

Internship On Software Quality Assurance (SQA)

BY

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This Report Presented in Partial Fulfillment of the Requirements
for the Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

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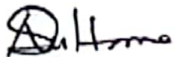
APPROVAL

This Internship titled “**Internship On Software Quality Assurance (SQA)**”, submitted by **Somiya ID: 213-15-4541** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as fair-to-middling for the partial fulfillment of the demand for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents.

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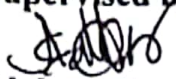
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DECLARATION

I hereby declare that this project has been done by us under the supervision of **Abdus Sattar**, Assistant Professor & Coordinator M.Sc, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

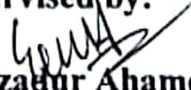
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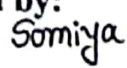
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This version maintains the original meaning and gratitude while enhancing the clarity and flow of the acknowledgment.

ABSTRACT

During my Software Quality Assurance (SQA) internship at Creative Soft Technology Ltd, I acquired hands-on experience across various stages of the software development life cycle (SDLC), with a focus on testing and quality assurance. I engaged in requirement analysis, test planning, test case design, and defect management, employing both manual and automated testing techniques using tools like Selenium, JUnit, and Jenkins. Collaborating within an Agile framework, I contributed to iterative development and continuous feedback loops, enhancing testing efficiency and software reliability. This report highlights the significance of robust SQA practices, including manual and automated testing, CI/CD pipelines, and the strategic use of SQA tools. Emphasizing collaboration between development and QA teams, it underscores the role of SQA in ensuring high-quality software that meets business and user expectations, and explores emerging trends like shift-left testing and AI-driven testing.

TABLE OF CONTENTS

CONTENTS	PAGE NO
Approval	i
Declaration	ii
Acknowledgement	iii
Abstract	iv
Table of contents	v-vii
List of figures	viii
CHAPTER 1:INTRODUCTION	1-5
1.1 Introduction	1
1.2 Background	1
1.3 Motivation	1
1.4 Introduction To The Company	1
1.5 Report Layout	2
CHAPTER 2: ORGANIZATION AND ACTIVITY	3-7
2.1 Organization Overview	3
2.2 Company Profile	3
2.3 Vision, Mission And Values	4
2.4 Declaration	5
2.5 Activity	6
2.6 Work Load	7

CHAPTER 3: ACQUIRED KNOWLEDGE AND TESTING CHALLENGES	8-18
	8
3.1 Testing System Creative Soft Technology Ltd	8
3.2 STLC Life Cycle	
3.3 White-Box Testing & Technique	9
3.4 Black-Box Testing & Techniques	10
3.5 Test Cases Writing	11
3.6 Test Scenario	11
3.7 Test Cases Design	13
3.8 Review Test Cases	14
3.9 Understand the SRS	15
3.10 Manual Testing Project Scenario	17
 CHAPTER 4: CONCLUDING STATEMENT	 19-20
4.1 Summary	19
4.2 Strategic Recommendations for Internship Program:	19
4.3 Ability to learn	19
4.4 Organization	19
4.5 Professional	20
4.6 University	20
 CHAPTER 5: CONCLUSION AND FUTURE GOALS	 21
5.1 Conclusion:	21
5.2 Future Goals:	21
 REFERENCES	 22

LIST OF FIGURES

FIGURES		PAGE NO
Figure 3.1	STLC Life Cycle	8
Figure 3.2	White-Box Testing & Technique	9
Figure 3.3	Black Box Testing Technique	10
Figure 3.4	Test Case Scenario	12
Figure 3.5	Test Cases Design	14
Figure 3.6	Project Test Case Scenario	17
Figure 5.2	Test Execution-Results	18
Figure 5.3	Test Scenario	18
Figure 5.4	Sign Up Page Scenario	18

CHAPTER 1

Introduction

1.1 Introduction

Quality assurance for software (SQA) is essential for ensuring that software products are reliable and trustworthy. By carefully analyzing and improving software engineering methods, QA helps to build consumer confidence and reduce expensive post-release issues. This process fosters an environment where efficiency and quality are prioritized, leading to better programs and tools.

1.2 Background

This post is about my internship at Creative Soft Technology Ltd. I chose this company because it's known for being a top IT service provider with impressive growth and quick project implementation using standard technologies. It's a well-established company with a great reputation.

1.3 Motivation

Testing involves evaluating a system to find any issues, while debugging is about identifying and fixing those issues. Testing can be done dynamically, where we actively use the software to find failures, or statically, where we examine the code without running it to spot potential problems. When testing uncovers an issue, debugging steps in to understand the root cause, analyze it, and fix it. Typically, debugging follows a straightforward process to diagnose and resolve the errors discovered during testing.

1.4 Introduction To The Company

Creative Soft Technology Ltd specializes in providing top-notch IT services, focusing on innovative and user-friendly software solutions. Known for their flexibility and affordability, they ensure high-quality, easy-to-use products. Their expertise in Software Quality Assurance (SQA) guarantees flawless applications tailored to customer needs. Additionally, they design automated systems that seamlessly integrate IT, ICT, and human resources, enhancing efficiency. Creative Soft Technology Ltd is committed to delivering reliable and effective solutions that exceed customer expectations.

1.5 Report Layout

The report is structured into four main sections, each covering different aspects of the internship experience:

Chapter One:

This chapter includes the introduction, background, motivation, and objectives. It also provides an overview of the report layout.

Chapter Two:

This chapter provides an overview of the organization and its activities.

Chapter Three:

This chapter covers the acquired knowledge with the journey to SQA & Testing, along with the challenges faced.

Chapter Four:

This chapter details the knowledge gained and provides concluding statements.

CHAPTER 2

ORGANIZATION AND ACTIVITY

2.1 Organization Overview

Creative Soft Technology Ltd is a company that specializes in providing top-notch information technology services, with a focus on creating innovative and user-friendly software solutions. Known for their flexibility and affordability, the company's solutions are designed to be both high quality and easy to use.

What sets Creative Soft Technology apart is its expertise in Software Quality Assurance (SQA) testing. This ensures that every software application developed is thoroughly tested and meets the specific needs and requirements of each customer, free of any flaws.

Creative Soft Technology Ltd. is also renowned for designing automated systems that seamlessly integrate IT, ICT, and human resources, creating smart and efficient connections within the workforce and beyond.

Here's a concise breakdown of the company's offerings:

- IT Services: Focused on internet-based software solutions.
- Innovation: Provides innovative, user-friendly, and flexible software.
- Quality Assurance: Expert in SQA testing to ensure flawless applications.
- Automation: Designs systems that link IT, ICT, and human resources efficiently.
- Affordability: Offers fairly priced solutions without compromising on quality.

Creative Soft Technology Ltd. is dedicated to delivering solutions that not only meet but exceed customer expectations, ensuring that every product is both reliable and effective.

2.2 Company Profile

Since its inception in January 2015, Creative Soft Technology Ltd. has swiftly risen to prominence, emerging as a trailblazing IT provider renowned for its innovative solutions and unwavering commitment to client satisfaction. Founded with a vision to cater to the diverse needs of businesses across various scales, the company has established itself as a trusted partner for small, medium, large, and blue-chip companies alike.

Creative Soft Technology Ltd. offers a comprehensive suite of services, including bespoke software solutions, website development, digital marketing, and consulting services. Its clientele spans across sectors, ranging from National Government agencies to Local Government bodies and private enterprises. With a client-centric approach and a focus on delivering tangible results, the company has cultivated strong relationships with over 20 customers and partners.

By the end of 2022, Creative Soft Technology Ltd. had successfully executed more than 50 projects, showcasing its prowess in translating vision into reality and delivering impactful solutions that drive business growth and innovation. With a track record of excellence and a commitment to staying ahead of industry trends, the company continues to lead the way in the ever-evolving landscape of information technology.

2.3 Vision, Mission and Values

At Creative Soft Technology Ltd., our vision, mission, and values form the cornerstone of our approach to delivering outstanding IT services and software solutions.

Vision

To be a leader in providing top-tier IT solutions that empower businesses to achieve their highest potential, fostering innovation and excellence in every project we undertake.

Mission

Our mission is to deliver best-in-class software development and web design services that drive success for our clients. We are committed to:

- Excellence: Creating high-quality, innovative software solutions that meet the unique needs of each client.
- Client Success: Helping our clients achieve their goals and maximize their return on investment through tailored, effective IT services.
- Continuous Improvement: Constantly refining our processes and services to stay ahead in the rapidly evolving technology landscape.

Values

- **Innovation:** We thrive on creativity and ingenuity, developing cutting-edge solutions that set us apart in the IT industry.
- **Quality:** Delivering high-quality services and products is at the heart of what we do, ensuring reliability and satisfaction for our clients.
- **Integrity:** We operate with honesty and transparency, building trust with our clients through ethical practices and consistent delivery.
- **Customer Focus:** Our clients' success is

2.4 Declaration

At Creative Soft Technology Ltd., we affirm that all information provided is accurate and truthful. The company commits that none of its members shall be restricted by any authority or face legal limitations, whether in private or non-governmental contexts, from entering into agreements or contracts in Uganda.

We pride ourselves on delivering IT Enablement Services to various government organizations and departments, both domestically and internationally. Some of our esteemed clients include:

- **The World Bank:** Providing advanced software solutions and IT services for enhanced operational efficiency.
- **Bangladesh Agriculture Bank:** Delivering secure and robust IT infrastructure to support banking services.
- **Asia Youth Conclave:** Offering innovative IT solutions for youth engagement and event management.
- **ANSAR-VDP:** Enhancing digital capabilities for national security and community service programs.
- **Hotel Sea Cox:** Implementing comprehensive IT systems to streamline hospitality operations.
- **United Nations Development Programme (UNDP):** Supporting global development initiatives with cutting-edge technology.

Through our commitment to excellence and integrity, we continue to build trust and foster long-lasting relationships with our clients worldwide.

Clients List:

- The World Bank
- Bangladesh Agriculture Bank
- Asia Youth Conclave
- ANSAR-VDP
- Hotel Sea Cox
- United Nations Development Programme (UNDP)

At Creative Soft Technology Ltd., we remain dedicated to providing exceptional IT services that meet the diverse needs of our valued clients.

2.5 Activity

At Creative Soft Technology Ltd., I have been recognized as a valued team member, and I deeply appreciate the fantastic work environment and the opportunities it offers. This company fosters a culture of respect and recognition, making it an excellent place to grow and thrive.

Activities and Contributions:

- **Project Management:** I have actively participated in managing various software development projects, ensuring timely delivery and high-quality outcomes.
- **Team Collaboration:** I have worked closely with cross-functional teams, contributing to the development of innovative IT solutions that meet client needs.
- **Client Interaction:** Engaging with clients to understand their requirements and provide tailored IT services has been a significant part of my role.
- **Skill Development:** Creative Soft Technology Ltd. has provided numerous opportunities for professional growth, allowing me to enhance my skills in software development and quality assurance.

Overall, being part of Creative Soft Technology Ltd. has been an enriching experience, and I am grateful for the supportive and dynamic work environment it provides.

2.6 Work load

In the SQA department, interns undergo a structured learning process tailored to their individual growth and professional development. Upon joining, my foremost responsibility was to grasp the fundamentals of SQA and assist my mentor by meticulously inspecting projects, identifying bugs, and compiling comprehensive reports for review.

Initially, I focused on mastering key aspects such as test case development, functional testing, non-functional testing, and UI design. Through dedicated training sessions and hands-on practice in simulated environments, I gained a solid understanding of these concepts before applying them to real-life projects under the guidance of my mentor.

Feedback played a pivotal role in my learning journey, as my mentor meticulously reviewed my work, highlighting areas for improvement and guiding me towards proficiency. As I progressed, I transitioned to more significant, real-life projects, where my tasks involved crafting test cases, pinpointing bugs, and other essential contributions crucial to project completion.

Regular discussions with my mentor provided opportunities to showcase my progress, discuss project complexities, and seek guidance on challenging tasks. Additionally, I actively sought out solutions to pertinent issues, demonstrating initiative and a problem-solving mindset in tackling project requirements.

Overall, this structured approach enabled me to acquire valuable skills, gain practical experience, and make tangible contributions to the success of the team's projects.

CHAPTER 3

ACQUIRED KNOWLEDGE AND TESTING CHALLENGES

In this chapter, we'll explore the Creative Soft Technology's software development process, focusing on the advantages of using the STLC (Software Testing Life Cycle). I'll also provide a detailed assessment of a project I was involved in.

3.1 Testing System Creative Soft Technology Ltd. :

STLC, short for Software Testing Life Cycle, is a structured and systematic approach to testing software and systems. It involves a series of stages, tasks, and deliverables designed to ensure the quality and reliability of the software being developed.

3.2 STLC Life Cycle

The Software Testing Life Cycle (STLC) is a structured process for ensuring software quality and reliability. It involves stages such as requirement analysis, test planning, test design, environment setup, test execution, defect reporting, regression testing, and test closure. Each stage aims to systematically detect and fix defects early in development, ensuring that the software meets high standards and user expectations before release.

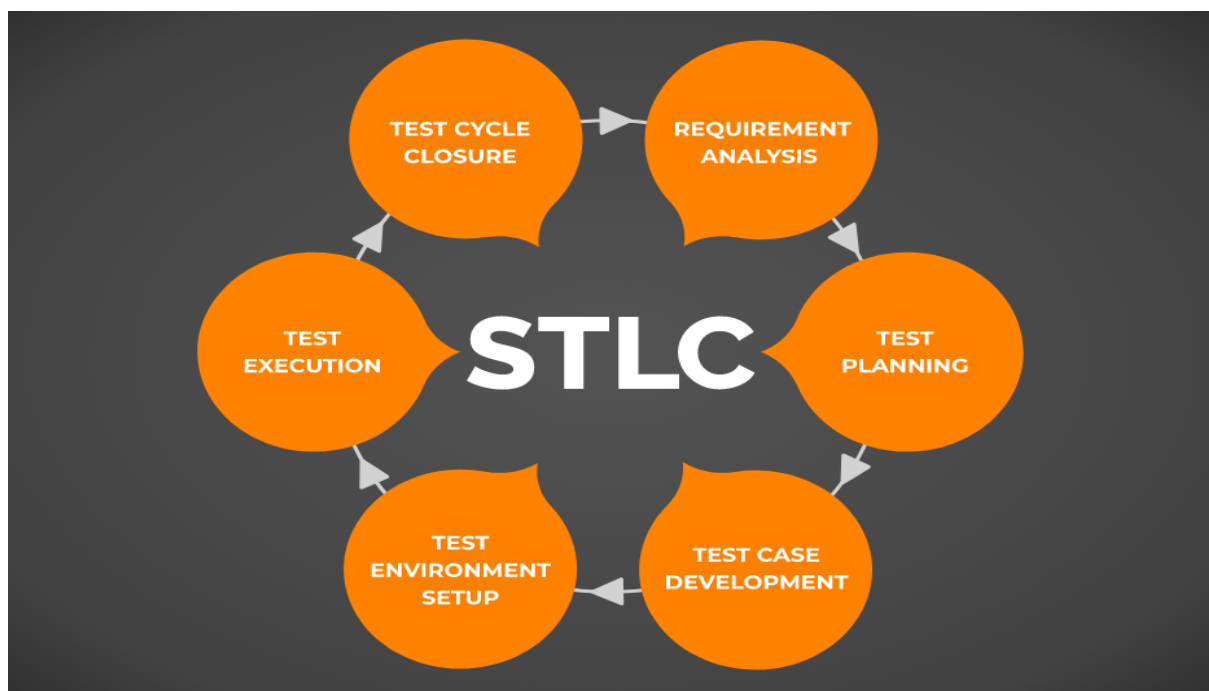


Figure 3.1 STLC Life Cycle

3.3 White-Box Testing & Technique

White-Box Testing, also known as clear box testing or glass box testing, is a software testing approach that examines the internal structures and workings of a software application. Unlike black box testing, which focuses solely on functionality, white-box testing delves into the internal code, data structures, and design aspects of the software. Its goal is to ensure that the software functions correctly based on its internal logic and that all code paths and conditions are tested thoroughly.

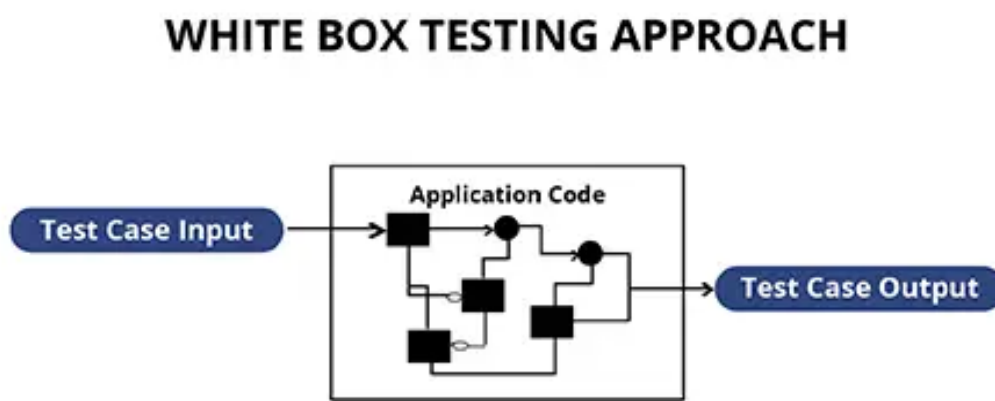


Figure 3.2 White Box Testing Technique

Techniques Used in White-Box Testing:

1. **Statement Coverage:** Ensures that every line of code in the software is executed at least once during testing.
2. **Branch Coverage:** Tests all possible branches within the code, including both true and false outcomes of conditional statements.
3. **Path Coverage:** Checks that every possible path through the software's control flow is tested, ensuring thorough execution of code paths.
4. **Condition Coverage:** Verifies that all logical conditions in the code are tested, including both true and false conditions.
5. **Loop Coverage:** Tests the functionality of loops by ensuring that loops execute zero times, once, and multiple times.

These techniques help testers uncover errors in the internal logic of the software and ensure comprehensive test coverage across different aspects of the code structure and design.

3.4 Black-Box Testing & Techniques

Black-Box Testing is a software testing technique where testers evaluate the functionality of an application without knowing its internal structure, paths, or workings. This approach focuses solely on inputs and outputs, assessing whether the software behaves as expected based on its specifications and requirements. It is also referred to as Behavioral Testing because it examines how the software behaves in response to different inputs.

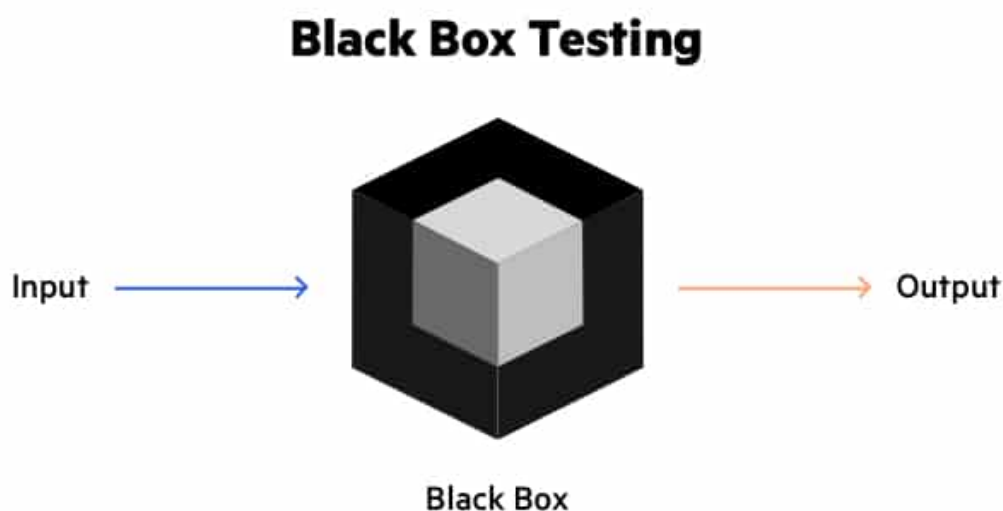


Figure 3.3 Black Box Testing Technique

Techniques Used in Black-Box Testing:

1. **Equivalence Partitioning:** Divides input data into partitions or groups that are expected to exhibit similar behavior, allowing testers to reduce the number of test cases.
2. **Boundary Value Analysis:** Tests input values at the boundaries of valid and invalid partitions to uncover errors at the edges of acceptable ranges.

3. **State Transition Testing:** Evaluates the behavior of the software in response to transitions between different states or conditions.
4. **Decision Table Testing:** Tests software behavior against combinations of different input conditions, determining expected outcomes based on defined rules.
5. **Error Guessing:** Involves testers using their domain knowledge and experience to anticipate potential errors in the software based on typical usage scenarios.

Black-Box Testing ensures that software meets functional requirements and behaves correctly from a user's perspective, regardless of its internal structure or design.

3.5 Test Cases Writing

A test case is a specific instance selected by a tester to determine whether an application, system, or its component functions correctly. It serves as documentation outlining the steps and conditions used to validate software features and functionalities.

Key Components of a Test Case:

- **Test Case ID:** Unique number to track it.
- **Description:** Quick explanation of what it checks.
- **Steps:** Detailed list of what testers do.
- **Expected Results:** What should happen if it works right.
- **Pass/Fail Criteria:** How to decide if it passed or failed.
- **Test Data:** Info used during testing.
- **Post Condition:** How things are after the test.

Importance of Test Cases:

Writing effective test cases is crucial for thorough testing of software systems, ensuring they meet user expectations and business requirements while maintaining high standards of reliability and functionality.

3.6 Test Scenario

Test Case Scenario: Login Functionality

Test Case ID: TC 001 - TC 005

Test Case Description: Verify the login functionality of the application to ensure users can successfully access their accounts.

Steps to Follow:

1. Navigate to the login page of the application.
2. Enter valid username and password credentials.
3. Click on the “Login” button.

Expected Results:

- The user should be logged into their account.
- The home/dashboard page should be displayed.
- Any error messages related to invalid credentials should not appear.

Pass/Fail Criteria:

- Pass: User successfully logs in and is directed to the home/dashboard page.
- Fail: User encounters an error message indicating invalid credentials or is not redirected to the expected page.

Test Data:

- Valid username: example_user
- Valid password: Password12

A	B	C	D	E	F	G	H	I	J
Test Case for Daraz						Project Info			
Project Name		Daraz				Description	Ecommerce Site		
SQA Eng. Name		Somiya				Technology	HTML, CSS, React, PHP, MySQL		
Date		24 June 2024							
SL	Test Case ID	UI	Case	Test Data	Steps	Expected Result	Actual Result	Status	Comment
1	TC 001	Home Page	Page Loading	N/A	1. Make Sure Internet Connected 2. Type In Browser https://member.daraz.com.bd/user/login	Page should be loaded Successfully	as expected	Pass	
2	TC 002		Onclick field value validation	N/A	Type something in the email field	A message shown Like The user should be logged into their account.	as expected	Pass	The validation Message will be while text length is under 6
3	TC 003		Password field has charecter mask	N/A	Type something in the password field	input should be masked or hidden	as expected	Pass	
4	TC 004		Successfully Login	N/A	Type correct email and password to login	Logged In Successfully	as expected	Pass	
5	TC 005		Redirecting to Home page or previous page after Login	N/A		Redirected to Home page or previous page after Login	as expected	Pass	

Figure 3.4 Test Case Scenario

3.7 Test Case Design

Test case design is a fundamental process in Software Quality Assurance (SQA), crucial for ensuring the functionality, reliability, and performance of software systems. During my SQA internship, I engaged in a structured test case design process that encompassed several key steps:

1. **Requirement Analysis:** Understanding and analyzing software requirements to identify testable scenarios and functionalities.
2. **Test Scenario Identification:** Identifying and prioritizing test scenarios based on business requirements, user stories, and functional specifications.
3. **Test Case Creation:** Writing detailed test cases that include:
 - **Test Case ID:** Unique identifier for tracking.
 - **Description:** Clear and concise description of the test case objective.
 - **Steps to Reproduce:** Detailed steps to execute the test, including inputs and expected outputs.
 - **Expected Results:** Anticipated outcomes or behaviors when executing the test steps.
 - **Pass/Fail Criteria:** Criteria for determining the success or failure of the test case.
 - **Test Data:** Specific inputs or conditions required to execute the test case.
 - **Post-conditions:** State of the system after test execution.
4. **Tool Utilization:** Leveraging test management tools like TestRail or QMetry to create, organize, and manage test cases efficiently. These tools facilitate collaboration, version control, and reporting.
5. **Review and Refinement:** Collaborating with peers and stakeholders to review test cases for completeness, clarity, and alignment with requirements. Incorporating feedback and refining test cases as necessary.
6. **Execution and Reporting:** Executing test cases to validate software functionality, recording test results, and documenting any deviations from expected outcomes. Generating test reports to communicate findings and track testing progress.

	A	B	C	D	E	F	G	H	I	J
1	Test Case for Daraz						Project Info			
2	Project Name			Daraz			Description	Ecommerce Site		
3	SQA Eng. Name			Somiya			Technology	HTML, CSS, React, PHP, MySQL		
4	Date			24 June 2024						
5										
6										
7	SL	Test Case ID	UI	Case	Test Data	Steps	Expected Result	Actual Result	Status	Comment
8										
9										
10										
11										
12										
13										
14										

Figure 3.5 Test Case Design

3.8 Review Test Cases

Reviewing test cases is a crucial step in Software Quality Assurance (SQA) to ensure that software meets its intended requirements and functions correctly. This process involves meticulously examining test case structures, verifying coverage of software requirements, and assessing the clarity and completeness of test steps and expected results. By conducting thorough reviews, SQA teams can identify potential issues early, maintain consistency in testing practices, and ensure that software applications perform reliably before they are deployed.

1. Understand the Requirements:

- **Review Requirements Documentation:** Take a close look at the software requirements document to understand how the system should behave and what it needs to do.
- **Clarify Ambiguities:** If there are any unclear points or questions about the requirements, discuss them with stakeholders or the development team to get clear answers.

2. Review Test Case Structure and Format:

- **Consistency:** Make sure that all test cases follow the same structure and format consistently across the entire test suite.
- **Template Adherence:** Check that each test case fits into the organization's standard test case template or format.

3. Verify Test Coverage:

- **Requirement Coverage:** Double-check that every single software requirement has a corresponding test case to confirm that it works as expected.

- **Functional Coverage:** Ensure that the test cases cover all the different functions and scenarios that the software is supposed to handle.

4. Check Test Steps and Expected Results:

- **Accuracy:** Review the test steps to ensure they are clear and describe exactly what needs to be done during testing.
- **Completeness:** Check that the expected results are clearly defined for both positive outcomes (when things work as expected) and negative scenarios (when they don't).
- **Reproducibility:** Make sure that the steps in the test cases are easy to follow and can be repeated by testers during testing.

5. Assess Test Data and Preconditions:

- **Test Data Availability:** Confirm that each test case specifies any specific data or input values needed for running the tests effectively.

3.9 Understanding the Software Requirements Specification (SRS)

The Software Requirements Specification (SRS) is a detailed document that outlines what a software system is supposed to achieve and how it should perform. It's like a roadmap that describes the activities the software needs to do to meet the needs of everyone involved, such as businesses and users.

Key Sections of an SRS:

1. **Introduction:** This section gives an overview of the software project, explaining its purpose and what it aims to accomplish.
2. **General Description:** Here, you'll find information about the software's main features, functions, and who will use it.
3. **Functional Requirements:** These describe specific tasks and operations that the software must be able to perform, often described in terms of user actions.
4. **Interface Requirements:** This part explains how the software will connect and interact with other systems or devices.
5. **Performance Requirements:** It sets expectations for how fast the software should respond, how many users it can handle at once, and how reliable it needs to be.
6. **Design Constraints:** Any limits or rules that must be followed when designing and building the software are detailed here, such as legal requirements or technical

restrictions.

7. **Non-Functional Attributes:** These include qualities like how easy the software is to use, how secure it needs to be, and how well it should work with other software.
8. **Preliminary Schedule and Budget:** This section outlines the initial plan for when the software will be developed and how much it will cost.
9. **Appendices:** Additional details, charts, or technical specifications that support the main parts of the SRS are included here.

Uses of SRS Document:

- **Communication:** Helps everyone involved in the project understand what needs to be done and how the software should work.
- **Baseline:** Provides a reference point to check if the final software meets the original requirements.
- **Guidance:** Guides the team through designing, building, and testing the software to make sure it meets everyone's needs.

FAQs on SRS Format: Answers common questions about how the SRS is structured and what each part means.

Conclusion: Summarizes why the SRS is important for ensuring that the software created meets the goals and expectations set out at the beginning.

3.10 Manual Project Scenario

Test Case for Daraz			
Project Name		Daraz	
SQA Eng. Name		Somiya	
Date		24 June 2024	
SL	Test Case ID	UI	Case
1	TC 001	Home Page	Page Loading
2	TC 002		Onclick field value validation
3	TC 003		Password field has charecter mask
4	TC 004		Successfully Login
5	TC 005		Redirecting to Home page or previous page after Login

Figure 3.6 Project Test Case Scenario

SL	Test Case ID	UI	Case	Test Data	Steps	Expected Result	Actual Result	Status	Comment
1	TC 001	Home Page	Page Loading	N/A	1. Make Sure Internet Connected 2. Type In Browser https://member.daraz.com.bd/user/login	Page should be loaded Successfully	as expected	Pass	
2	TC 002		Onclick field value validation	N/A	Type something in the email field	A message shown Like The user should be logged into their account.	as expected	Pass	The validation Message will be while text length is under 6
3	TC 003		Password field has character mask	N/A	Type something in the password field	input should be masked or hidden	as expected	Pass	
4	TC 004		Successfully Login	N/A	Type correct email and password to login	Logged In Successfully	as expected	Pass	
5	TC 005		Redirecting to Home page or previous page after Login	N/A		Redirected to Home page or previous page after Login	as expected	Pass	

Figure 3.7 Test Execution-Results

BUG ID	MODULE	URL	ISSUES	DESCRIPTION	FEEDBACK	ATTACHMENT	SEVERITY	PRIORITY
BI_001	Home	https://winagrolimited.com/	Video background not showing in page content	The page content with heading ""Feeding the globe and looking after the environment."" has a video background, but it's not shown in responsive mode.	Video background should be visible	https://snipboard.io/1UDhHi.jpg	Minor	Low
BI_002	Our Business Sub-module :Organic manures pesticides	https://winagrolimited.com/organic-manure-pesticides/	Blank Page	This page doesn't have any content yet.	It should have some content	https://snipboard.io/1UDhHi.jpg https://snipboard.io/wUraex.jpg	Minor	Medium
BI_003	Our pipeline project Sub-module :high-value-cereal-pulse-oil-crop	https://winagrolimited.com/high-value-cereal-pulse-oil-crops/	The Menu toggle button has changed in mobile version & header was not found	In the web version the menu toggle button's background is #F9FAFB but in mobile version (Iphone XR) there is no background in the menu toggle button	It should be remain same background in the mobile version & header should be visible.	https://prnt.sc/Vnxy7e-JCmo	Major	High
BI_004	Our Products sub-module: Herbicides	https://winagrolimited.com/herbicides/	Blurry Image	When I checked the herbicides page responsive it shows blurry image	Image should be sharp	https://snipboard.io/gQ8FWS.jpg	Minor	Low
BI_005	Our pipeline project Sub-Module:high value,cereal, pulse&oil crops	https://winagrolimited.com/high-value-cereal-pulse-oil-crops/	Heading missing	When I checked the high value ,cereal,Pulse &oil crops it's heading was missing	It should have heading	https://snipboard.io/ESceKU.jpg	Major	Immediate
BI_005	Our Business Sub-module :Seeds Business	https://winagrolimited.com/seeds-business/	HYBRID MAIZE not working in seed	User can't open the picture by clicking HYBRID MAIZE. Only one picture opened but other three aren't.	All the picture should be open whenever user clicked on HYBRID MAIZE.	https://prnt.sc/XuyYRqBHY5	Minor	Medium

Figure 3.8 Test Scenario

TEST CASE ID	TEST SCENARIO	TEST CASE	PRE CONDITION	TEST STEPS	TEST DATA	EXPECTED RESULT	A
TC_001	Sign Up Functionality for Students	1.Valid Name 2.Valid Mobile Number 3.Valid Password 4.Valid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Valid Name 2.Enter Valid Mobile Number 3.Enter Valid Password 4.Enter Valid Confirm Password 5.Click"	1.Khandaker Mohammad Reham 2. 01997041052 3.%kmreham007 4.%kmreham007 5. N/A	Student Account Created Successfully	U
Tc_002	Sign Up Functionality for Students	1.Valid Name 2.Valid Mobile Number 3.Valid Password 4.Valid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Invalid Name 2.Enter Valid Mobile Number 3.Enter Valid Password 4.Enter Valid Confirm Password 5.Click"	1.Reham@@ 2. 01789700444 3.%kmreham088 4.%kmreham088 5. N/A	Student Account not Created	U
TC_003	Sign Up Functionality for Students	1.Valid Name 2.Invalid Mobile Number 3.Valid Password 4.Valid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Valid Name 2.Enter Invalid Mobile Number 3.Enter Valid Password 4.Enter Valid Confirm Password 5.Click"	1.Antor Hasan 2. 017897 3.%kmreham007 4.%kmreham007 5. N/A	Student Account not Created	U
TC_004	Sign Up Functionality for Students	1.Valid Name 2.Valid Mobile Number 3.Invalid Password 4.Valid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Valid Name 2.Enter Valid Mobile Number 3.Enter Invalid Password 4.Enter Valid Confirm Password 5.Click"	1.Khandaker Mohammad Reham 2. 01789700333 3.%kmreh 4.%kmreham007 5. N/A	Student Account not Created	U
TC_005	Sign Up Functionality for Students	1.Valid Name 2.Valid Mobile Number 3.Valid Password 4.Invalid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Valid Name 2.Enter Valid Mobile Number 3.Enter Valid Password 4.Enter Invalid Confirm Password 5.Click"	1.Khandaker Mohammad Reham 2. 01789700555 3.%kmreham007 4.%kmreh 5. N/A	Student Account not Created	U
TC_006	Sign Up Functionality for Students	1.Invalid Name 2.Invalid Mobile Number 3.Invalid Password 4.Invalid Confirm Password"	User will be able to enter the Sign Up Page	1.Enter Invalid Name 2.Enter Invalid Mobile Number 3.Enter Invalid Password 4.Enter Invalid Confirm Password 5.Click"	1.Reh 2. 01525 3.%kmr 4.%kmr	Student Account not Created	U

Figure 3.9 Sign Up Page Test Scenario

CHAPTER 4

CONCLUDING STATEMENT

4.1 Summary

During my internship at Creative Soft Technology Limited, I had the opportunity to work closely with their SQA team, gaining valuable insights into their expertise in system integration and software services. Their innovative approach in electronic communication gives them a competitive edge, aligning closely with customer needs. This experience significantly enhanced my understanding of SQA processes and underscored the critical role of testing in their operations. I feel fortunate to have been part of such a supportive corporate environment where excellence and expertise are highly valued.

4.2 Strategic Recommendations for Internship Program:

Enhancing the managerial effectiveness of internships is crucial for fostering productive collaborations between educational institutions and businesses. Achieving this requires clear objectives, mutual understanding, and robust communication between these sectors. Internships provide students with valuable practical experience, allowing them to focus on specific industries while offering businesses exposure to new talent. This synergy benefits both students and organizations alike.

4.3 Ability to learn

It's the diversity of people attracted to this field that allows for a realistic perspective on the flaws of computer hardware. For some, it's a chance to recover lost ground or to reinvent themselves. Personally, I've been drawn to exploring different aspects of software testing, which has captured my interest deeply.

4.4 Organization

Prior to joining Creative Soft Technology Ltd, I found myself lacking in professional communication skills and grappling with workflow management. However, the mentorship offered by the organization's seasoned mentor proved to be transformative. Through close collaboration and guidance, I was able to overcome these obstacles and enhance my proficiency in these areas. Working alongside my mentor was not only enriching but also

exemplified a culture of support and growth that distinguishes Creative Soft Technology Ltd as an exceptional workplace.

4.5 Professional

In today's fiercely competitive landscape, internships serve as invaluable repositories of knowledge, endowing students with practical insights and profound understanding. As a Software Quality Assurance (SQA) engineer, I had the privilege of immersing myself in the best practices and established methodologies prevalent within the industry. Collaborating with seasoned experts across diverse computing domains, I garnered invaluable exposure to a multitude of perspectives, thereby enriching my understanding and advancing my collaboration skills. This immersive experience not only broadened my professional horizons but also equipped me with the acumen and proficiency needed to thrive in the dynamic world of software quality assurance.

4.6 University

Participating in an internship is a pivotal milestone in a student's journey towards professionalism. It serves as a catalyst, prompting individuals to envision and create a roadmap for their future careers. I am immensely thankful to the Institute of Information Technology for providing me with the invaluable opportunity to immerse myself in the professional field, equipping me with practical skills and insights. With the guidance and support received during my internship, I am now poised and prepared to confront the myriad challenges awaiting me in the dynamic realm of IT. This experience has not only shaped my professional trajectory but has also instilled in me a sense of confidence and readiness to navigate the complexities of the industry with determination and resilience.

CHAPTER 5

CONCLUSION AND GOALS

6.1 Conclusion

The pursuit of high-quality software relies heavily on effective software testing techniques. Three conference papers discussed here delve into quality assurance (SQA) and software quality. The first paper examines challenges in software testing within a Bangladeshi software company, highlighting issues such as the shortage of skilled personnel and underutilization of automated testing methods. While Bangladesh's tech sector grows rapidly, there's still significant room for improvement in testing practices. The second paper compares manual and automated testing methods, offering insights to help choose the most suitable approach based on project specifics, balancing efficiency and effectiveness. The third paper explores SQA in Scrum, an agile software development framework, emphasizing the adaptation of SQA processes to agile methodologies and the crucial collaboration between development and testing teams. Together, these studies underscore the vital role of SQA and testing in ensuring software reliability and effectiveness, crucial for meeting ongoing software delivery demands amidst evolving challenges.

6.2 Future Goals

As Software Quality Assurance (SQA) evolves, several key objectives will shape its future in software development industries. These goals focus on enhancing the efficiency, effectiveness, and comprehensiveness of SQA methods to meet evolving industry needs and technological innovations. Key objectives include leveraging AI for advanced testing automation and defect estimation, integrating Robotic Process Automation (RPA) for repetitive QA tasks, standardizing testing processes adaptable across diverse projects, prioritizing security testing with continuous checks and vulnerability scanners, optimizing performance monitoring tools to preemptively identify and resolve issues, and fostering stronger collaboration between development teams and quality assurance for superior software quality and reliability. These initiatives aim to advance software quality and ensure robust performance across varied environments and scales.

Reference:

1. [1] “Get idea about IT Ltd,” Available at: [Online]. Available: <https://www.istqb.org/>. [Accessed: 18-Jan-2019, 10:30 pm].
2. [2] “About recommended Partitioning Schema,” Available at: [Online]. Available: <https://astqb.org/certifications/foundation-level-certification/>. [Accessed: 18-Jan-2019, 12:30 pm].
3. [3] “Get Concept About Web Server,” Available at: [Online]. Available: <https://ieeexplore.ieee.org/abstract/document/8254323/>. [Accessed: 19-Feb-2019, 12:30 pm].
4. [4] B. Hamilton, “Introduction to Software Testing,” 2023. [Online]. Available: <https://www.softwaretestinghelp.com/software-testing/>. [Accessed: 30-June-2024].
5. [5] ISTQB, “ISTQB Glossary of Software Testing Terms,” Version 4.5, 2023. [Online]. Available: <https://www.istqb.org/downloads/glossary/>. [Accessed: 30-June-2024].

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