American International University-Bangladesh (AIUB)
Department of Computer Science
Faculty of Science &Technology (FST)
Summer 22 23

Section: A
Software Quality Assurance and Testing

Tour and Travel Management System

A Report submitted
By

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Date:

Software Test Plan

for

<Tour and Travel Management System >

Version 1.0 approved

Prepared by <Md. Asif Al Mamun, Md. Zahid Hasan, Adeepta Shushil Shuvo>

< American International University- Bangladesh>

<13.08.2023>

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Sign:

Date:

Table of Contents

Revision History

Revision	Date	Updated by	Update Comments
01	2023.08.11	Md. Asif Al Mamun	First Draft
02	2023.08.11	Md. Zahid Hasan	Second Draft
03	2023.08.11	Adeepta Shushil Shuvo	Third Draft

1. TEST PLAN IDENTIFIER:RS-MTP01.3

2. REFERENCES

- o Software Requirement Specification (SRS) Document

3. INTRODUCTION

In the highly competitive travel and tourism industry, it is crucial for companies to provide a seamless and enjoyable experience for their customers. A Tours and Travel Management System is an essential tool for companies to manage their operations, bookings, and customer interactions. However, even the most well-designed software can have errors or defects that can affect the user experience and damage the company's reputation. This is where software testing comes in.

Software testing is the process of evaluating a software system or application to ensure that it meets its specified requirements and works as expected. In the context of TTMS, software testing helps to identify any bugs, errors, or inconsistencies that could affect the user's ability to book and manage their travel plans. Testing can also ensure that the TTMS is secure, reliable, and performs well under different scenarios, such as high user traffic or unexpected downtime.

Background to the Problem

In the rapidly evolving landscape of travel and tourism, the need for efficient and comprehensive tour and travel management systems has become increasingly evident. Traditional manual processes for booking, itinerary planning, and customer management have proven to be time-consuming, error-prone, and incapable of meeting the demands of modern travelers. As the travel industry caters to a diverse range of clients with varying preferences, the necessity for a streamlined and automated solution has never been more critical.

Travel agencies and tour operators face challenges such as managing multiple bookings simultaneously, ensuring accurate itinerary creation, coordinating with various service providers (hotels, transportation, guides, etc.), and delivering an exceptional customer experience throughout the travel journey. Furthermore, the global nature of the travel industry demands real-time information exchange and communication across different time zones and geographies. Inefficiencies in these processes not only lead to customer dissatisfaction but also hinder the growth and profitability of travel businesses.

Solution to the Problem

Our proposed solution centers around the creation of a dynamic and user-intuitive web-based platform, offering a transformative answer to these challenges. This Tour and Travel Management System is poised to redefine the operations of travel agencies and elevate the travel experience for tourists.

Through an Online Booking and Reservation interface, travelers can seamlessly navigate through a variety of tour packages, tailoring their choices according to their preferences for destinations, accommodations, transportation, and activities. This eradicates the need for conventional physical visits or time-consuming phone calls for booking confirmation.

Real-time Itinerary Management becomes a reality for travelers with access to a personalized dashboard post-booking. Any modifications or updates to the itinerary, such as flight adjustments, alterations in hotel arrangements, or changes in planned activities, are instantaneously reflected in real time.

Enabling Supplier Collaboration, our system serves as a conduit for effective communication between travel agencies and diverse service providers, including airlines, hotels, and local tour operators. This seamless integration ensures precise availability information, curbing booking inaccuracies and providing a more streamlined experience for both travelers and service providers.

To cater to the contemporary traveler's penchant for instantaneous access, our development includes a Mobile App. This app empowers travelers to access and manage their itineraries seamlessly via their smartphones. It also offers features like GPS-based navigation, timely travel alerts, and essential emergency contacts.

Secure Payment Gateway Integration ensures that travelers can conveniently and securely settle payments for their bookings and associated services within the confines of the platform. This minimizes the inherent risks associated with traditional payment channels.

Underpinning our approach is Data Analytics and Reporting, which furnishes travel agencies with invaluable insights into customer preferences, emerging travel trends, and peak travel seasons. This data-driven methodology equips agencies to tailor their offerings and marketing strategies with heightened efficacy.

In summation, the Tour and Travel Management System we are pioneering bridges the gap between conventional travel management paradigms and the evolving expectations of the travel industry and its clientele. By furnishing an integrated, user-centric platform, we are committed to elevating the efficiency, transparency, and overall travel experience for both travel agencies and tourists alike.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

1. System Login
   - The software shall allow users to login with their given username and password.
   - 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.
   - If the number of login attempt exceed its limit (5 times), the system shall block the user account login for one hour.

Priority Level: High
Precondition: user have valid user id and password

2. System Registration
   - The software shall allow users to register with their name, email, username, password, phone number.
   - If the username is already used in the system, the system shall give an error message.
   - Without provided valid username, email or phone number, the user shall not register.

   Priority Level: High
   Precondition: user must provide proper information

3. User can edit and update profile
   - The software shall allow users to update and delete profile information.
   - The system shall store the updated information of the users.

   Priority Level: Medium
   Precondition: user must update profile with valid information.

4. Admin can add, update and delete package information
   - The software shall allow admin to add, update and delete package information.
   - The system shall store the updated information of the packages.
   - If the package already exists, system shall give warning.

   Priority Level: Medium
   Precondition: Admin must add packages with detailed information.

5. Admin can assign manager
   - The software shall allow admin to add manager to manage the packages.
   - The system shall store the information of the manager.

   Priority Level: Medium
   Precondition: Admin must give major access to manager.

6. User can order packages with online payment
   - The software shall allow users to order packages and make payment online.

   Priority Level: Medium
   Precondition: User must provide valid payment information.

7. User can rate the service
   - The software shall allow user to give ratings and feedback.
   - The ratings of the packages shall be updated in the system.

   Priority Level: Medium
   Precondition: Users must give ratings between 1 to 5 stars.

4.2 System Quality Attributes

Quality of a software may vary from others. Different perspectives can be taken into consideration when defining quality.

The following factors are used to measure Software Development Quality. Each attribute can be used to measure product performance. These attributes can be used for Quality assurance as well as Quality control.

- **Reliability:** By this quality, a software's consistency is measured in certain situations. Whether it is reliable to the user or not.
- **Maintainability**: Software should be easy to handle and maintain for future development. A developer should be able to add the code to the existing system code to upgrade/add new features on time basis.
- **Usability:** A system should be fully user friendly. It should be easy to use, learn and also navigate because it'll be used by all sorts of people including uneducated and older people.
- **Portability:** A system should be a portable one in terms of costing and technical issues.
- **Correctness:** The application should be correct in terms of its functionality, calculations used internally and the navigation should be correct. This means that the application should adhere to functional requirements.
- **Efficiency**: This quality is one of the major system quality. Main idea of making this system is to pay the fare instantly without any hassle and in less time. A system should utilize the system's processor and ram to make the system and usability fast.
- **Integrity or Security**: Integrity comes with security. System integrity or security should be sufficient to prevent unauthorized access to system functions, prevent information loss, ensure that the software is protected from virus infection, and protect the privacy of data entered into the system.
- **Testability**: The system should be easy to test and find defects. If required, it should be easy to divide into different modules for testing.
- **Flexibility:** Should be flexible enough to modify. Adaptable to other products with which it needs interaction. Should be easy to interface with other standard 3rd party components
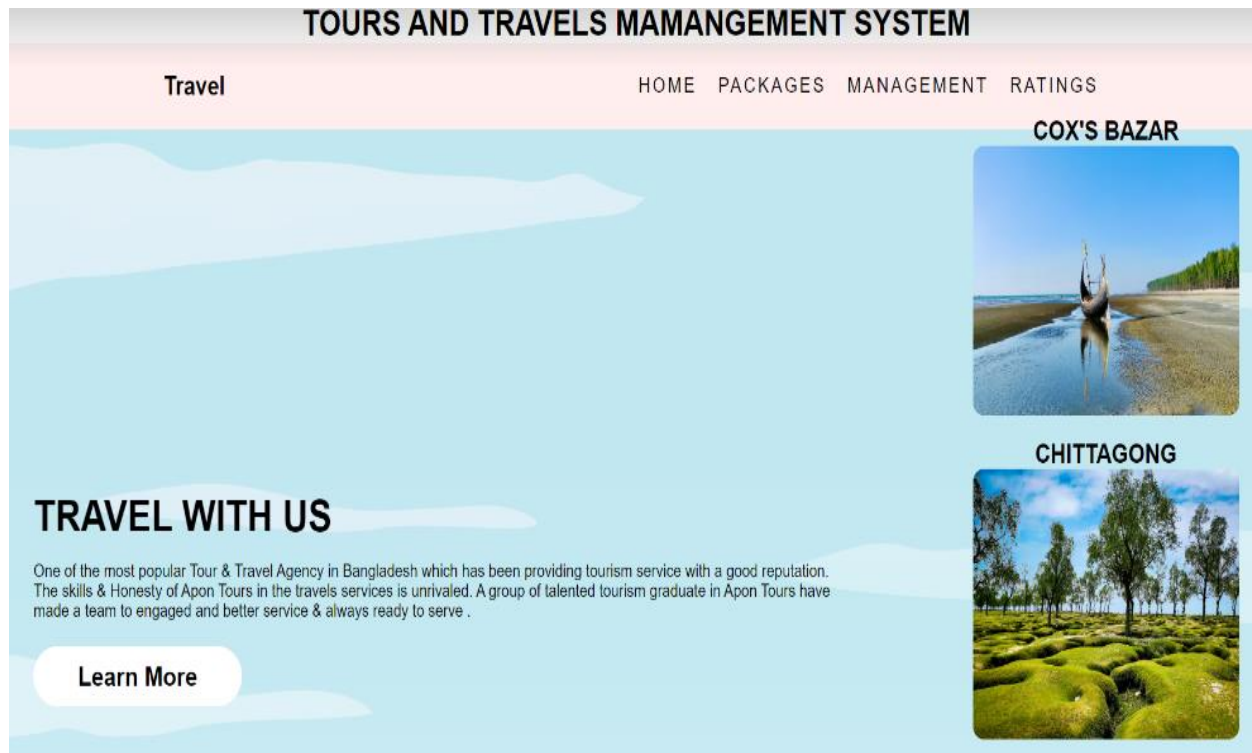
4.3 System Interface

Figure 1: Home page

Tour and Travels Management System

General
First Name

[   ]

Last Name

[   ]

Username

[Him   ]

Password

[...   ]

Confirm Password

[   ]

Gender ○ Male ○ Female

Contact
Email

[   ]

Mobile no

[   ]

Address
Street/House/Road

[   ]

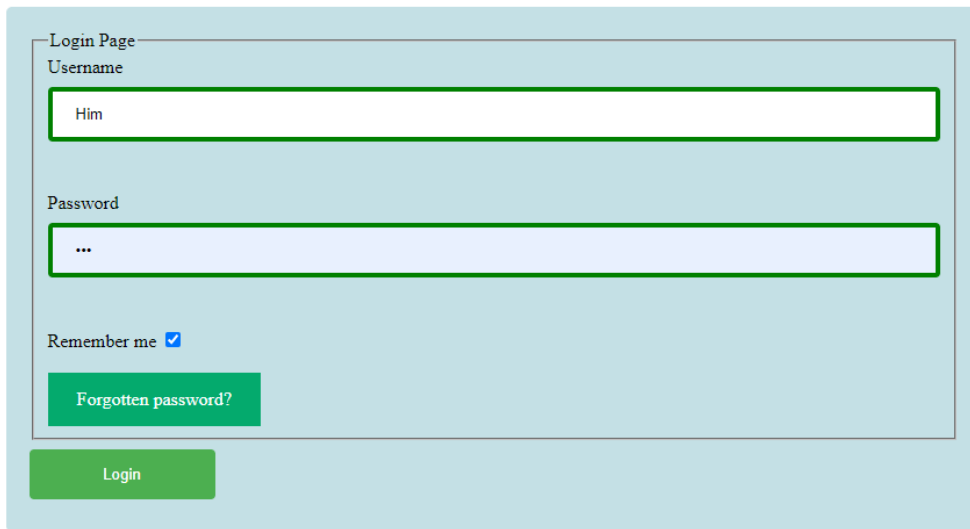Country

[Bangladesh   ⌄]

[Register]

Already have an account?
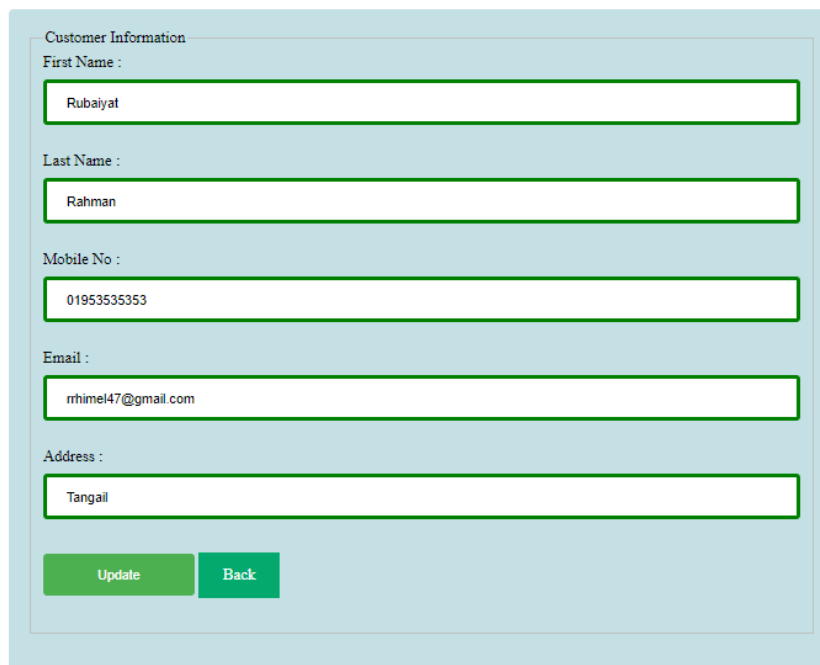[Login]

Figure 2: Registration Module of the System

Tour and Travels Management System

Login Page
Username

Him

Password

...

Remember me ☑

Forgotten password?

Login

Figure 3: Login Module of the System

Tour and Travels Management System

Customer Information
First Name :

Rubaiyat

Last Name :

Rahman

Mobile No :

01953535353

Email :

rrhimel47@gmail.com

Address :

Tangail

Update   Back

Figure 4: User Profile Module

Tour and Travels Management System

Package List :

Package Name	Hotel Name	Location	Cost	Rating
bandarban	bandarban	bandarban	5000	4.8
CoxBazar	Seagul	coxbazar	5000	4.5
Sylhet	Grand sultan	Sylhet	5000	4.8

Compare | Search | Back | Logout

Figure 5: Package Lists

Tour and Travels Management System

Add Package

Package Information

Package Name

Hotel Name

Location

Cost

Rating

Add

Figure 6: Admin Add Package Module

Tour and Travels Management System

Package Name	Hotel Name	Location	Cost	Rating	Order
bandarban	bandarban	bandarban	5000	4.8	Click here
CoxBazar	Seagul	coxbazar	5000	4.5	Click here
Sylhet	Grand sultan	Sylhet	5000	4.8	Click here

Go back   Logout

Figure 7: Order Package Module

Tour and Travels Management System

You have ordered a package

Package Information

Package name : bandarban

Hotel Name : bandarban

Location : bandarban

Cost : 5000

Rating : 4.8

Cencel   Make Payment

Figure 8: Package Information Module

Tour and Travels Management System

Give Rating

General

Package Name : Cox's Bazar

Hotel Name : Seagul

Location : Cox's Bazar

Cost : 5000

Give ratings ○ 1* ○ 2* ○ 3* ○ 4* ○ 5*

Confirm

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Figure 9: Ratings and Feedback Module

4.4 Project Requirements

Environment & resource needs

- Microsoft Windows 10 with Service Pack 1 or higher.
- Intel Core i5 or higher. (The 7 th generation)
- 4 GB of RAM (minimum).
- 128 GB of free disk space for installation, plus extra space for temporary files during test runs.
- Mouse and keyword.

Software Requirements:

- Automated Testing tool: selenium.
- Web Browsers: Internet Explorer/ Mozilla Firefox/ Google Chrome.
- Database: MySQL 5.7.12, 8.0.12+ (see note below on MySQL 8 support. PostgreSQL 10.0+.
- Eclipse, Microsoft Visual Studio code.

Effort Estimation:

We used COCOMO model for project estimation. The type of the developed product is Semi-detached. So, coefficient=3.0, P=1.12, T=0.35, SLOC=20000

$$\text{Effort} = PM = \text{Coefficient}*(SLOC/1000) \wedge P$$

$$= 3.0*(20000/1000) \wedge 1.12$$

$$= 86 \text{ person months}$$

$$\text{Development Time} = DM = 2.50*(PM) \wedge T$$

$$= 2.50*(86) \wedge 0.35$$

$$= 12\text{-week days}$$

$$\text{Required number of people} = ST = PM/DM$$

$$= 86/12 = 7.17 = 8$$

Budget Estimation:

Duration weeks = 12 weeks

Week days = 5 days

Working hours = 8 Hours

Per week working hours is = (5*8) hours
$$= 40 \text{ hours}$$

Total Working hours is = (40*12) hours
$$= 480 \text{ hours.}$$

Developer salary per hour = 500 BDT

Total developers Salary   = (500*480*8) BDT
$$= 1,920,000 \text{ BDT}$$

Expanse	Amount	Total Amount
Salary for team		1,920,000 BDT
3 months office rent	3*10000	30,000 BDT
Electricity and othercosts		20,000 BDT

1 months Maintenancecost	5*10*1200	60,000 BDT
Travel Cost	1*5000	5,000 BDT
Total Cost		2,035,000 BDT
15% of total cost(profit)		305,250 BDT
Now total budget is		2,340,250 BDT

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 **Third-Party Integrations**: Features that rely on third-party services, such as weather widgets or external maps. As these integrations are often provided and maintained by external entities, their behavior is not directly under our control and does not require testing within our system.

o **Standardized UI Elements**: UI components that follow established design patterns and conventions, such as buttons, navigation menus, and headers. These elements are consistently present throughout the system and are unlikely to exhibit unexpected behavior.

o **System Start-Up/Shut Down**: Basic start-up and shut-down processes of the application might not need extensive testing unless they are known to have complex dependencies.

o **Common Browser Compatibility**: If your application is being developed for specific browsers and devices and follows modern web standards, you might not need to test every minor browser version for compatibility.

6. TESTING APPROACH

6.1 Testing Levels

In the testing approach for the Tour and Travel Management System, we will implement a multi-level testing strategy to ensure the comprehensive validation and verification of the system's functionality, performance, and usability. This strategy encompasses several testing levels that together contribute to the overall quality of the system.

Unit Testing: At the foundational level, unit testing will be performed to scrutinize individual components and modules of the system. This involves testing the smallest units of code to ensure their correctness and functionality. Unit tests will be written to verify that each module operates as intended and handles various inputs and scenarios appropriately.

Integration Testing: Moving beyond individual units, integration testing comes into play. This level of testing focuses on examining how different modules interact and collaborate within the system. The goal

is to identify any inconsistencies or miscommunications between modules and ensure that they integrate seamlessly.

Functional Testing: Functional testing forms a core component of our approach. This level of testing assesses the system's functional requirements, ensuring that each feature and functionality works as specified. It encompasses various scenarios, inputs, and interactions to validate that the system behaves as expected.

Usability Testing: Usability testing is crucial to gauging how well the system meets user expectations and needs. Real users will interact with the system to assess its overall usability, identifying any pain points, confusing elements, or areas that require improvement.

Performance Testing: Performance testing will assess the system's responsiveness and stability under different load conditions. This level of testing includes load testing, stress testing, and scalability testing to determine how the system performs under varying levels of user traffic.

Security Testing: Security testing will be employed to identify vulnerabilities, safeguard sensitive data, and ensure the system's resilience against potential threats. This level of testing aims to maintain the confidentiality, integrity, and availability of user and system data.

User Acceptance Testing (UAT): UAT is the final level of testing and involves real users testing the system in a real-world environment. Users will assess whether the system meets their requirements, ensuring that it aligns with their expectations and needs.

6.2 Test Tools

- o The Selenium Web driver Tool will be used for automated testing. We utilize this instrument to discover errors and verify that our systems are of high quality, responsive, progressive, and consistent.
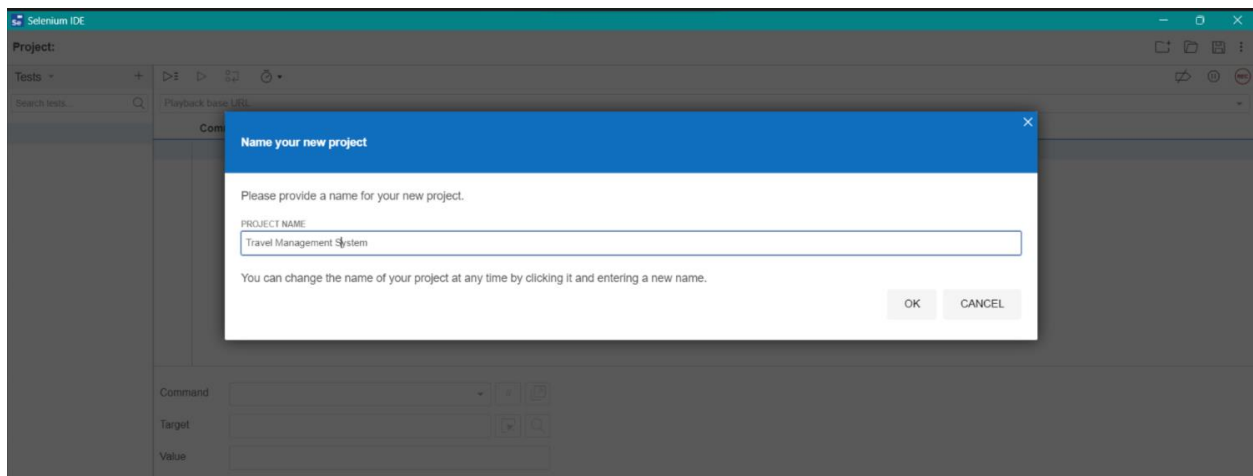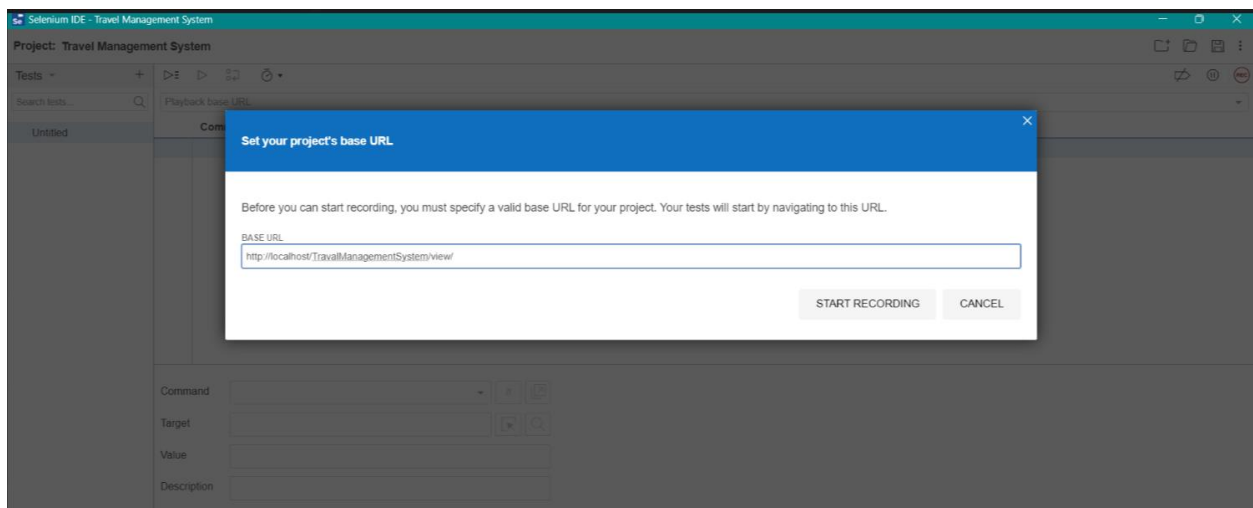
Figure: Create automated test module

Figure: Set Project URL
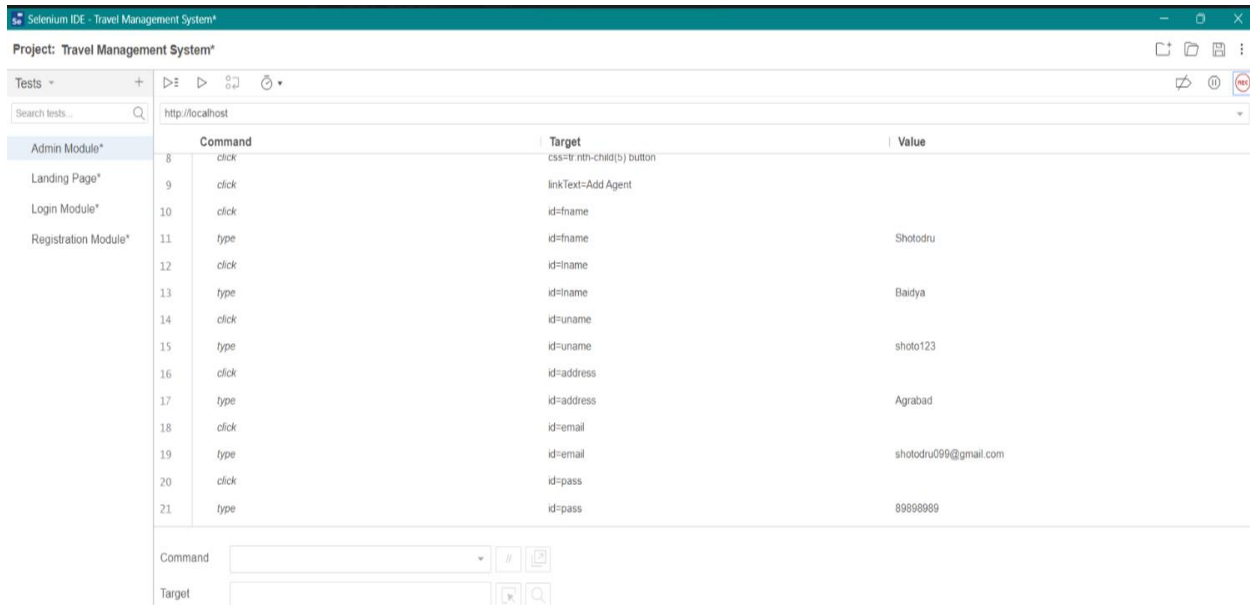
Figure: Test Admin Module

Figure: Log in Module

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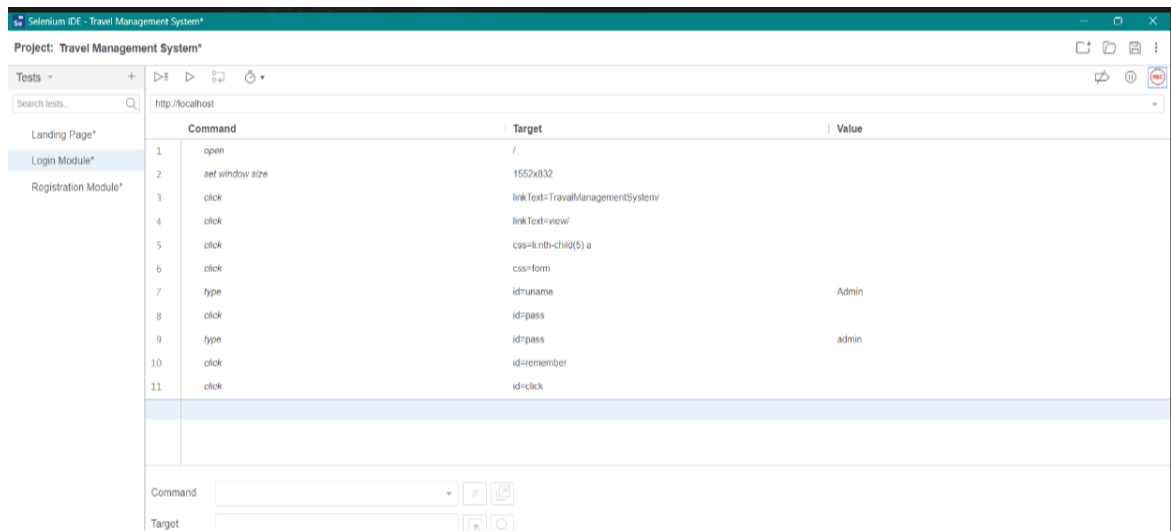
The test team will meet once in every week to evaluate progress to date and to identify error trends and problems as early as possible. The test team leader will meet with development and the project manager once every two weeks as well. These two meetings will be scheduled on different weeks. Additional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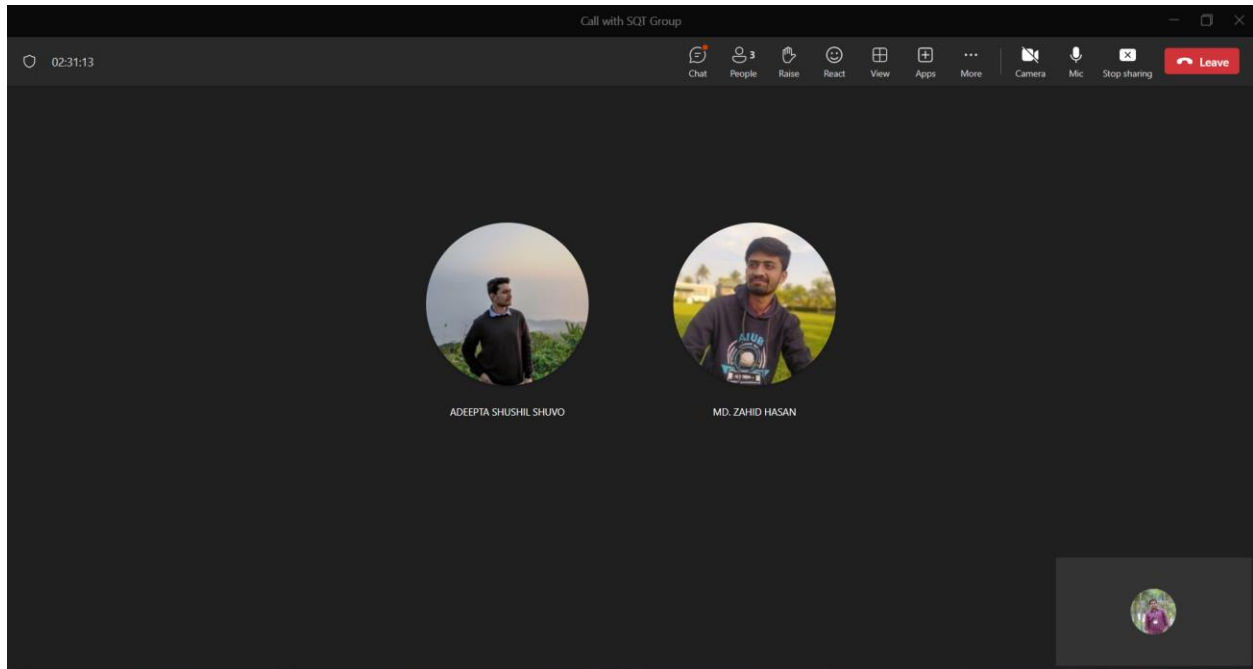

Figure: Group Meeting

7. TEST CASES/TEST ITEMS

Project Name: Tour and Travel Management System			Test Design by: Md. Asif Al Mamun		
Test case ID:FTM033			Test Designed date: 07.08.2023		
Test Priority (Low, Medium, High): High			Test Executed by: Md. Zahid Hasan, Adeepta Shushil Shuvo		
Module Name: Login Session			Test Executed date:10.08.2023		
Test Title: verify login with valid username and password					
Description: Test TTM Login page					
Precondition: Valid username and password in system Database					
Test steps	Test Data	Expected Result	Actual Results	Status (Pass/Fail)	
1. Go to website 2. Enter username 3. Enter password 4. Click submit	Username: Asif73 Password:12345 @asif	User should login into the admin dashboard the application	As expected	Pass	
Post Condition: User is validated with database and successfully login to account					

Figure 1: Test case for Login Feature.

Project Name: Tour and Travel Management System	Test Design by: Md. Zahid Hasan
Test case ID:FTM04	Test Designed date: 07.08.2023
Test Priority (Low, Medium, High): High	Test Executed by: Adeepta Shushil Shuvo,

	Md. Asif Al Mamun
Module Name: Test sign up page	Test Executed date:10.08.2023
Test Title: Verify sign up	
Description: Test TTM sign up	
Precondition: User must fill all required fields				

Test steps	Test Data	Expected Result	Actual Results	Status (Pass/Fail)
1. user go to website 2. Go the sign up page 3. Filed required fields 4. Click sign up	Name: Zahid Username: zahid73 Email:wahidsadi011@gmail.com Password:12345 @sadik	User go the login page	As expected	Pass
Post Condition: The user successfully sign up with the system				

Figure 2: Test case for Sign up Feature.

Project Name: Tour and Travel Management System	Test Design by: Adeepta Shushil Shuvo
Test case ID:FTM05	Test Designed date: 07.08.2023
Test Priority (Low, Medium, High): Medium	Test Executed by: Adeepta Shushil Shuvo
Module Name: verify search package	Test Executed date:10.08.2023

Test Title: TMM Dashboard search	
Description: Search offer package	
Precondition: user search by word and show all offer package					

Test steps	Test Data	Expected Result	Actual Results	Status (Pass/Fail)	
1. Go the website 2. search in search box 3. Click search button	Search: Thailand package	Show all Thailand package	As expected	Pass	
Post Condition: user successfully get search result					

Figure 3: Test case for Offer Package Feature

Project Name: Tour and Travel Management System	Test Design by: Md. Asif Al Mamun
Test case ID:FTM06	Test Designed date: 21.4.2023
Test Priority (Low, Medium, High): Medium	Test Executed by: Md. Asif Al Mamun
Module Name: verify update profile	Test Executed date:27.4.2023
Test Title: TMM user update profile	

Description: user profile update	

Precondition: user update his information successfully					
Test steps	Test Data	Expected Result	Actual Results	Status (Pass/Fail)	
1. Go the website 2.login his profile 3.go to his profile 4.click update profile	Name: Md. Asif Al Mamun Email: aasifalmamun @gmail.com Username: asifid73 Password:	User information update successfully	As expected	Pass	
Post Condition: User successfully get search result					

Figure 4: Test case for Update Feature

8. ITEM PASS/FAIL CRITERIA

The entrance criteria for each step of testing must be met before proceeding to the subsequent phase. The criteria for passing and failing are listed here.

• In accordance with the stated scenario, the expected outcome must occur for the design to be

deemed successful. Otherwise, this criterion must be failed.

• If an item any feature is tested over 10 times, but fails then it will be told as a failed case.

• Crashing of the system will be deemed a failure scenario

• After submitting any query if the system doesn't show the results, then it will be counted as a

failed case.

9. TEST DELIVERABLES

The following will be delivered

- o Test Plan
- o Test Cases
- o Test Scripts
- o Test Data
- o Execution Log
- o Defect Report
- o Test Summary Report
- o Screen prototypes

10. STAFFING AND TRAINING NEEDS

This project is also implemented for personal and test job integration. To generate everything decently at least we are recommended to have one – full timer tester for the purpose. The job will find challenging because of its execution process and working dedications. Some challenging stuffs and job task are discussed here below:

- o **Project manager**: Responsible for the overall project execution. The project manager leads the team to work from every side. Even in any critical situation, the project manager has to play a vital role to safe the project from getting dismissed. The project manager is included for the feasibility study to ending the project and delver to the client. So the project manager must have some quality experience and training in this sector.

- o **The Manager**: Responsible for creating expert test strategies, evaluating managing test cycles and recommending testing completion. The Manager must be qualified to evaluate professional standard test design and find out the needs of client.

- o **The developers and Engineers:** Response for designing and implementing the knowledge for design tests , creating methods, preparing test data's, executing the tests , Conducting automated test strategies and providing the test administrator with measurement information. Test engineers should be able to plan and execute any test case using automated technologies.

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.
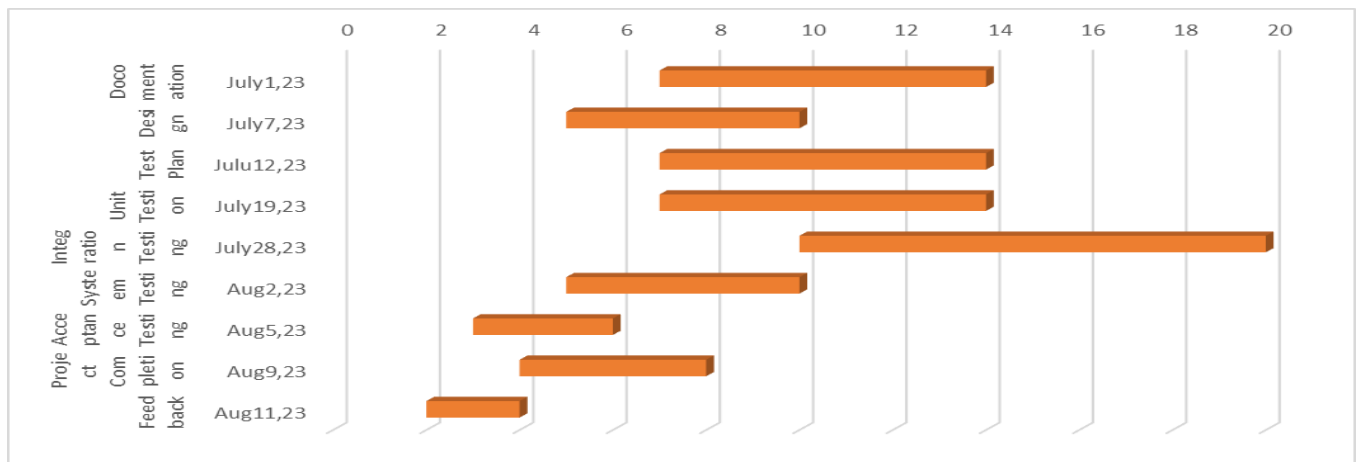

Figure: Gratt Chart

13. PLANNING RISKS AND CONTINGENCIES

As we embark on the development of the Tour and Travel Management System, it's essential to recognize potential risks that could impact the project's timeline, budget, and overall success. Mitigating these risks with well-thought-out contingencies will help ensure a smoother project execution. Here, we outline some of the key planning risks and the corresponding contingency strategies:

Technical Challenges:

- Risk: Unforeseen technical complexities or integration issues might arise during system development.

- Contingency: Allocate additional time in the project schedule for in-depth technical assessments and testing. Maintain close collaboration with technical experts to address challenges promptly.

Scope Creep:

- Risk: As the project progresses, new feature requests or changes might emerge, expanding the project scope beyond the initial plan.

- Contingency: Establish a robust change management process that requires formal approval for scope changes. Regularly review and prioritize new requests to prevent scope creep.

Resource Constraints:

- Risk: Shortages in human resources, technical expertise, or budget constraints might hinder project progress.

- Contingency: Cross-train team members to handle various roles, explore outsourcing options for specialized tasks, and maintain open communication with stakeholders regarding budget adjustments.

Vendor or Third-Party Dependencies:

- Risk: The project's progress might be affected if external vendors or third-party services experience delays or disruptions.

- Contingency: Identify backup vendors or alternative solutions in case of vendor-related delays. Maintain constant communication with third parties to monitor progress and anticipate potential issues.

Stakeholder Misalignment:

- Risk: Disagreements or misunderstandings among stakeholders regarding project goals, requirements, or priorities could lead to project delays.

- Contingency: Establish a robust communication plan that facilitates continuous stakeholder engagement. Conduct regular progress reviews to ensure alignment and promptly address any concerns.

Unanticipated Regulatory Changes:

- Risk: Changes in regulatory requirements or compliance standards might necessitate adjustments to the project's architecture or features.

- Contingency: Stay informed about relevant regulations and design the system to accommodate potential changes. Maintain flexibility in the project plan to address regulatory adjustments.

User Adoption Challenges:

- Risk: Users might encounter difficulties in adopting the new system, leading to lower satisfaction and utilization rates.

- Contingency: Develop a comprehensive user training and onboarding plan. Conduct usability testing with real users to identify pain points and refine the user experience.

Data Security Breaches:

- Risk: Data breaches or security vulnerabilities could compromise sensitive user information and damage the system's reputation.

- Contingency: Implement robust security measures, conduct regular security audits, and establish incident response protocols to address and mitigate security breaches promptly.

External Factors (Pandemic, Natural Disasters, etc.):

- Risk: Unforeseen external events, such as a pandemic or natural disaster, could disrupt project progress and resource availability.

- Contingency: Develop a remote work plan, ensure data backups, and establish a crisis management strategy to handle such situations effectively.

14. APROVALS

Project Sponsor – Asif	Approved
Development Management- Zahid	Approved
EDI Project Manager- Adeepta	Approved
RS Test Manager- Asif	Approved
RS Development Team Manager- Zahid	Approved
Reassigned Sales- Adeepta	Approved
Order Entry EDI Team Manager- Asif	Approved