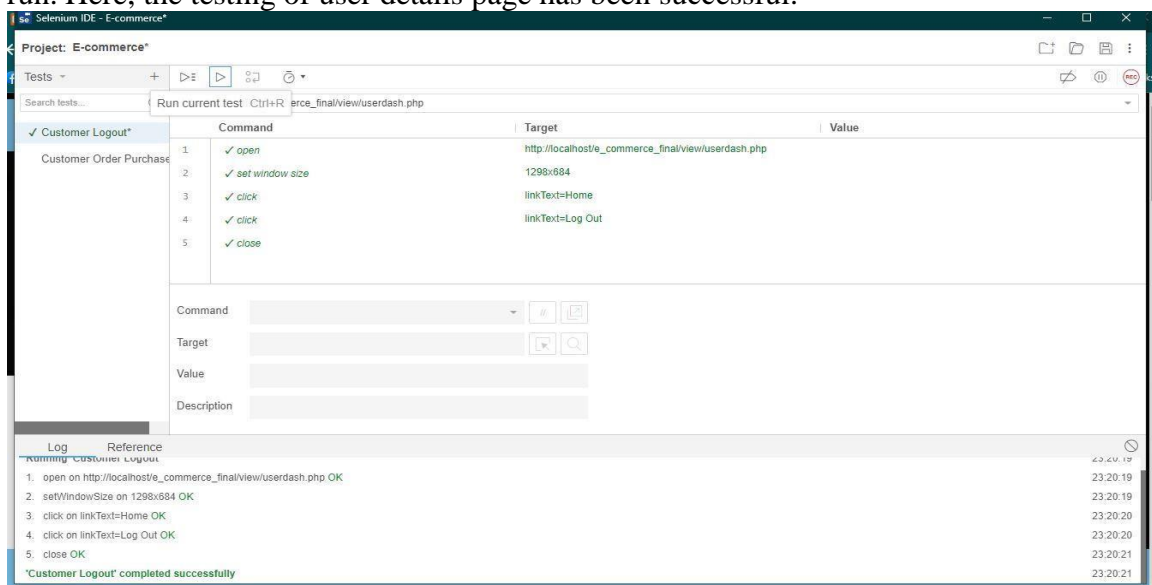


Fig.4- Customer Logout

For testing, we must include the Customer logout page's URL link. Then select the "record" option, and a new window will appear. Then we have to logout the customer login page and close the window. Once more, the recorder must be stopped before the current test may be run. Here, the testing of Customer logout page has been successful.

6.3 Meetings

The test team will meet once in every week to evaluate progress to date and to identify error trends and problems as early as possible. The test team leader will meet with development and the project manager once every two weeks as well. These two meetings will be scheduled on different weeks. Additional meetings can be called as required for emergency situations.

7. TEST CASES/TEST ITEMS

Test Case 1:

Project Name: Delivery System for E-Commerce		Test Designed by: Tanvir Rahman		
Test Case ID: ECOM01		Test Designed date: 2023.08.06		
Test Priority: High		Test Executed by: Tanvir Rahman		
Module Name: Customer Sign-Up Session		Test Execution date: 2023.08.07		
Test Title: User name, email, and Password Register				
Description: Test website sign-up page.				
Precondition (If any): The user must have a valid Gmail Address or Facebook Account				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the App 2. Enter the username 3. Enter the password and reconfirm it 4. Click to sign up	Username: tushar48 Password:tushar1234 Confirm Password: tushar1234	Users should be getting access to the Sign In Page	SignIn Successfully	Pass Pass Pass Pass
Post Condition: User Id has been validated with the database and sign-up should be successfully done.				

Test Case 2:

Project Name: Delivery System for E-Commerce		Test Designed by: Sawon Mursalin		
Test Case ID: ECOM02		Test Designed date: 2023.08.07		
Test Priority: High		Test Executed by: Sawon Mursalin		
Module Name: Customer Order Analysis		Test Execution date: 2023.08.08		
Test Title: Verify the order confirmation from the user’s cart				
Description: Testing the order dashboard page				
Precondition (If any): Testing the order dashboard page				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Select the items 2. Select the quantity 3. Click Confirm	Item: 1.Item1 Quantity: 1 2.Item2 Quantity: 2	The user should be successful in confirming the order	Confirm Order Successfully	Pass Pass Pass
Post Condition: Should be successful to get all the items selected and proceed to confirmation				

Test Case 3:

Project Name: Delivery System for E-Commerce		Test Designed by: Suraiya Akter		
Test Case ID: ECOM03		Test Designed date: 2023.08.08		
Test Priority: High		Test Executed by: Suraiya Akter		
Module Name: Customer Order Analysis Activation		Test Execution date: 2023.08.09		
Test Title: Order analysis system activation				
Description: Test Order analysis system				
Precondition (If any): Order must be placed and the customer must approve the sorted vendor.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
Searching for vendors	Item: 1.Item1 Quantity: 1 2.Item2 Quantity: 2	Orders should be thoroughly analyzed and the site should be sending notifications to the user about the vendor.	Sending Notification Successfully	Pass
Post Condition: Should be successful to get all the items selected and proceed to confirmation.				

Test Case 4:

Project Name: Delivery System for E-Commerce		Test Designed by: Anika Ferdous		
Test Case ID: ECOM04		Test Designed date: 2023.08.09		
Test Priority: High		Test Executed by: Anika Ferdous		
Module Name: Customer Order Confirmation		Test Execution date: 2023.08.10		
Test Title: Verification of Customer Order confirmation.				
Description: Testing the checkout page of the site.				
Precondition (If any): Orders should be confirmed and analyzed.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click the notification 2. Click “Accept” to get the order placed	Vendor Name: Noyon Telecom. Stock product: 02	The order should be confirmed and proceed to check out from the order analysis dashboard.	Order Checkout Successfully	Pass Pass
Post Condition: The user should be successful to proceed from the order analysis dashboard.				

Test Case 5:

Project Name: Delivery System for E-Commerce		Test Designed by: Anika Ferdous		
Test Case ID: ECOM05		Test Designed date: 2023.08.09		
Test Priority: High		Test Executed by: Anika Ferdous		
Module Name: Order Delivery Confirmation		Test Execution date: 2023.08.10		
Test Title: Verification of Customer Order confirmation.				
Description: Testing the Delivery man pickup order				
Precondition (If any): Orders should be confirmed and analyzed.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Input the purchase token Number 2. Click the Delivered Button after delivery	Vendor Name: Telecom. Stock product: 35	The order should be delivered and Delivery input purchase token number	Get Delivered Notification Successfully	Pass Pass
Post Condition: The Delivery Man should be successful to proceed from the order analysis dashboard.				

8. ITEM PASS/FAIL CRITERIA

The main objective of this section is to describe the PASS/FAIL criteria for the tests that are a part of this project. Any system or unit receiving a score of less than 90% will be subject to the failure criteria, and any component, unit, system, or integrated test item receiving a score of 90% to 95% will be considered to meet the pass criterion.

9. TEST DELIVERABLES

Test Deliverables are documents that are given to the stakeholders when the software is being developed. It contains a list of documents, tools, and other equipment that must be created, provided, and maintained to support testing activities in a project.

- Unit testing findings and results will be properly documented. To stay on track, a continuous progress report is required.
- Audience for acceptance tests will be carefully selected, as wrong users can lead to incorrect results and feedback. It is similar to a contract for development team release and software delivery.
- During the time of integration testing, new modules are integrated into the system. And these records needed to be kept for further checking.
- Project management tools such as Jira, Trello, and others can be used to keep track of the progress report.
- After completing each of the testing phase, the details report will be generated containing the test results.

10. STAFFING AND TRAINING NEEDS

The aim of this staffing strategy is to raise the possibility that the project will have enough skilled personnel to enable its effective completion. Proper training and staffing enable employees to think outside the box and also increase efficiency, which is very important for product development. We need at least one full-time tester during the system/integration and acceptance testing phases of our project. A dedicated tester will work on the project fulltime for the first four months. When there isn't enough time for a dedicated tester, the test manager steps in. Developers and testers will need training on the basics of our project's user interface. Before the project is approved, operations staff must complete extensive training in this project communication procedure. As we will be using Selenium, we have to bring all necessary tools to support the testing team, and necessary training is also needed to be provided if it's necessary.

11. RESPONSIBILITIES

	TM	PM	Dev Team	Test Team	Client
Acceptance test Documentation & Execution	X	X		X	X
System/Integration test Documentation & Exec.	X		X	X	
Unit Test documentation & execution	X		X	X	
System Design Reviews	X	X	X	X	X
Detail Design Reviews	X	X	X	X	
Test procedures and rules	X	X	X	X	
Screen & Report prototypes reviews			X	X	X
Change Control and regression testing	X	X	X	X	X

12. TESTING SCHEDULE

Time has been allocated within the project plan for the following testing activities. The specific dates and times for each activity are defined in the project plan timeline. The persons required for each process are detailed in the project timeline and plan as well. Coordination of the personnel required for each task, test team, development team, management and customer will be handled by the project manager in conjunction with the development and test team leaders. Schedule must be done using any PM tool.

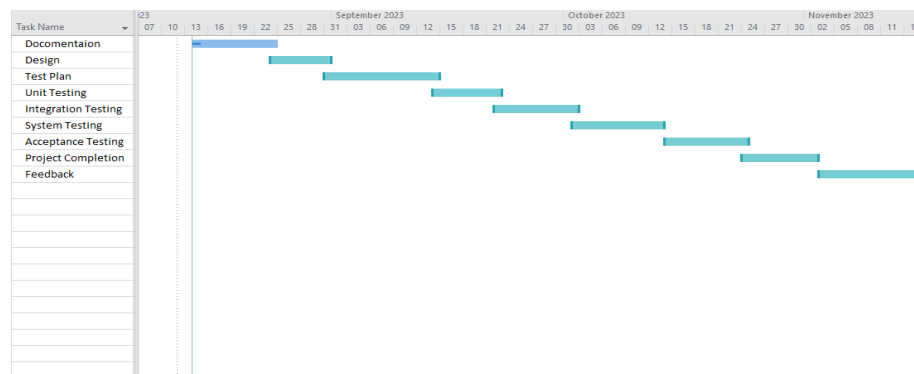


Fig 12.1- Project plan using M.S Project Tool

13. PLANNING RISKS AND CONTINGENCIES

S/N	Risk Description	Probability	Impact	Mitigation Plan
1	Unrealistic time Estimate	50%	Significant	Take multiple estimates
2	Experienced Staff Shortage	80%	Crucial	Ensure proper facilities for staff
3	Lack of proper equipment	60%	Significant	Keep backup money
4	Users Larger than expected	40%	Significant	Increase the number of servers
5	Product Consistency	50%	Significant	Keep on updating and adding a new feature

14. APROVALS

Project Sponsor -	
Development Management -	
EDI Project Manager -	
RS Test Manager -	
RS Development Team Manager -	
Reassigned Sales -	
Order Entity EDI Team Manager-	