
American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

Summer 22-23

Section: E

Software Quality Assurance and Testing

# GPS-Based Reminder

A Report submitted
By



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# Software Test Plan

for

# GPS-Based Reminder

Version 1.0 approved

Prepared by - SABIHA RAHMAN, MD. KAMRUZZAMAN

American International University-Bangladesh

August 11, 2023

**Checked By Industry Personnel**

Name:

Designation:

Company:

Sign:

Date:

# Table of Contents



# Revision History

| Revision | Date | Updated by | Update Comments |
|---|---|---|---|
| 0.1 | 03.08.2023 | Md. Kamruzzaman | First Draft |
| 0.2 | 05.08.2023 | Sabiha Rahman | Second Draft |
| 0.3 | 08.08.2023 | Md. Kamruzzaman | Third Draft |
| 0.4 | 10.08.2023 | Sabiha Rahman | Fourth Draft |
| 0.5 | 12.08.2023 | Md. Kamruzzaman | Fifth Draft |
| 0.6 | 13.08.2023 | Sabiha Rahman | Sixth Draft |

# 1. TEST PLAN IDENTIFIER: RS-MTP01.3

# 2. REFERENCES

Software Requirement Specification (SRS) Document: https://github.com/MK-Rony/SRS

# 3. INTRODUCTION

## Background to the Problem

In today's fast-paced and interconnected world, the increasing demands of work, personal commitments, and social obligations have created a need for more efficient task management and organization. As individuals juggle multiple responsibilities and navigate through various locations, keeping track of tasks and appointments has become a significant challenge. Traditional reminder systems reliant on manual input and fixed time-based alerts often fall short in addressing the dynamic nature of modern lifestyles. This gap in task management has led to missed appointments, forgotten errands, and increased stress levels among individuals striving to keep up with their daily activity.

## Solution to the Problem

The GPS-based reminder system is a software application allowing users to set reminders based on their location. The system uses GPS technology to determine the user's current location and notifies them of reminders when they enter or exit a specified geographic area. The software application will be available on mobile devices, such as smartphones and tablets, and will be compatible with major operating systems.
The purpose of the GPS-based reminder system is to provide users with a convenient and efficient way to manage their tasks and reminders. The system will enable users to set reminders for various tasks, such as appointments, meetings, and shopping lists, and receive notifications when they are near the designated location. The system will also allow users to customize reminder settings, such as the reminder frequency, notification sound, and distance from the location. The software aims to enhance productivity and reduce stress by eliminating the need for manual reminders and increasing the efficiency of task management.

# 4. REQUEIREMNT SPECIFICATION

## 4.1 System Features

### 4.1.1 Registration

Functional Requirement

1.1 The software shall allow users to start registration with their Personal Information (Name, DOB, Gender….) and a verified Google account.
1.2 To verify, the software will take a random verification code which will be generated and sent to the user's email address by the system.
1.3 After verification, the user must set their username and password.
1.4 The username must be unique, and the password should be strong.
1.5 If the username already exists in the database records, then repeat 1.3 with an alert message.
1.6 If the registration is successful, the login page of the user account will be displayed.

Priority Level: High

Precondition: The user has a valid google account.

### 4.1.2 System Login

Functional Requirement

2.1 The software shall allow users to login with their given username and password.

2.2 If the username and/or password has been inserted wrong for more than three times, the random verification code will be generated by the system to retry login.

2.3 After the number of login attempts exceed its limit (5 times), the system shall block the user account login for one hour.

Priority Level: High

Precondition: The user has a valid username and password.

### 4.1.3 Set Goals

Functional Requirements

3.1 The site will take information about goals(task).

3.2 This system will take location regarding goals.

3.3 User can attach time if there is any offline possibility.

3.4 User can add collaborators (who want to work together) via email if wants.

3.5 Can skip a current task and reset it for later.

3.6 User can mark and display the completed task.

Priority Level: High

Precondition: Successful login.

### 4.1.4 Add Socially

Functional Requirements

4.1 Will show all users of this application from the contact database and social sites database or contacts (WhatsApp, Facebook, Contacts etc.)

4.2 User can add friends externally by getting an invitation link.

4.3 User can see up-to-date rank by completed tasks.

4.4 User can share specific moments of their choice.

Priority Level: Medium

Precondition: Successful login and must be enabled.

### 4.1.5 Settings

Functional Requirements

5.1 The software shall allow users to enable default time for goal if there is any offline possibility at a certain location.

5.2 User can change the display options.

5.3 User can be able to enable or disable add socially.

5.4 User can add collaborators (who want to work together) via email if wants.

5.5 User can choose ghost mode to hide activities.

5.6 User can Edit profile.

Priority Level: Medium

Precondition: Successful login.

### 4.1.6 Searching

Functional Requirements

6.1 The system shall allow users to search for previously added goals/tasks.

6.2 The search feature shall enable the user to search based on the task name, location and collaborators.

6.3 The system shall suggest related tasks based on previous activity or missed activity.

6.4 The system shall use GPS to suggest tasks based on the user's current location and previous activity.

6.5 The system shall allow users to view missed tasks and suggest a reminder to complete them.

6.6 The system shall prioritize suggested tasks based on their proximity, urgency, and priority level.

6.7 The system shall allow users to filter search results based on completed or incomplete tasks.

6.8 The software shall allow users to sort search results based on date added and priority level.

6.9 The system shall display the search results in a user-friendly manner with necessary details like task name, location, and collaborators.

6.10 The software shall allow users to modify previously added tasks based on the search results.

Priority Level: Medium

Precondition: Successful login and previously added goal/tasks.

### 4.1.7 Snooze

Functional Requirements

7.1 The system shall allow users to snooze a reminder for a certain amount of time.

7.2 The snooze feature shall be available for incomplete tasks and upcoming reminders.

7.3 The system shall provide preset time intervals for snooze, such as 5 minutes, 10 minutes, 15 minutes, 30 minutes, and 1 hour.

7.4 The software shall allow users to customize the snooze time interval as per their preferences.

7.5 The system shall remind the user after the snooze period is over if the task is still incomplete.

Priority Level: Medium

Precondition: Successful login and reminders to be snoozed.

#### 4.1.8 Re-Reminder

Functional Requirements

8.1 The system shall suggest missed tasks periodically and location based.

8.2 The periodic mode shall be customizable, based on the user's selected time interval, such as every hour or every day.

8.3 The location-based mode shall suggest missed tasks when the user is in the vicinity of the task location.

8.4 The system shall prioritize missed tasks based on their proximity, urgency, and priority level.

8.5 The system shall allow users to mark missed tasks as complete or snooze them for a later reminder.

Priority Level: High

Precondition: Successful login and missed goal/tasks.

## 4.2 System Quality Attributes

**Usability:** A trained user shall be able to set one goal(tasks) in a single visit of set-goals function in an average of two and a maximum of three minutes.

**Reliability:** The data communication protocol must maintain the reliability and quality of data transmission. The memory system must be non-volatile.

**Interoperability:** The GPS-Based Reminder System shall be able to import any valid location information from google Maps or the MapQuest mapping tool.

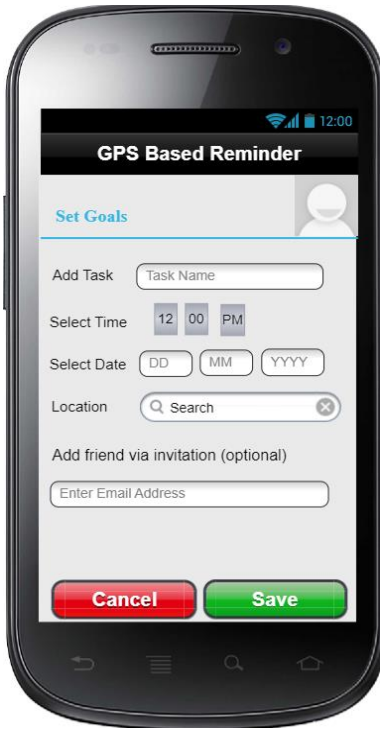
**Integrity:** Only existing and verified emails will be granted to send the verification code to the user’s phone.

**Reusability:** The Add socially function shall be designed to be reusable at the object code level in other applications that may be used for connecting people by existing connections.

**Availability:** The system should be up for the maximum time, downtime minimized.

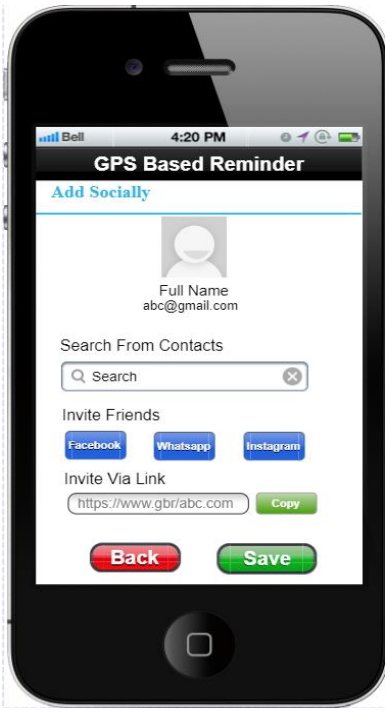
## 4.3 System Interface


*Registration*




*Set Goal*


*Settings*




*Add Socially*

## 4.4 Project Requirements

1. Total budget 400,000 BDT.
2. Total development time 3 months.
3. Team of four members with proper technical knowledge.
4. Space for meetings and group work.
5. Dedicated IDE for development.

# 5. FEATURES NOT TO BE TESTED

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

Performance test will be done by the end users. They will give feedback based on the performance after using the application.

# 6. TESTING APPROACH

## 6.1 Testing Levels

1. To determine the appropriate testing level of Selenium for our system, it is important to consider the scope and complexity of the system, as well as the level of quality and risk required for the system.
2. At a minimum, functional testing should be performed using Selenium to ensure that the system meets the requirements and specifications provided by the stakeholders. This can include testing the user interface, data input and output, and various functions and features of the system.
3. In addition to functional testing, other testing levels may be necessary depending on the complexity of the system and the level of risk associated with its use. These can include integration testing, performance testing, and security testing, among others.
4. Overall, the testing level of Selenium for a system should be determined based on a thorough analysis of the system's requirements, risks, and quality standards, and should be tailored to ensure that the system meets the needs of its stakeholders and users.

## 6.2 Test Tools

At the industry level, there are a number of different test tools that can be used to test a software application. Some of these tools include:

1. Automated testing tools: These tools can be used to automate the testing process, allowing developers to test the software quickly and efficiently.
2. Load testing tools: These tools can be used to simulate high levels of usage on the software, to ensure that it can handle large amounts of data and traffic without crashing or experiencing other issues.
3. Security testing tools: These tools can be used to test the security of the software, to ensure that it is protected against potential threats and vulnerabilities.
4. User experience testing tools: These tools can be used to test the user experience of the software, to ensure that it is intuitive and easy to use.

## 6.3 Meetings

Software testing meeting is a meeting where individuals involved in the testing of a software application come together to discuss the progress of the testing, any issues that have been identified, and any necessary next steps. This may include discussing the results of the testing, identifying any defects or flaws in the software, and determining how to address these issues. The goal of the meeting is to ensure that the software is functioning properly and meets all of the necessary requirements before it is released to the public. During the software testing meeting, attendees may include the project manager, senior test engineer (test lead), junior test engineer, testing manager, and database analyst, among others. These individuals may provide updates on the testing process, discuss any issues that have been identified, and provide input on how to address these issues. The meeting may also involve reviewing and discussing test results, as well as discussing any necessary changes or modifications to the software. Overall, a software testing meeting is an important part of the software development process, as it allows individuals involved in the testing to come together and collaborate on ensuring the success of the project.

## 7. TEST CASES/TEST ITEMS

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_1 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: User Registration | | Test Execution Date: 09/08/2023 | | |
| Test Title: User registration module test | | | | |
| Description: Test registration by giving input to all the fields and must give unique username, email, and phone number | | | | |
| Precondition: | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to registration page<br>2. complete all the input fields<br>3. Click submit | Username: Sabiha<br>Email:sabiha@gmail.com<br>Password: 123 | Registration successful and redirect to login page | As expected | Pass |
| Post Condition: User data will go to database and redirect to login page | | | | |

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_2 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: Login Session | | Test Execution Date: 09/08/2023 | | |
| Test Title: verify login with valid username and password | | | | |
| Description: Test login by giving input username and password | | | | |
| Precondition: user must be registered | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |

| | | | | |
|---|---|---|---|---|
| 1. Go to login page<br>2. complete all the input fields<br>3. Click submit | Username: Sabiha<br>Email:sabiha@gmail.com<br>Password: 123 | Login successful and redirect to home page | As expected | Pass |
| Post Condition: User data will go to database and redirect to home page | | | | |

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_3 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: Set Goals | | Test Execution Date: 09/08/2023 | | |
| Test Title: Test set goals | | | | |
| Description: Test set goals by giving input to all the fields | | | | |
| Precondition: Successfully login | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to set goals page<br>2. complete all the input fields<br>3. Click submit | Goal name: Class<br>Time: 8am<br>Location: DS0212, AIUB | Set goals successful and redirect to home page | As expected | Pass |
| Post Condition: User data will go to database and redirect to home page | | | | |

| | |
|---|---|
| Project Name: GPS-Based Reminder | Test Designed by: MD. KAMRUZZAMAN |
| Test Case ID: FR_4 | Test Designed Date: 06/08/2023 |
| Test Priority: High | Test Executed by: Sabiha Rahman |
| Module Name: Add Socially | Test Execution Date: 09/08/2023 |

| Test Title: Verify add socially | | | | |
|---|---|---|---|---|
| Description: Test add socially by giving input to all the fields | | | | |
| Precondition: Successfully login | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to add socially page<br>2. complete all the input fields<br>3. Click submit | Socially name: Facebook<br>Socially ID: Sabiha | Set goals successful and redirect to home page | As expected | Pass |
| Post Condition: User data will go to database and redirect to home page | | | | |

| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
|---|---|---|---|---|
| Test Case ID: FR_5 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: Settings | | Test Execution Date: 09/08/2023 | | |
| Test Title: verify Settings option | | | | |
| Description: Test settings option | | | | |
| Precondition: Successfully login | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to settings option<br>2. Make changes<br>3. Click submit | Display mode: Dark | Setting changed successfully and redirect to home page | As expected | Pass |
| Post Condition: User data will go to database and redirect to home page | | | | |

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_6 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: Searching | | Test Execution Date: 09/08/2023 | | |
| Test Title: Verify Searching | | | | |
| Description: Test Searching by giving input to all the fields | | | | |
| Precondition: Successfully login and goal/task added previously | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to add socially page<br>2. complete all the input fields<br>3. Click submit | Goal name: Class | Goal find successfully and shows the result in list format | As expected | Pass |
| Post Condition: User data will go to database | | | | |

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_7 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: Medium | | Test Executed by: Sabiha Rahman | | |
| Module Name: Snooze | | Test Execution Date: 09/08/2023 | | |
| Test Title: Verify Snooze | | | | |
| Description: Test Snooze by giving input to all the fields | | | | |
| Precondition: Successfully login and goal/task added previously | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |

| | | | | |
|---|---|---|---|---|
| 1. Go to Snooze page<br>2. complete all the input fields<br>3. Click submit | Goal name: Class<br>Snooze time: for 1hr | Goal find successfully and Snoozed for 1hr | As expected | Pass |
| Post Condition: User data will go to database | | | | |

| | | | | |
|---|---|---|---|---|
| Project Name: GPS-Based Reminder | | Test Designed by: MD. KAMRUZZAMAN | | |
| Test Case ID: FR_8 | | Test Designed Date: 06/08/2023 | | |
| Test Priority: High | | Test Executed by: Sabiha Rahman | | |
| Module Name: Re-reminder | | Test Execution Date: 09/08/2023 | | |
| Test Title: Verify Re-reminder | | | | |
| Description: Test Re-reminder by giving input to all the fields | | | | |
| Precondition: Successfully login and goal/task missed previously | | | | |
| Test Steps | Test Data | Expected Results | Actual Results | Status (Pass/Fail) |
| 1. Go to Re-reminder page<br>2. complete all the input fields<br>3. Click submit | Reminder name: Class<br>Reminder time: 8am | Goal find successfully and shows the result in list format | As expected | Pass |
| Post Condition: User data will go to database | | | | |

## 8. ITEM PASS/FAIL CRITERIA

The feature test for the software system will be considered successfully completed under the following conditions:

The project manager verifies the accuracy of the data through appropriate validation processes, ensuring that the submitted data aligns with expected values and business rules. The submitted data should exhibit consistency and completeness, adhering to predefined data format and structure. Any discrepancies or errors identified during the verification process are documented

and appropriately resolved in collaboration with the concerned parties. All parallel processes involving data collection effectively stopped for the initial set of distributors upon successful verification of data accuracy. The project manager confirms their satisfaction with the accuracy, integrity, and completeness of the data, signifying their confidence in the system's functionality. Once all above criteria are met, the initial set of distributors will be transitioned from a test state to an active state within the system.

The feature test will be considered failed if any of the following conditions are met:

The initial set of distributors fails to submit reassigned sales data consistently for the designated one-month period. The project manager identifies significant inaccuracies in the submitted data, rendering it unsuitable for operational use. The submitted data consistently fails to adhere to the defined data format and structure, impeding successful integration. Critical discrepancies or errors identified during the verification process remain unresolved, indicating issues in error handling and data correction procedures. The project manager expresses dissatisfaction with the accuracy or reliability of the data, reflecting uncertainties about the system's readiness.

In case of a failed feature test, the necessary corrective actions, debugging, and retesting procedures will be initiated to address the identified issues and ensure the successful completion of the test process.

## 9. TEST DELIVERABLES

The following are the test deliverables that will be produced as part of the testing process:

**Acceptance Test Plan:** A comprehensive document outlining the scope, objectives, approach, schedule, and criteria for the acceptance testing phase. This plan serves as a blueprint for conducting the tests that determine whether the software meets specified requirements.

**System/Integration Test Plan:** A detailed document specifying the procedures, test cases, data, and resources required for the system and integration testing phases. This plan ensures that the software components work together seamlessly and that potential integration issues are identified and addressed.

**Unit Test Plans/Turnover Documentation:** Individual plans for testing each software unit or component, outlining the specific tests to be executed and the expected outcomes. Turnover documentation includes information needed for transferring control from development to testing teams.

**Screen Prototypes:** Visual representations of the user interface screens or layouts, providing a visual reference for designers, developers, and testers. These prototypes help ensure the user interface aligns with requirements and expectations.

**Report Mock-ups:** Mock-ups or samples of the reports generated by the software, showcasing the layout, format, and content of various reports. These mock-ups help validate that the generated reports meet business needs.

**Defect/Incident Reports and Summaries:** Documentation of defects, anomalies, or incidents identified during testing, including details like steps to reproduce, severity, and status. Summaries provide an overview of the testing results and the state of identified issues.

**Test Logs and Turnover Reports:** Logs detailing the execution of each test case, including inputs, outputs, and any deviations from expected behavior. Turnover reports summarize the results of testing phases and provide recommendations for further action, such as releasing the software or conducting additional testing.

These test deliverables play a crucial role in ensuring the quality and reliability of the software. They provide a structured approach to testing, documentation of testing processes and outcomes, and a means of communication between development, testing, and other project stakeholders. Each deliverable contributes to the overall goal of producing a well-tested and reliable software product.

## 10. STAFFING AND TRAINING NEEDS

For the successful execution of the project's testing phases and to ensure comprehensive training for involved personnel, the following staffing and training needs have been identified:

**Staffing:**

**Tester Assignment:** At least one (1) full-time tester should be assigned to the project for the system/integration and acceptance testing phases. This tester will play a crucial role in ensuring the quality and functionality of the software.

**Part-Time Participation:** Initially, a person will be assigned part-time to participate in project reviews and other relevant activities. This early involvement will facilitate better understanding of the project's scope and requirements.

**Full-Time Assignment:** Approximately four months into the project, the part-time participant will transition to a full-time role as the primary tester. This dedicated commitment is essential for conducting thorough testing activities.

**Contingency Role:** In the event that a separate test person is not available, the project manager or test manager will assume the testing role. This ensures that testing responsibilities are fulfilled even if dedicated testers are unavailable.

**Training:**

**Interface Training:** Developers and testers need to be trained on the basic operations of the interface. This training will enable them to understand the processes, data exchange mechanisms, and potential challenges.

**Operations Staff Training:** The operations staff, responsible for managing communications in the production environment, requires complete training on the communications process. This training ensures they can effectively handle real-world data exchanges and resolve any operational issues.

By addressing these staffing and training needs, the project aims to ensure that all involved personnel are equipped with the necessary skills and knowledge to effectively contribute to the testing process and to operate the software in their respective roles. This approach promotes a smooth transition from development to testing and eventual production use, while maintaining a high standard of quality and usability.

## 11. RESPONSIBILITIES

| | TM | PM | Dev Team | Test Team | Client |
|---|---|---|---|---|---|
| Acceptance test documentation & Execution | X | X | | X | X |
| System/Integration test documentation & Execution | 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 and 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 Microsoft Project Management tool.

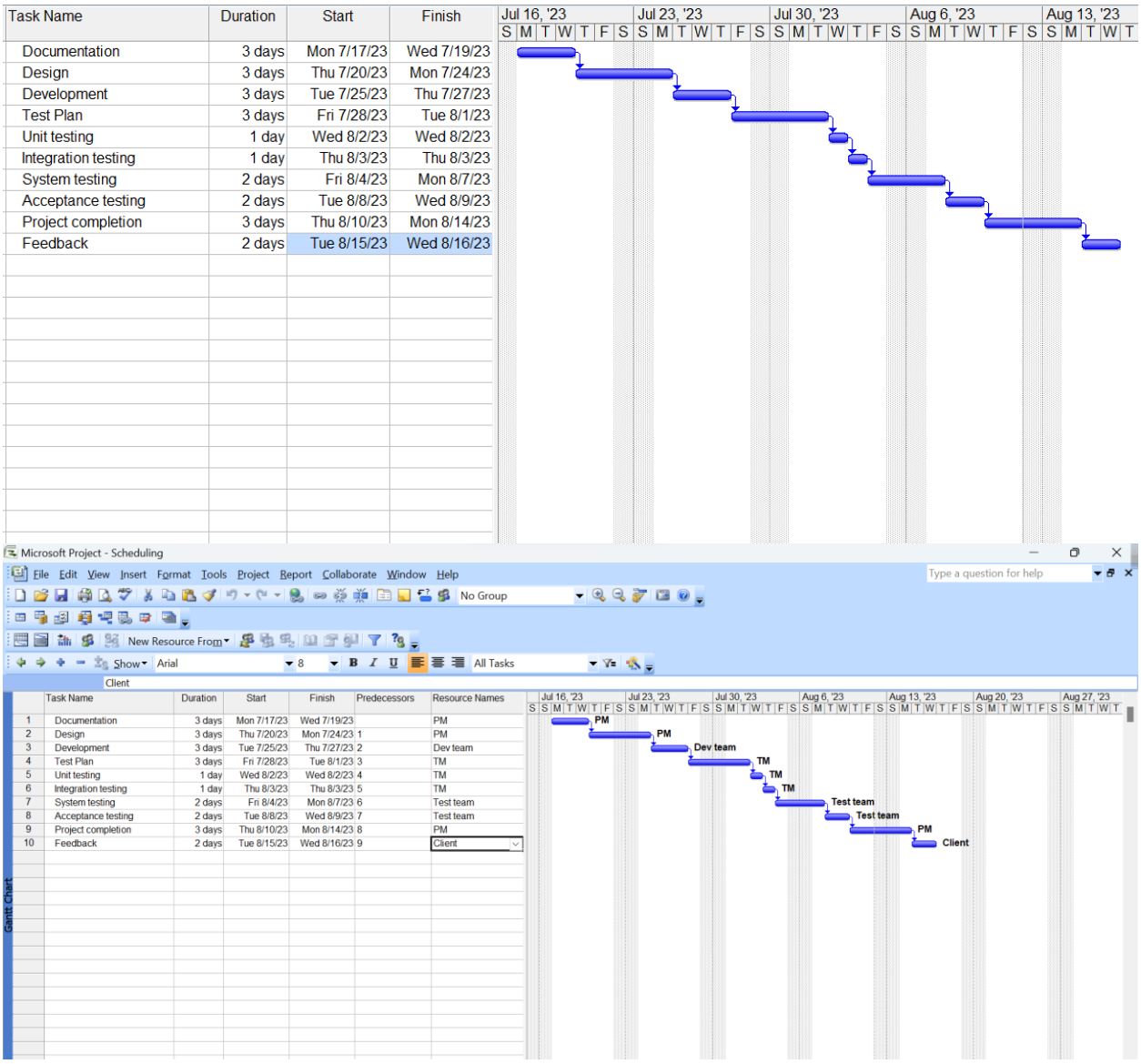



Figure1: Testing Schedule using Microsoft Project Management Tool

## 13. PLANNING RISKS AND CONTINGENCIES

Risks can have a big impact on a software development project's success. For instance, risks connected to the timetable can result in delays, which can increase project costs and even generate client displeasure. Inaccurate cost estimates can also result in cost-related hazards, which can have an adverse effect on the project's overall success and cause financial problems.

If assigned staff availability becomes an issue, prioritize and allocate available staff to critical tasks, such as document reviews and acceptance testing. This shortage may result in delays in document reviews and participation in the Acceptance testing process. Delays in reviews and testing could lead to schedule slippages, potentially affecting the overall project timeline.

Be prepared to adjust the review and testing schedules according to the availability of assigned staff. Communicate the revised schedules clearly to all stakeholders. Explore the possibility of temporary staffing to assist with document reviews and testing. Temporary staff could help alleviate the resource shortage and ensure timely completion of tasks.

Identify individuals within the team who can temporarily assist with reviewing documents and participating in testing, even if it's not their primary role. Cross-training can help distribute workload and prevent bottlenecks. Where possible, identify tasks that can be worked on in parallel to compensate for potential delays in reviews and testing. This approach can help keep the project moving forward despite resource limitations.

By proactively addressing the risk of limited assigned staff and implementing these contingency measures, the project can mitigate the potential negative impacts on the schedule and ensure that the review and testing processes are executed effectively and without compromising quality.

## 14. APROVALS

| | |
|---|---|
| Project Manager | Md. Kamruzzaman |
| Developer | Sabiha Rahman |
| Test Lead | Sabiha |
| Test Planner | Rahman |
| Tester | Md. Kamruzzaman |
| End User | Rony<br>Rafi<br>Rahi<br>Sabiha |