American International University-Bangladesh (AIUB)

Department of Computer Science
Faculty of Science &Technology (FST) Spring 22-23

Section: A

Software Quality Assurance and Testing

Online Dental Management System

A Report submitted
By

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Checked by Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

Software Test Plan

for

< Online Dental Management System >

Version 1.0 approved

Prepared by < S.M. Kamrul Hasan Koche, ATHOY KANTI RAY, JAMIL AHAMMED, NOUSHEEN JAHAN >

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<10.08.2023>

Checked by Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

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Revision History

Revision	Date	Updated by	Update Comments
01	2023.08.09	S.M. KAMRUL HASAN KOCHE	First Draft
02	2023.08.09	ATHOY KANTI RAY	Second Draft
03	2023.08.09	JAMIL AHAMMED	Third Draft
04	2023.08.09	NOUSHEEN JAHAN	Fourth Draft

1. TEST PLAN IDENTIFIER: RS-MTP01.3

2. REFERENCES

o https://educate.muzamelhashimi10.be/

3. INTRODUCTION

Background to the Problem

o A dental management system website is a digital platform designed to help dental clinics and practices manage various aspects of their operations efficiently. It typically offers features such as appointment scheduling, patient records management, billing and invoicing, treatment planning, and communication tools. The website allows dental professionals to access and update patient information, track appointments, monitor treatment histories, and streamline administrative tasks. This type of system aims to enhance patient care, improve office workflow, and maintain organized records for better overall management of the dental practice.

Solution to the Problem

o The development of a dental management system website is driven by the need to modernize and optimize the traditional paper-based processes in dental practices. The project aims to provide a user-friendly and centralized platform that empowers dental professionals to offer better patient care while minimizing administrative burdens.

o By digitizing patient records, treatment histories, and appointment schedules, the system ensures quick access to critical information, reducing the chances of errors and enhancing the quality of care. The website can also include features such as automated reminders for appointments, prescription management, and treatment plan visualization, all of which contribute to a more efficient and patient-centric practice.

o Furthermore, the website may have a secure login system to protect patient data and ensure compliance with privacy regulations, such as HIPAA. It could also facilitate communication between patients and dental staff, allowing patients to ask questions, request appointments, and receive important updates.

o Overall, the dental management system website serves as a comprehensive solution to streamline operations, improve patient engagement, and elevate the overall experience within the dental practice.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

1. Software Features

4.1.1.1 Functional Requirements

1.1 The patient login into the software with their phone number and password.

1.2 If the login successful the main home page in this software will be displayed.

1.3 If the patient forgets the username and password so they can be reset password using their valid email address and phone number.

1.4 If the patient input 3 times wrong password, the system will block the user account login for half one hour.

Priority level: High

Precondition: User have valid phone number and password.

Cross-references: None

2. Doctor

4.1.1.2 Functional Requirements

2.1 Monitoring patient information by maintaining accurate database of all ID .

2.2 If the patient is valid on his /her information then add that user add as patient.

.

2.3 Doctor will able to see the patient list status. Doctor has the access to add/remove patient.

Priority level: High

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

Cross-references: 1.1, 1.2, 3.1

3. Patient

4.1.1.3 Functional Requirements

3.1 Patient can registration procedure.

3.2 Patient can set the appointment.

3.3 Patient can contact with doctor through message.

Priority level: High

Precondition: Must be in logged in condition

Cross-references: 2.1, 2.2, 2.3

4. User Edit and Update their profile

4.1.1.4 Functional Requirements

4.1 Patient can Edit and Update their information from the website.

4.2 Doctor can Edit and Update their information from the website

4.3 Patient 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. Chat

4.1.1.5 Functional Requirements

5.1 Patient can easily contact with Doctor.

5.2 Through chat they can ask for any help.

5.3 Doctor can give them proper solution.

Priority level: Medium

Precondition: Must be in logged in condition

Cross-references: 5.1, 6.2

6. Review

4.1.1.6 Functional Requirements

6.1 Patient can give review from the Doctor by the basis of their service.

6.2 Patient can see the review in their details option.

6.3 Patient 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

o **Usability:** Any 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.

o **Maintainability:** If any issue locates or detect in the system then it will be possible to fix it.

o **Correctness:** Mentioned all features will be completed according to the preferences of the patients.

o **Functionality:** Will display available appointment list.

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.

o **Reliability:** All features will perform in various working environments or devices. o Flexibility: Will flexible enough to modify in terms of any needs.

o **Integrity:** 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

SAAFWAN DENTAL & ORTHO DONTICS

Login

Registration

Name

Email

Phone Number(use for login)

Age

Address

Gender

Sign up

SAAFWAN DENTAL & ORTHO DONTICS

Login

Phone Number

Password

Login

Forget Password

Registration

Screenshot 1 — Dashboard

Saafwan Dental
& Ortho Dontics

- 🖥 Dashboard
- 🧊 Set Appointment
- ✉ Patient Messages

ACCOUNT PAGES

- 👤 Profile
- 🔑 Change Password
- ⮕ Log out
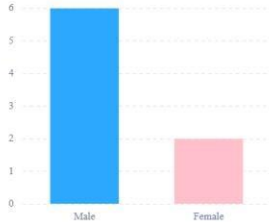
TOTAL PATIENTS
8
Saafwan Dental & Ortho Dontics

Patients Overview
Here you have details about patients.

	Male	Female

Patients

Search 🔍

ID	NAME	STATUS	PHONE NUMBER	
35	Kamrul Hasan Koche kamrulkoche@gmail.com	ACTIVE	01798135862	View
34	Jamil Ahammed akash jamilahammed.aiub@gmail.com	ACTIVE	01611529049	View
33	nousheen jahan noushin.doe@gmail.com	ACTIVE	01309141298	View
25	ATHOY KANTI athoykanti45@gmail.com	ACTIVE	01735850987	View
24	John Wick john@gmail.com	DISABLE	01556394355	View
	Mursalin			View

Screenshot 2 — Patient Messages

Not secure | saafwan.unaux.com/view/doctor/messages

Saafwan Dental
& Ortho Dontics

- 🖥 Dashboard
- 🧊 Set Appointment
- ✉ **Patient Messages**

ACCOUNT PAGES

- 👤 Profile
- 🔑 Change Password
- ⮕ Log out

TOTAL PATIENTS
8
Saafwan Dental & Ortho Dontics

Patient Messages

Search 🔍

PATIENT NAME	MESSAGE	PHONE NO	RECIEVED		
Kamrul Hasan Koche (35) kamrulkoche@gmail.com	Hello	01798135862	07-08-2023	View	🗑
Kamrul Hasan Koche (35) kamrulkoche@gmail.com	Hello	01798135862	07-08-2023	View	🗑
Kamrul Hasan Koche (35) kamrulkoche@gmail.com	Hello	01798135862	07-08-2023	View	🗑
Kamrul Hasan Koche (35) kamrulkoche@gmail.com	Hi	01798135862	07-08-2023	View	🗑
Kamrul Hasan Koche (35) kamrulkoche@gmail.com	Hello	01798135862	07-08-2023	View	🗑

84°F
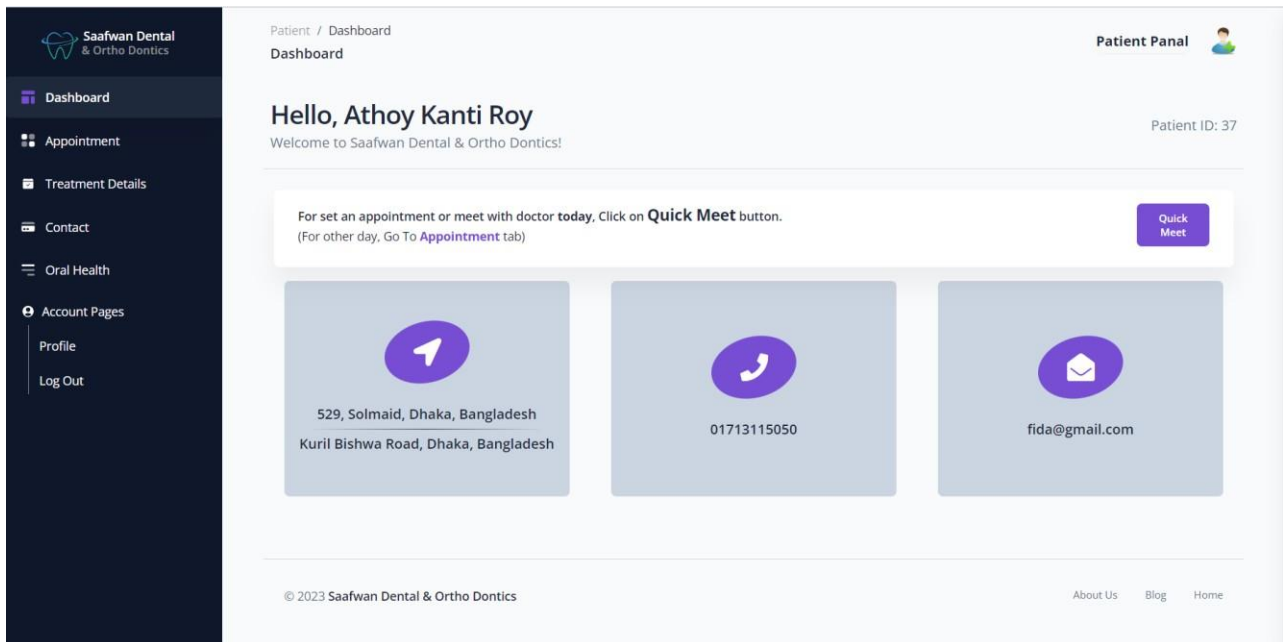
4.4 Project Requirements

o Total budget 4,00,000

o Total Development Time 6 months

o In our application we will use PHP programming language we will use MySQL database in backend.

o Total size of our project must be 500-600MB.

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:

o How to perform our application under low network that will not be tested.

o External functionality over the program is not supported by this system. As a result, application to server testing should be avoided.

o Hardware

6. TESTING APPROACH

6.1 Testing Levels

The testing for the online dental management system 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.
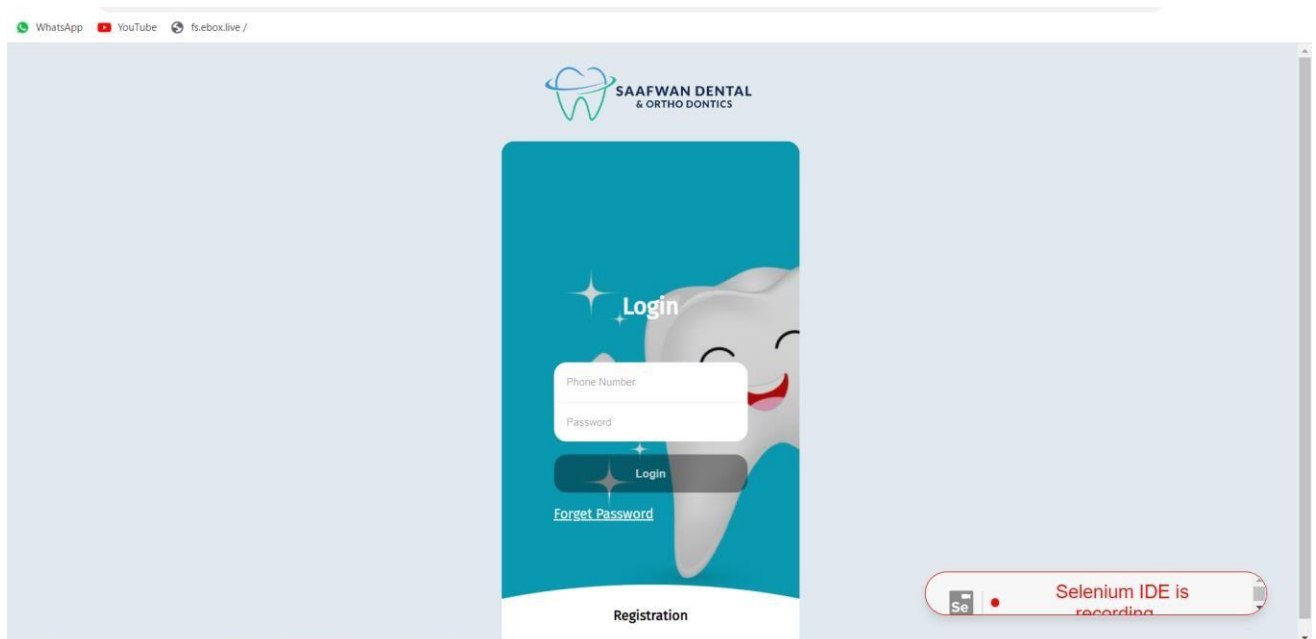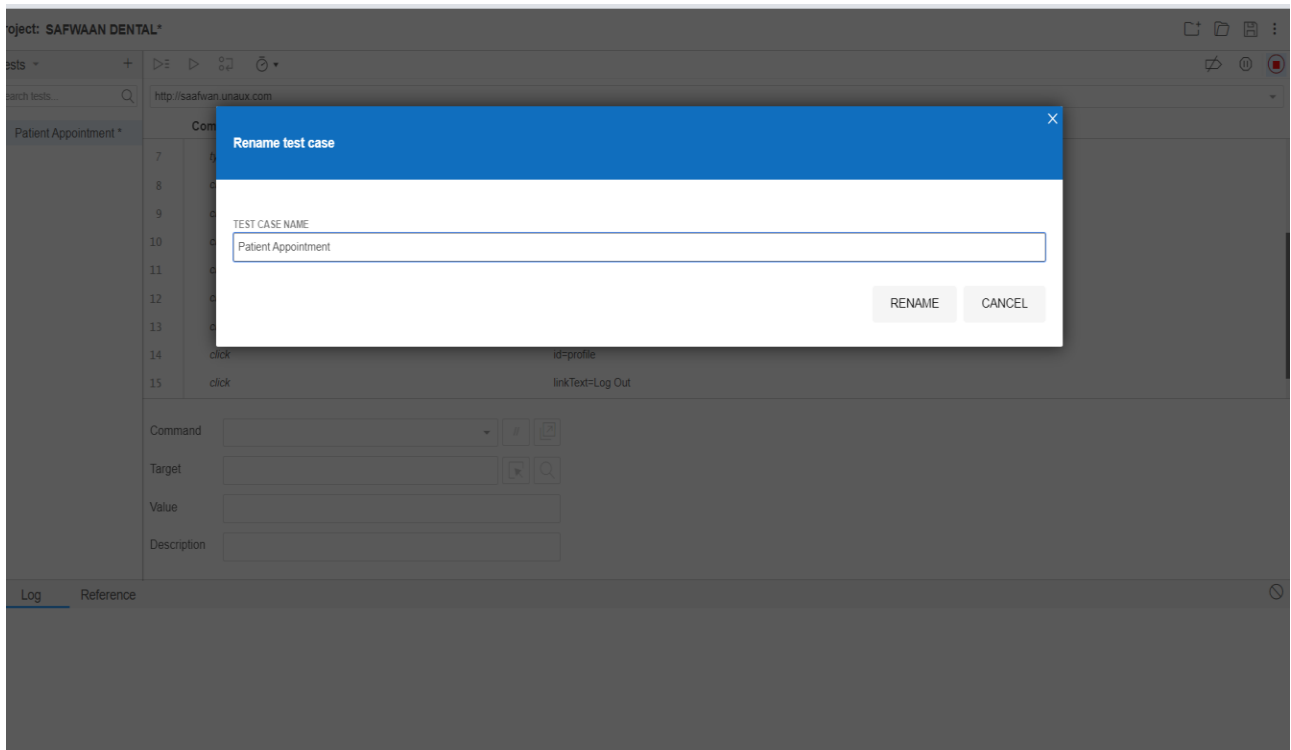
- **Unit Test:** The fundamental level of testing is the unit test. After creating each feature, a developer will verify that it functions as intended inside the component design. Because they are the ones who understand how these specific features functioned and because they are familiar with internal 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 used different kinds testing tools to test our application like Selenium.

- o **Selenium:** We used 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. There are some screenshots of selenium below:

Tests ▾

Search tests...

Patient Appointment *

http://saafwan.unaux.com

	Command	Target	Value
7	type	name=pass	804128
8	click	css=.signup .submit-btn	
9	click	id=appointment	
10	click	id=treatmentDetails	
11	click	id=contact	
12	click	id=healthedu	
13	click	css=.text-md	
14	click	id=profile	
15	click	linkText=Log Out	

Command

Target

Value

Description

Log   Reference

Selenium IDE - SAFWAAN DENTAL*

Tests ▾

Run current test Ctrl+R m

Search tests...

✓ Patient Appointment *

	Command	Target	Value
7	✓ type	name=pass	804128
8	✓ click	css=.signup .submit-btn	
9	✓ click	id=appointment	
10	✓ click	id=treatmentDetails	
11	✓ click	id=contact	
12	✓ click	id=healthedu	
13	✓ click	css=.text-md	
14	✓ click	id=profile	
15	✓ click	linkText=Log Out	

Command

Target

Value

Description

Log   Reference

10. click on id=treatmentDetails OK	02:05:29
11. click on id=contact OK	02:05:30
12. click on id=healthedu OK	02:05:31
13. click on css=.text-md OK	02:05:32
14. click on id=profile OK	02:05:33
15. click on linkText=Log Out OK	02:05:34
'Patient Appointment ' completed successfully	02:05:35

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: Online Dental management system			Test Designed by: S.M.KAMRUL HASAN KOCHE	
Test Case ID: FR_1			Test Designed date: 03-08-2023	
Test Priority (Low, Medium, High): High			Test Executed by: ATHOY KANTI RAY	
Module Name: Registration Section			Test Execution date: 04-08-2023	
Test Title : Verify registration field providing credentials				
Description: Test website registration page				
Precondition: N/A				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Registration section 3. Click register	Phone Number:01798135861, Password: 12345	User get the message "Registration Successful"	As expected	Pass
Post Condition:				

Project Name: Online Dental management system	Test Designed by: S.M.KAMRUL HASAN KOCHE
Test Case ID: FR_2	Test Designed date: 05-08-2023
Test Priority (Low, Medium, High): High	Test Executed by: JAMIL AHAMMED
Module Name: Registration Session	Test Execution date: 23-4-2023
Test Title : Verify registration field providing credentials	
Description: Test website registration page	

Precondition: N/A

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Registration section 3. Verify the input field. 4. Click register	N/A	Data display on input field	As expected	Pass

Post Condition: Post Condition followed

Project Name: Online Dental Management System	Test Designed by: JAMIL AHAMMED
Test Case ID: FR_3	Test Designed date: 07-08-2023
Test Priority (Low, Medium, High): High	Test Executed by: ATHOY KANTI RAY
Module Name: Login Session	Test Execution date: 08-08-2023
Test Title : Validate Login Functionality	
Description: Test website login page	

Precondition: Have to register first

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Login section 3. Put data 4. Click login	Phone number:01798135861, Password:12345	Re-direct to Seller Panel	As expected	Pass

Post Condition: Validate user data with database

Project Name: Online Dental Management System	Test Designed by: ATHOY KANTI RAY
Test Case ID: FR_4	Test Designed date: 08-08-2023
Test Priority (Low, Medium, High): High	Test Executed by: NOUSHEEN JAHAN
Module Name: Login Session	Test Execution date: 09-08-2023
Test Title : Edit Profile	
Description: Test Update profile	
Precondition: have to login first with valid phone number and password	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Login section 3. Go to apartment list 4 . Add apartment	Phone number:01798135861, Password:12345	Apartment will be added to the list	As expected	Pass

Post Condition: N/A

Project Name: Online Dental Management System	Test Designed by: NOUSHEEN JAHAN
Test Case ID: FR_5	Test Designed date: 10-08-2023
Test Priority (Low, Medium, High): High	Test Executed by: JAMIL AHAMMED
Module Name: Chat Session	Test Execution date: 10-08-2023
Test Title : Check Chat Function	
Description: Test doctor and Patient can have chat in between them	
Precondition: have to login first	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to website 2. 2.Login 3. Go to chat 4. Chat 5. Type Message and send	Phone number:01798135861, Password:12345	The admin panel will be able to see the message	As Expected	Pass

Post Condition: N/A

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.

- 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.

- In the unit test strategy part, we must assess the system that will be tested.

- 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.

- 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.

- o 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.

o 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.

o 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. o 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.

o 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	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 prototype 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.
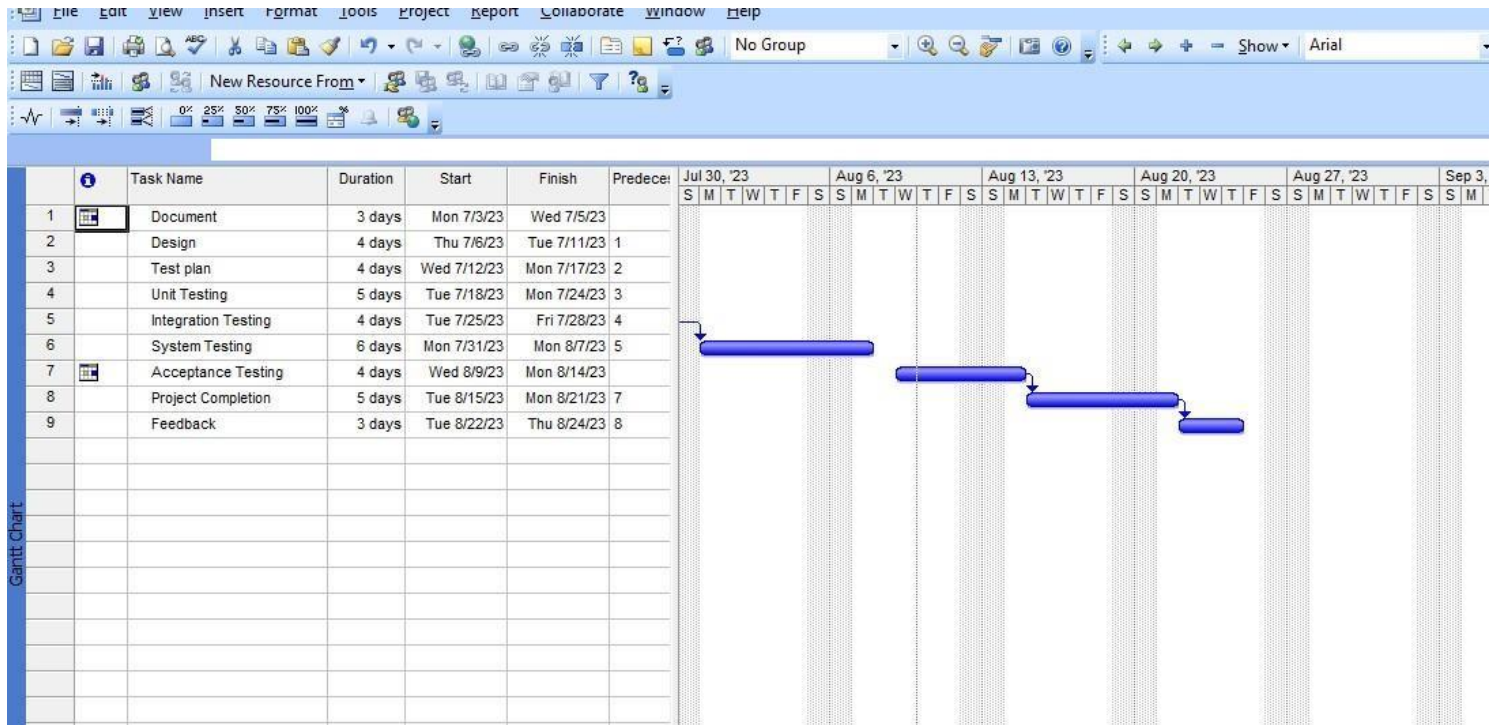
13. PLANNING RISKS AND CONTINGENCIES

o Limited Reassigned Sales staff. The Reassigned Sales administration staff currently has two positions unfilled. As a result of this staff shortage there may be delays in getting staff to review appropriate documents and to participate in the Acceptance test process. Should client staff become a problem, the appropriate dates for reviews and acceptance testing will slip accordingly. No attempt will be made to bypass any part of the review and testing processes.

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	