

American International University-Bangladesh (AIUB)

Department of Computer Science Faculty of Science & Technology (FST) Summer 21 22

Section: B
Software Quality Assurance and Testing

Student Management System

A Report submitted By

SN	Student Name	Student ID
1	Md. Ashik Mahmud	19-40958-2
2	Shaik Ahmed Sharuk	19-40562-1
3	Md. Shakhawat Hossain Khan	14-26495-2
4	Md. Mostofa Nowazish Nafi	19-40567-1

Under the supervision of

Abhijit Bhowmik

Associate Professor and Special Assistant of OSA,
Department of Computer Science
Faculty of Science and Technology
American International University-Bangladesh (AIUB)

Software Test Plan

for Student Management System

Version 1.0 approved

Prepared by <Md.Ashik Mahmud, Shaik Ahmed Sharuk, Md. Mostofa Nowaizish Nafi, Md. Shakhawat Hossain Khan, >

< American International University-Bangladesh (AIUB)>

<15-Aug-22>

Checked By Industry Personnel

Name: Asef Hossain Khan

Designation: Software Engineer

Company: BJIT Ltd.

Sign:

ign:

Date: 16/08/22

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Revision History

Revision	Date	Updated by	Update Comments
0.1	2022.08.11	Md.Ashik Mahmud	First Draft
0.2	2022.08.12	Md. Shakhawat Hossain Khan	Second Draft
0.3	2022.08.13	Shaik Ahmed Sharuk	Third Draft
0.4	2022.08.14	Md. Mostofa Nowazish Nafi	Fourth Draft

1. TEST PLAN IDENTIFIER: Student Management System

2. REFERENCES

http://www.educlerk.com

3. INTRODUCTION

Background to the Problem

- Student Management is becoming a basic necessity in education in modern-day age and it is to automate all function performed on a daily basis in the School, College and University. With the aid of this technology, we can quickly compile all the necessary data for management. Main Purpose is to create software which will manage of these different modules.
- Our selected Company is Educlerk Bd. The system has the capacity to store and dynamically maintain student, faculty, and teacher details. The suggested approach offers the simplest way to handle all areas of student and university management. The software help explore all the activities happening inside the school/college/university which students do not know about.

Solution to the Problem

- Our System Provide the activities of students and teachers. Using this system, user can manage student details, student grade information, Registration, Class schedule, Notes, Payment etc. We are ensuring the student information security. Our key services are
 - → Result and Academic Transcript
 - → Accounts
 - → Online Admission
 - → Messaging System
 - → Students/Parents Login
 - → Student Manager

- We are passionate that we want to provide firs-rate service. Because customer happiness is our top goal, we also concentrate on our training sections, operational management sections, professional skill areas, and recruitment sections.
- Our company Educlerk offers to store and manage student, instructor, and teacher information. The cloud-based Educlerk software was created by Arena Phone Bd Ltd. It includes mobile apps and SMS service. Educlerk is offered without charge to educational institutions. It enables administrators and educators to properly carry out their everyday tasks and keep an eye on a number of other institutional operations. Additionally, parents are kept informed of their children's development.

4. REQUEIRMENT SPECIFICATION

4.1 System Features

1. Software Features

Functional Requirements

- 1.1 The user login into the software with their username and password.
- 1.2 If the login successful the main home page in this software will be displayed.
- 1.3 If the user forgets the username and password so they can be reset password using their valid email address and phone number.
- 1.4 If the user input 3 times wrong password, the system will block the user account login for half one hour.

Priority level: High

Precondition: User have valid username and password.

Cross-references: None

2. Admin

Functional Requirements

- 2.1 Monitoring user information by maintaining accurate database of all ID.
- 2.2 If the user is valid based on his/her information then "activate" card otherwise "reject" and report to the user.
- 2.3 Admin will able to see the payment status. If paid then allow to request otherwise report to the user for payment. After reporting 2 times if user doesn't pay then admin can deactivate the user ID.

Priority level: High

Precondition: Admin must have the rights to access the whole system.

Cross-references: 1.1, 1.2, 3.1

3. Accounts

Functional Requirements

- 3.1 The payment transaction will be done using user ID.
- 3.2 The payment slip can be gotten from the account department using ID.
- 3.3 Then the payment information will show in the portal.

Priority level: High

Precondition: Payment system must be pay using user ID.

Cross-references: 2.1, 2.2, 2.3

4. Online Admission

Functional Requirements

- 4.1 User can collect Admission paper from School/College Portal.
- 4.2 Admission result can publish with the system.
- 4.3 User can easily Submit their information through the site.

Priority level: Medium

Precondition: Must be in logged in condition

Cross-references: 4.1, 6.2

5. Search

Functional Requirements

- 5.1 User can search for what service he/she expecting.
- 5.2 System gives user review of their expecting service.
- 5.3 User can also search for the information (Admission, Cost and Other details).

Priority level: Medium

Precondition: Must be in logged in condition

Cross-references: 5.1, 6.2

6. Review

Functional Requirements

- 6.1 User can give review from the customer by the basis of their service.
- 6.2 Customer can see the review of service provider in their details option.
- 6.3 User can give a comment in review comment section.

Priority level: Medium

Precondition: Have a valid account

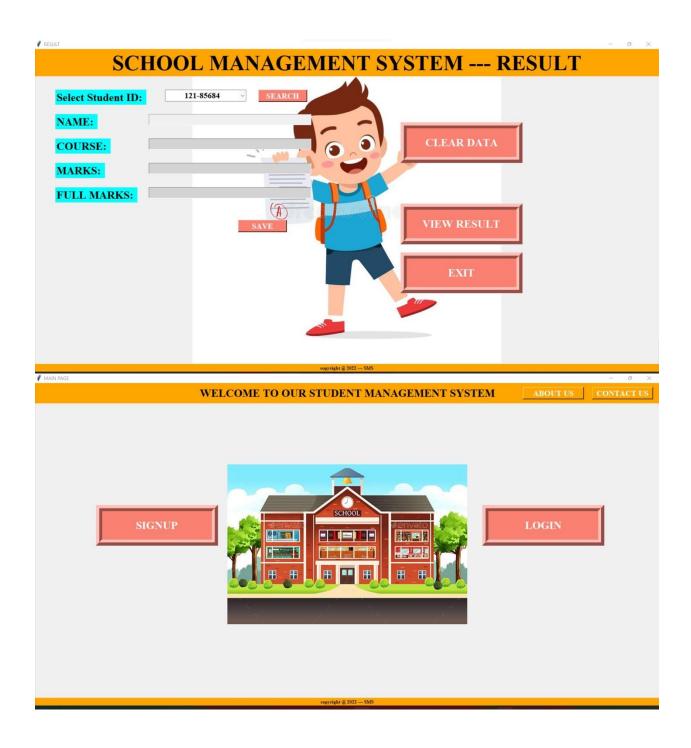
Cross-references: 4.2

4.2 System Quality Attributes

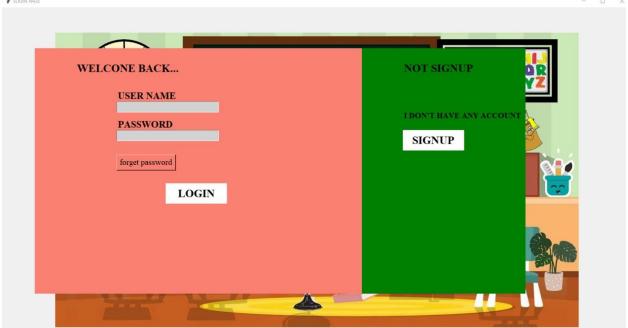
There are some quality attributes that are very important to ensure the quality of a software.

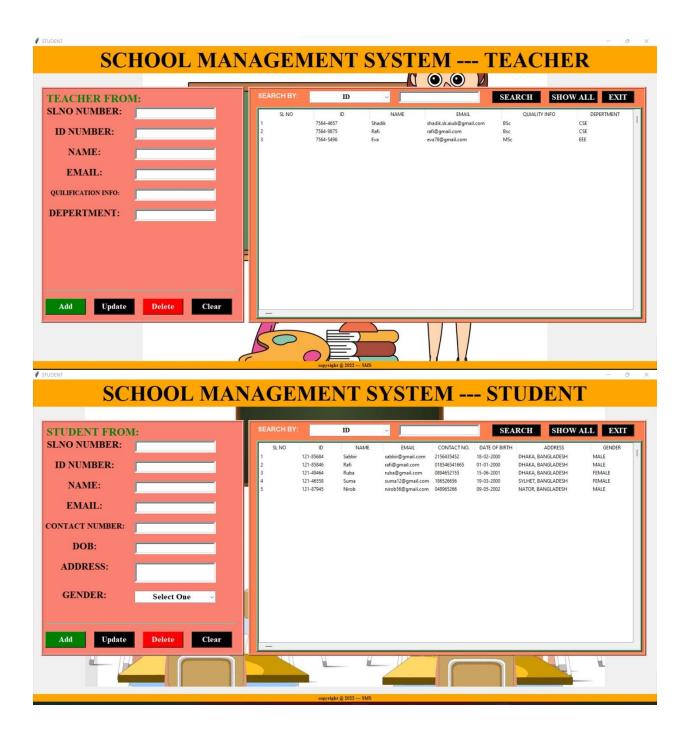
- o **Usability:** Any skilled user should be able to register and login to the system.
- o **Efficiency:** Each and every functional need must be fulfilled.
- o **Portability:** This will be capable of running properly on all the devices.
- Maintainability: If any issue locates or detect in the system then it will be possible to fix it
- Correctness: Mentioned all features will be completed according to the preferences of the patients.
- o **Functionality:** Will display available slot list, their details and it will also show if they are parking or not.
- o **Accessibility:** It's a web-based software so it will be accessible from anywhere on the Internet.
- o **Readability:** It's critical to rely on appointment software to properly and containing accurate scheduling demands. It is so important to check to see if the system is durable enough to sustain any situation. So, regular counting on parking slot.
- o **Reliability:** All features will perform in various working environments or devices. o Flexibility: Will flexible enough to modify in terms of any needs.
- Integrity/Security: System integrity or security should be sufficient to prevent unauthorized access to system functions, information loss, and virus infection of software, as well as to protect the privacy of data entered into the system. Actually, Integrity comes with security

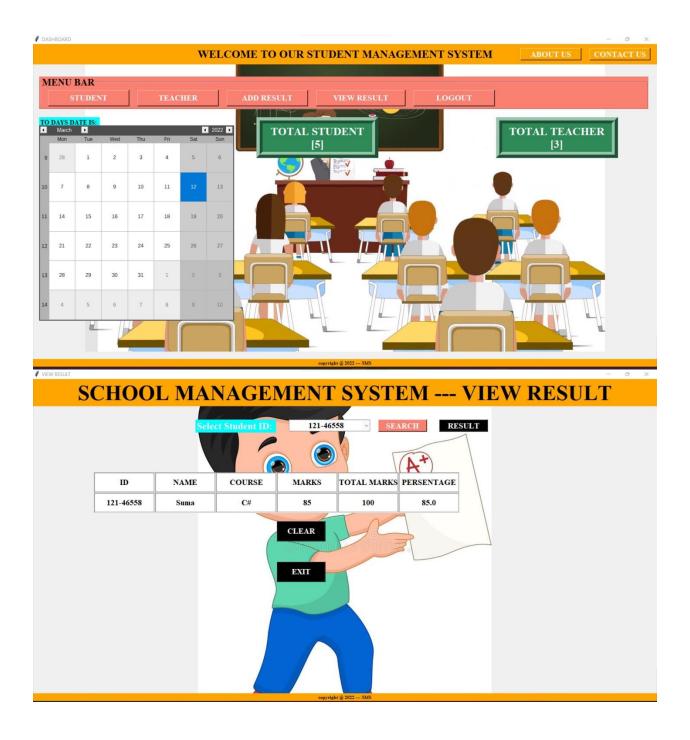
4.3 System Interface

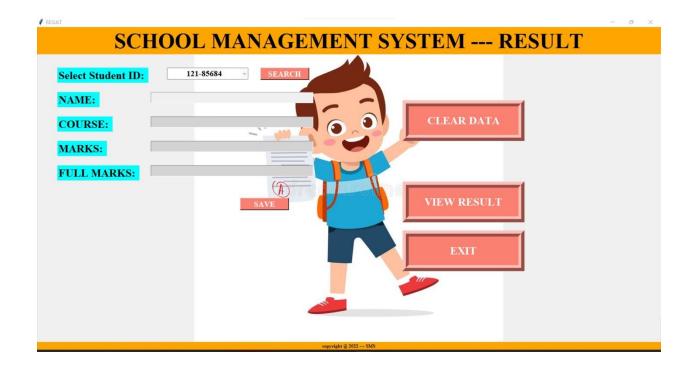












4.4 Project Requirements

- Total budget 1,00,000
- Total Development Time 4 months
- In our application we will use PHP programming language and Laravel framework and we will use MySQL database in backend.
- Total size of our project must be 500-900MB.

5. FEATURES NOT TO BE TESTED

The following is a list of the areas that will not be specifically addressed. All testing in these areas will be indirect as a result of other testing efforts. For example:

- How to perform our application under low network that will not be tested.
- External functionality over the program is not supported by this system. As a result, application to server testing should be avoided.
- Hardware

6. TESTING APPROACH

6.1 Testing Levels

The testing for the SMS project will consist of Unit, System/Integration (combined) and Acceptance test levels. For system/integration testing, it is intended that there would be at least one independent test professional working full-time. However, due to financial limitations and fixed schedules, the test manager will conduct the majority of testing with input from the development teams.

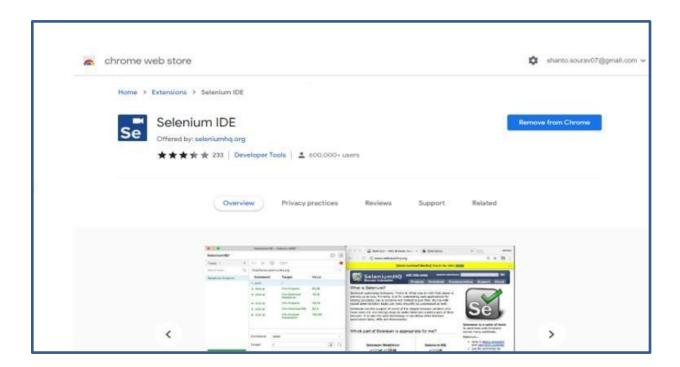
- UNIT Test: The fundamental level of testing is the unit test. After creating each feature, a developer will verify that it functions as intended inside the component design. Because they are the ones who understand how these specific features functioned and because they are familiar with internal logic, program structure, etc., developers will perform this testing. In our application, the developer will conduct UNIT testing, and the development team leader will provide their approval. Before unit testing is accepted and handed off to the tester, the programmer must show the team leader proof of it (test case list, sample output, data printouts, defect information). The test person will also receive access to all unit test data.
- Integration Test: The second level of testing is integration testing. the present level. The modules or features will be linked together one at a time. The leader of our development team will oversee this testing and determine whether or not the data transmission between these modules is accurate. At this level, we'll use strategies like the sandwich strategy, big bang approach, bottom-up integration, and top-down integration.
- System Test: Our quality assurance team will carry out this testing level once the unit test and integration test have been completed. Our quality team will check the complete system against the customer's specification once our full program has been developed. These testing methods are known as black boxes. Various testing methods will have been used at this testing level. In addition to performing functional testing, our testing team also performs nonfunctional testing such as volume, load, and performance testing.

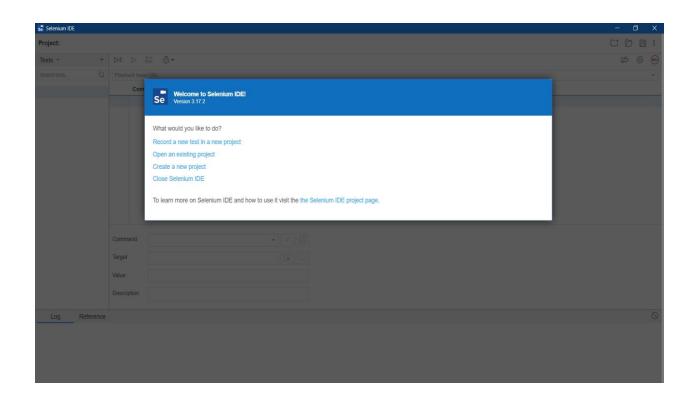
• Acceptance Test: We will move on to the acceptance testing level once our entire application has been completed and the first three levels have been tested. At this stage, the test team leader will work with the end user to evaluate our product. In essence, we will check the software's usability and functionality. We will ensure that our system satisfies all user requirements after this testing phase.

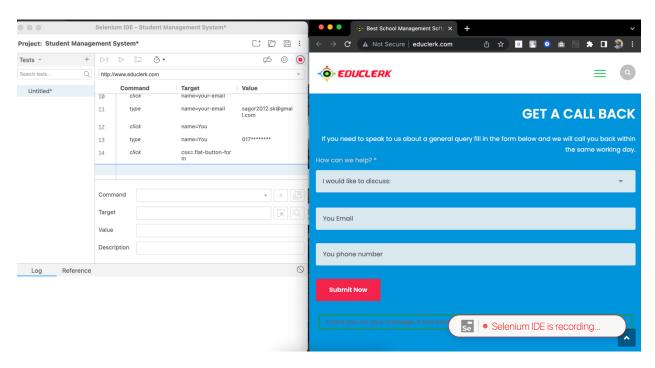
6.2 Test Tools

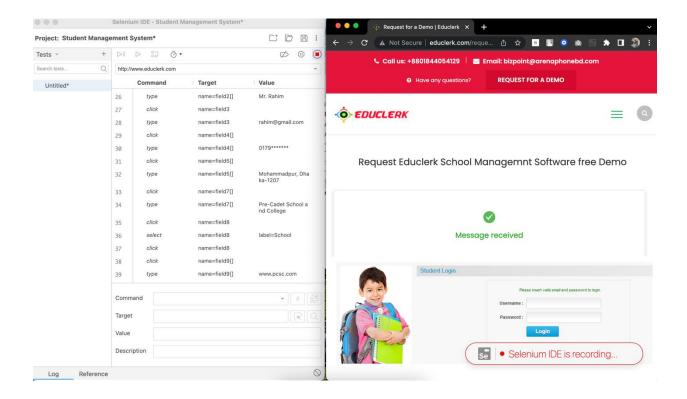
We will use different kinds testing tools to test our application like Selenium.

Selenium: We will use selenium because of Automation testing. Our quality control engineer will conduct this testing part. First of all, we will do manual testing after manual part we will conduct automation testing. Selenium is most important tool for automation testing. Selenium is a free and open-source framework for evaluating web applications across many browsers and platforms. Selenium Test Scripts created in a number of different programming languages, such as Java, C#, Python, and others. But we will use Java language for automation testing. There are some screenshots of selenium below:









6.3 Meetings

Every week, the quality assurance team leader will set up a meeting to assess the progress being made on our application. We will also regularly perform code reviews and code walks through in order to find errors and bugs as soon as possible. Each week our project manager will meet with our quality assurance team lead to go over the status of our project. Every two weeks, all of our staff members who are involved in the project will participate in the inspection section.

7. TEST CASES/TEST ITEMS

Project Name: Student Management System				Test Designed by: Md. Shaik Ahmed Sharuk		
Test Case ID: FR_1			Test Designed date: 10-Aug-22			
Test Priority (Low, Medium, High): High			Test Executed by: Md. Shaik Ahmed Sharuk			
Module Name: Registration S	Session		Tes	t Execution date:	12-Aug-22	
Test Title: Validate registering an account providing only mandatory field.						
Description: Test website reg	sistration page		Ì			
Precondition (If any): Open	the application		•			
Test Steps	Test Data	Expected Resu	lts	Actual Results	Status (Pass/Fail)	
2.Click the "Register" 3. Enter a new account detail for the only mandatory field 4.Click on the SIGN-UP button. (ER-1) Pass: 123*** Name: Shakhawat Hossain User should be logged in, taker 'Account Success' page a proper details should be displayed on the page			n to and	As expected,	Pass	
Post Condition: User info	Post Condition: User information saved into the database					
Project Name: Student Mana	gement System		Tes	t Designed by: M	Id. Shaik Ahmed Sharuk	
Test Case ID: FR_2			Test Designed date: 10-Aug-22			
Test Priority (Low, Medium,	High): Low		Test Executed by: Md. Shaik Ahmed Sharuk			
Module Name: Registration Session			Test Execution date: 12-Aug-22			
Test Title: Validate all the fields in the Register Account page have the proper placeholders						
Description: Test website registration page						
Precondition (If any): Must be	e start the applicati	ion				

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
option 2. View the First Name, Last Name, E-Mail, Telephone, Password, Password Confirm fields for Placeholders (ER-1) Post Condition: Same as	Not applicable	Proper Placeholder texts should be displayed in these fields		Pass
pre condition				

Project Name: Student Manag	Test Designed by	Test Designed by: Md. Shakhawat Hossain Khan			
Test Case ID: FR_3	Test Designed da	Test Designed date: 10-Aug-22			
Test Priority (Low, Medium,	High): High	Test Executed by	: Md. Shakhaw	at Hossain Khan	
Module Name: Login		Test Execution d	ate: 12-Aug-22		
Test Title: Validate the login	functionality providing th	e valid credential			
Description: Test the login pa	ige				
Precondition (if any): Open the	ne application and view the le	ogin page			
Test Steps	Test Data	Expected Results	Actual Results	status	
1. Click on the SIGNUP/LOGIN button. 2.Enter valid credential 3. Click on the LOGIN button. (ER-1)	Go to the manage my account page.	As expected,	pass		
Post Condition: User can go t	to the dashboard page.				

Project Name: Student Management System		Test Designed by	Test Designed by: Md. Shakhawat Hossain Khan			
Test Case ID: FR_4		Test Designed da	te: 10-Aug-22			
Test Priority (Low, Medium	High): High	Test Executed by	: Md. Shakhaw	at Hossain Khan		
Module Name: Login		Test Execution da	ate: 12-Aug-22			
Test Title: Validate the logi	n functionality providing	g invalid credential				
Description: Test the login p	age					
Precondition (if any): Open to	he application and view th	ne login page				
Test Steps	Test Data	Expected Results	Actual Results	status		
. Click on the IGNUP/LOGIN buttonEnter valid credential 3. Click on the LOGIN button. (ER-1) Username: sksksk Show invalid account. Show invalid account.						
Post Condition: Same as pred	condition	1	I			

Project Name: Student Management System	Test Designed by: Md. Mostofa Nowaizish Nafi
Test Case ID: FR_5	Test Designed date: 10-Aug-22
Test Priority (Low, Medium, High): High	Test Executed by: Md. Mostofa Nowaizish Nafi
Module Name: Login	Test Execution date: 12-Aug-22

Test Title: Validate the login page without providing any credentials.								
Description: Test the login	Description: Test the login page							
Precondition (if any): Open	the application and view the le	ogin page						
Test Steps	Test Data	Expected Results	Actual Results	status				
SIGNUP/LOGIN button. 2.Enter valid credential 3. Click on the LOGIN button. (ER-1)		Show invalid account.	As expected,	pass				
Post Condition: Same as pr	econdition							

Project Name: Student Management System	Test Designed by: Md. Mostofa Nowaizish Nafi
	Test Designed date: 10-Aug-22
Test Case ID: FR_6	
Test Priority (Low, Medium, High): High	Test Executed by: Md. Mostofa Nowaizish Nafi
Module Name: Login	Test Execution date: 12-Aug-22
Test Title: Validate the UI of the Login page	
Description: Test the login page	
Precondition (if any): Open the application and view	the login page

Test Steps	Test Data	Expected Results	Actual Results	status		
1. Click on the SIGNUP/LOGIN button.	Not Applicable	Proper and good UI should be displayed on the 'Login Account' page	As expected,	pass		
Post Condition: Same as precondition						

Project Name: Student Management System		Test Designed by: Md.Ashik			
Test Case ID: FR_7	Test Designed da	Test Designed date: 10-Aug-22			
Test Priority (Low, Mediun	n, High): High	Test Executed by	: Md.Ashik		
Module Name: Forgot Pass	word	Test Execution da	ate: 12-Aug- 22		
Test Title: Validate resetti	ng the password for a non-	registered account			
Description: Test the forgot	password functionality				
Precondition (if any): Must	be not registered user can go	through this task			
Test Steps	Test Data	Expected Results	Actual Results	status	
1.Click on 'Forgotten Password' link from Login page 2. Enter an email addressfor which the Account doesn't exist in the application 3. Click on 'Continue' button		Show error message like user not be registered	As expected,	pass	

Post Condition: Same as pr	recondition					
Project Name: Student Management System Test Case ID: FR_8		Test Designed by: Md.Ashik				
		Test Designed date: 10-Aug-22				
Test Priority (Low, Medium, High): High		Test Executed by	Test Executed by: Md.Ashik			
Module Name: Payment Method		Test Execution d	Test Execution date: 12-Aug-22			
Test Title: Checks the use Description: The payment	r payment issue. transaction will be done usin	g user's ID				
Precondition (if any): User	must be a valid user					
Test Steps	Test Data	Expected Results	Actual Results	status		
 Login Click User Account Details Input User ID number Confirm payment slip 	User name: Sharuk123 Pass: Sharuk***	Payment slip will be generated.	As expected,	pass		
Post Condition: Payment sl	lip generated.					

8. ITEM PASS/FAIL CRITERIA

- Unit test done in each and every module or feature
- All the modules added one by one and integration test done after every module integrated
- 100% integration test passed
- No major defects are outstanding
- Not more than 15 minor defects are outstanding
- Code coverage tools indicates all code covered

- Ensuring all critical Test Cases are passed
- Identifying and fixing all the high-priority defects

9. TEST DELIVERABLES

The Software Quality and Testing Plan defines the technical and managerial processes necessary for the system's development and delivery.

- o First, an acceptance test plan, which functions as a contract between our project and the creators of the project to be published.
- Then we'll need a system integration strategy. Because system integration is described as a process, we may utilize it to connect various computer systems or software applications to a single, bigger system, allowing each solution to work functionally together.
- o In the unit test strategy part, we must assess the system that will be tested.
- O Screen prototypes are made up of many papers. That single prototype is a redesigned Iterative Prototyping. Iterative prototyping entails developing a prototype based on the product design, evaluating it for usability and functioning, and then modifying what didn't work. Following the completion of testing, the research team will develop and produce a fresh version for testing.
- O Mockup reports provide a framework for entering and copying graphics, as well as the opportunity to experiment with different formats of charts, graphs, and illustrations and arrange them in such a way that the reader does not have to switch back and forth in the report to match a copy of the exemplary artwork.
- O Here are discussed the design goals, high-level system decomposition, concurrency identification, hardware and software platforms, acceptance test plan, system integration plan, screen prototypes, software control implementation, and report mock ups. Incident reports are critical for employee safety and developing best practices in the workplace. Proper incident documentation contributes to the success of a project. We created a report and a complete explanation of our project in our project. A test manual that details the unit and system tests performed on the system prior to delivery, as well as the expected results.
- o The test log records events that occurred during a test run or planned run, as well as the status of each checkpoint. In our project, we updated each checkpoint and collected data on our activities and methods. An employee turnover report is a summary of the number

of dismissed workers among current employees in a company. It is the monthly analysis report, which is generated monthly, and the average for the year is determined. As a result, it is critical to our initiatives and plays a vital role.

10. STAFFING AND TRAINING NEEDS

The goal of the staffing technique is to guarantee that the project has enough people with the necessary skills and expertise to complete it successfully. The following is a detailed overview of the duties required to complete the project. It details the project's roles, their responsibilities, the number of people needed to complete each position.

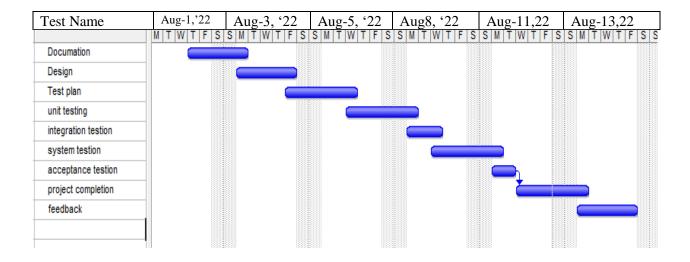
- It is clearly notified that, there will be minimum one or two project manager who are expert in organizing, planning, and executing projects while working within constraints such as budgets and schedules.
- o In our project we need at least one full-time tester assigned to the system / integration and acceptance testing phase of the project. Approximately four months after the start of the project, (full time tester) will be assigned full-time. If there is no tester, the test manager will assume this role. To ensure a complete and proper exam, we need to address some areas related to training.
- o In our project, we hired lead programmers. Lead programmers are software engineers who oversee several projects. At the technical level, he is responsible for overseeing projects, technical decisions, and developer work. At the management level, he is responsible for achieving goals and meeting deadlines.
- Developers and testers need to be trained in the basic features of the EDI interface.
 Operations staff must also be well trained in the EDI communication process before the project is finally approved.
- Analyze project requirements, determine how to translate a designer's vision into a plan that developers can implement. By involving a requirement analyst in our project, we can do these types of works.
- Monitoring and controlling mechanism play a vital role of project objectives. If the project is well budgeted and all perspectives of the project are running, the project will work properly. Testing strategy and objectives in our project, we identified the purpose of our testing. Also observed what a successful completion of a testing cycle looks.
- Development management and user management are closer. The user administrator decides where to go, taking into account changes in the control process. So, in our project when development management system needed help to improve the project, they can discuss with user management team.

11. RESPONSIBILITIES

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

12. TESTING SCHEDULE

The project schedule includes time for the upcoming testing activities. The project plan timetable specifies the precise hours and dates for each task. The project timeline and strategy also include information on the people needed for each process. The project manager, working with the development and test team leaders, will coordinate the employees needed for each task, the test team, the development team, management, and the customer.



13. PLANNING RISKS AND CONTINGENCIES

Every week, the quality assurance team leader will set up a meeting to assess the progress being made on our application. We will also regularly perform code reviews and code walks through in order to find errors and bugs as soon as possible. Each week our project manager will meet with our quality assurance team lead to go over the status of our project. Every two weeks, all of our staff members who are involved in the project will participate in the inspection section.

14. APROVALS

Project Sponsor - Steve Sponsor	
Development Management - Ron Manager	
EDI Project Manager - Peggy Project	
RS Test Manager - Dale Tester	
RS Development Team Manager - Dale Tester	
Reassigned Sales - Cathy Sales	
Order Entry EDI Team Manager - Julie Order	