American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

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Section: A

Software Quality Assurance and Testing

Job Portal Service

A Report submitted

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Checked By Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

Contents

Software Test Plan

For

Job Portal Service

Version 1.0 approved.

Md. Omar Faruk Sakib, Md. Al Faiaz Rahman Fahim, Md. Abu Hojifa, Ashfat Ahmed Medul

May 14, 2024

1. TEST PLAN IDENTIFIER: RS-MTP01.3

2. REFERENCES

- https://www.bdjobs.com/
- https://www.naukri.com/

3. INTRODUCTION

Background to the Problem

Evolving Job Market Dynamics: In recent years, the job market has undergone significant transformations due to technological advancements and changing workforce demographics. Employers increasingly seek candidates with a blend of technical skills and soft skills, adaptable to rapidly evolving business environments. However, traditional job search methods and platforms often fail to effectively match job seekers with positions that fully utilize their unique skill sets, leading to high turnover rates and job dissatisfaction.

Inadequate Access for Diverse Applicants: Despite globalization and increased connectivity, certain groups—including minorities, women in tech, and older workers—still face significant barriers in accessing employment opportunities. Existing job portals often do not cater to the diverse needs of these groups, lacking personalized support and resources that can help bridge the gap between employers looking for diverse talents and the candidates themselves.

Technological Integration and Data Utilization: Many existing job portals do not fully leverage the capabilities of modern technology, such as AI and machine learning, to enhance the job matching process. This results in inefficiencies where employers and job seekers alike spend excessive time sifting through irrelevant listings or applications. An advanced job portal that intelligently uses data to predict and match candidates with roles could significantly improve the efficiency of the hiring process, benefiting all stakeholders involved.

Solution to the Problem

The implementation of this job portal will ensure that job seekers and employers efficiently connect over matched opportunities, enhancing satisfaction and retention. By incorporating

advanced algorithms and supportive resources, the portal will address the diverse needs of the job market and remove barriers to employment for underrepresented groups.

1. Usability: The platform will boast an intuitive interface, making job searching and application processes straightforward for users.
2. Availability: Accessible round-the-clock, ensuring users can explore job listings at their convenience.
3. Scalability: The system will effortlessly manage increased user activity without compromising its performance.
4. Reliability: Job postings and applications will be processed reliably, ensuring a smooth experience for users.
5. Portability: Users can access the job portal from any device or platform, enhancing accessibility.
6. Security: Robust security measures will safeguard user data and transactions, instilling confidence in users.
7. Efficient Information Processing: The system will efficiently handle user data, facilitating swift interactions and responses.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

(I) Login

Admin, Employer/Company, and Job Seeker have to login with their username and password.

- System checks the username and password (also check the userType).
- If the username and password match, then the system shows the homepage according to user type.
- If the username and password do not match, then the system shows the warning (username and password does not correct please try again)
- If the user forgot username or password, then he can check into forgot password and renew it with valid information.

Priority Level: High

Precondition: user have valid username and password.

(II) Smart Candidate Matching

- Employ machine learning algorithms to align candidates with jobs based on skill relevance, experience, and education, enhancing over time with data from successful placements.
- Enable companies and candidates to use filters for skills, experience, education, and location to streamline job and candidate searches.
- Rank candidates by how well their profiles align with job specifications, displayed as a match percentage.
- Utilize NLP to extract key terms from job descriptions and candidate profiles to refine match accuracy.
- Automatically present potential candidates to employers in the company dashboard, based on job criteria.
- Continuously update candidate recommendations as new profiles and job listings are added to the system.
- Include a feedback mechanism for employers on candidate suggestions to fine-tune the matching algorithm continually.
- Ensure compatibility with existing Applicant Tracking Systems for seamless applicant management.

Priority Level: High

(III) Registration

- Job seekers can create accounts using their email addresses or social media accounts, providing basic personal information such as name, contact details, and professional qualifications.
- Companies can register on the platform by providing company information, including name, industry, location, and contact details.
- Both job seekers and companies can create detailed profiles showcasing their skills, experience, and preferences.
- Job seekers can upload resumes, cover letters, and portfolios to their profiles.
- Companies can create and manage job postings, specifying job titles, descriptions, requirements, and other details.
- The platform verifies email addresses and provides options for two-factor authentication to enhance account security.
- Users can customize their notification preferences for updates, new job postings, and communication alerts.

Priority Level: High

(IV) Live Chat (Companies - Seeker's interactions)

- Job seekers can send direct messages to companies via the platform, allowing private communication about job postings or inquiries.

- Companies can respond to these messages, offering details about job roles and the application process.
- Job seekers can submit queries directly from the job listing page.
- Companies receive these as notifications and can respond directly through the platform.
- The platform facilitates communication through integrated email services where job seekers can send applications and companies can send automated responses for received applications.
- Both job seekers and companies receive notifications for updates such as application status changes and new job postings.
- An optional live chat feature for real-time communication, useful during specific events like virtual job fairs.

Priority Level: Medium to low

(V) Work process

Admin –

- Admins verify and approve new job seeker registrations.
- Admins validate company details and decide on their registration approval.
- Higher-level admins can add, remove, or modify roles of other admins.
- Admins edit, delete, or update job listings as necessary.
- Admins update their personal information and manage account settings.

Company/Employee –

- Employers can post new job opportunities on the platform.
- Employers can modify or delete their job postings as needed.
- Employers can view and search through all job listings on the portal.
- Employers can review applications and decide on approvals or rejections.

Job Seekers –

- Job seekers can update and manage their personal and professional profile information.
- Job seekers can add or update their resume details on the platform.
- Job seekers can search for job listings and apply directly through the portal.
- Job seekers can track and manage their job applications.
- Job seekers receive notifications about the status of their applications, including acceptance or rejection.

Priority Level: Medium to high

(VI) Purchase Credits

Credit Usage

Employers/Companies:

- Feature job postings to increase visibility.
- Access advanced candidate search tools.
- Obtain analytics on job post-performance.

Job Seekers:

- Feature their profile to increase visibility to potential employers.
- Access services like resume reviews or career coaching.
- Apply to premium job listings.

Purchasing Process

- Input Payment Details: Users provide payment information such as credit card or digital wallet details.
- Verification Process: A one-time password (OTP) is sent to the user's email or phone for verification.
- Confirmation: Once the OTP is verified, the purchase is confirmed, and credits are added to the user's account.

Management and Security

Admin Responsibilities:

- Monitor and manage credit transactions.
- Handle disputes and manage refunds when necessary.
- Ensure compliance with financial regulations and data protection laws.

Security Measures: Implement robust encryption for transactions and secure storage of payment information.

User Interface

- Credit Balance Display: Users can view their current credit balance and history of transactions in their account settings.
- Ease of Access: Users can purchase credit through a simple interface accessible from their dashboard.

Notifications and Support

- Confirmation Email: Users receive an email confirmation after each successful credit purchase.
- Customer Support: Dedicated support for any issues related to credit purchases, including technical problems or inquiries about credit usage.

Benefits

- Flexibility: Credits provide users the flexibility to pay for only what they need without committing to long-term subscriptions.
- Immediate Access: Users can immediately use purchased credits to enhance their job search or recruitment efforts.

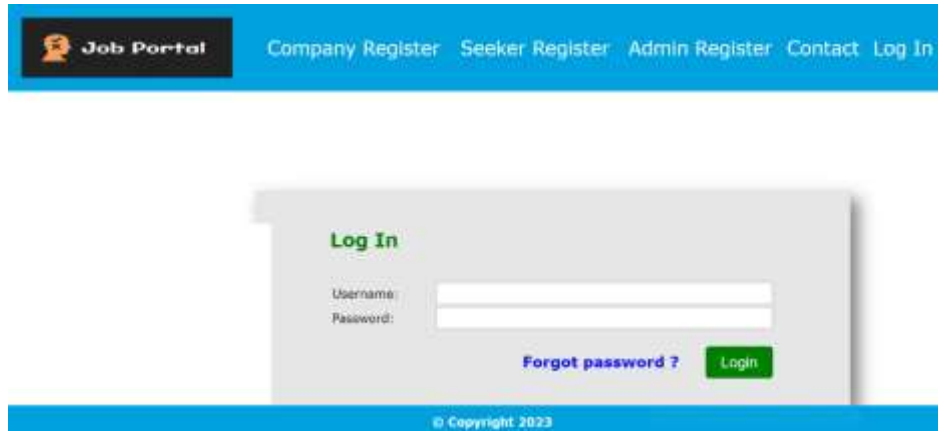Priority Level: High

(VII) Logout

- System has logout application.
- If logged out successful login page displayed.
- If once logout successful for again login user must have to enter username and password.

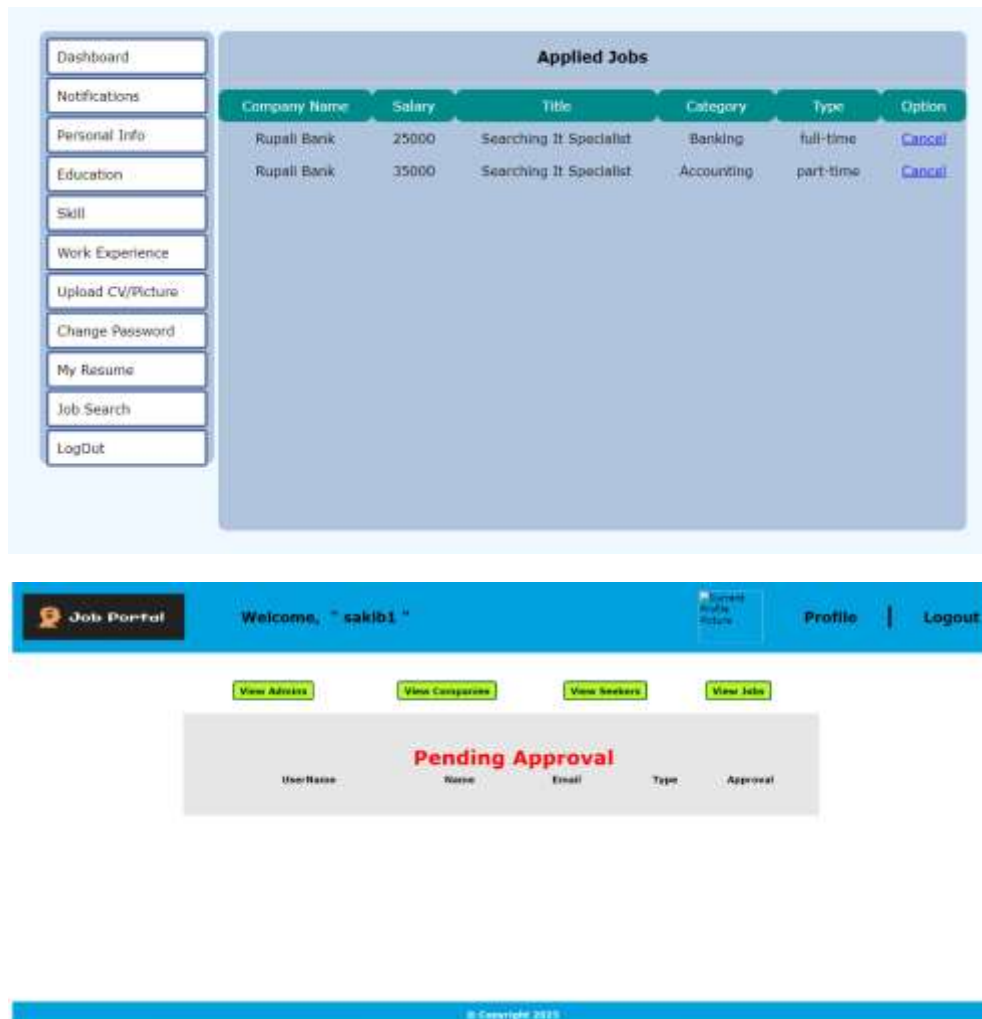Priority Level: Medium

4.2 System Quality Attributes

- System or the website will be accessible for everyone, but when someone needs to
- Job post, they have to login.
- After login the homepage should appear based on userType.
- Company, seekers or admins can use this platform with a smartphone and internet connection.
- The system will be logged out after 10 minutes automatically.

4.3 System Interface

Figure 1: Login

Figure 2: Homepage of Different Users.

Figure 3: Registration

Figure 4: Seeker Job Search and Apply.

Figure 5: Company Job Post.

Figure 6: Applied Jobs.

Figure 7: Admin Profile Manage.

Figure 8: Change Password

4.4 Project Requirements

Budget estimation:

Resource Name	Type	Cost
Project Management Team	Work	48,000 Taka
HR Team	Work	48,000 Taka
System Designer Team	Work	48,000 Taka
Software Development Team	Work	60,000 Taka
Quality Assurance Team	Work	25,000 Taka
System Testing Team	Work	25,000 Taka
4 Computer	Recourse	2,00,000 Taka
Server	Recourse	60,000 Taka
Others	Recourse	60,000 Taka
	Total	**574,000 Taka**

Time estimation:

Task Name	Duration
Documentation	7 days
Design	7 days
Test plan	7 days
Unit testing	14 days
Integration testing	3 days
System Testing	3 days
Security testing	2 days
System testing bug report	3 days
Acceptance testing	3 days
Acceptance test bug report	7 days
Project completion	7 days
Feedback	3 days
Total	**66 days**

5. FEATURES NOT TO BE TESTED

Block Multiple Concurrent Logins:

> If a user tries to access the portal from different devices simultaneously, the system will block it and only allow the last device that logged in to remain active. This feature will not be tested in this test plan as it will be addressed in a separate module.

Tracking Application Progress:

> There are several steps involved in the job application process, such as application review, interview scheduling, and final decision. As this feature will be implemented in the future, it will not be tested in the current test plan.

6. TESTING APPROACH

6.1 Testing Levels

The testing for the Job Portal project will consist of Unit, System/Integration (combined), and Acceptance test levels. The project management team and QA team will be responsible for all testing.

UNIT Testing:

- Conducted by the developer and approved by the development team leader.
- Utilizes automated testing tools such as Selenium IDE, which is suitable due to repetitive nature of many tests.
- Developers will document and maintain proof of the automated testing results.

SYSTEM/INTEGRATION Testing:

- Performed by the test manager and the development team leader using Selenium IDE for automation.
- Focuses on ensuring that different components of the job portal work together seamlessly.

Security Testing:

- Conducted during both unit and system/integration testing phases.
- Performed by the developer during unit testing and by the test manager along with the software manager during system testing.
- Aims to identify and resolve security vulnerabilities to prevent unauthorized access.

Performance Testing:

- Undertaken by the test manager and the software manager.
- Assesses the job portal's ability to handle various loads and evaluates its time and space complexity.

ACCEPTANCE Testing:

- Carried out by actual users, potentially including job seekers and employers who will use the system.
- Also reviewed by the project management team to verify that all functions are present and operate correctly as per requirements.
- Users will provide feedback and report any issues with the software.

6.2 Test Tools

As the job portal is a web-based platform, the primary tool for automatic testing will be Selenium IDE. This tool will facilitate both unit and integration testing.

- **Unit Testing**: Performed by software developers using Selenium IDE to ensure individual components function correctly independently.

- **Integration Testing**: Conducted by the Software Development Leader and the QA Leader using Selenium IDE to verify that all system components work together seamlessly.

6.3 Meetings

- **Regular Scheduling:** Throughout the three-month testing phase, the project team will hold weekly meetings to review progress, discuss test results, and plan actions for the following week.
- **Monthly Reviews:** The test team leader will organize monthly meetings among the test teams to ensure comprehensive coverage and effectiveness of all testing activities.
- Emergency Sessions: Emergency meetings may be called to address and resolve urgent issues swiftly.
- **Closure Meeting:** At the end of the testing phase, a final test closure meeting will be held with all project members to evaluate the overall project, discuss findings, and close any remaining issues.

7. TEST CASES / TEST ITEMS

Functional requirement 1: Login

Test Case ID: JP_1			Test Designed by: Md. Al Faiaz Rahman Fahim	
Test Priority (Low, Medium, High): Medium			Test Designed date: 02-May-2024	
Module Name: Name: Login Session			Test Executed by: Md. Omar Faruk Sakib	
Test Title: Verify login with valid username and password			Test Execution date: 02-May-2024	
Description: Test website login page				
Precondition: User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website. 2. Enter username. 3. Enter password. 4. Click submit	Username: Faiaz12 Password: Ffffff2@	User should login into the application	As expected,	Pass
Post Condition: All User successfully can Login.				

Functional requirement 2: Registration

Test Case ID: JP_2			Test Designed by: Md. Abu Hojifa	
Test Priority (Low, Medium, High): High			Test Designed date: 03-May-2024	
Module Name: Registration Section			Test Executed by: Ashfat Ahmed Medul.	
Test Title: Verify registration field providing credentials			Test Execution date: 03-May-2024	
Description: Test website login page				
Precondition: User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Registration section 3. Click register	Username: Faiaz12 Password: Ffffff2@	Users get the message "Registration Successful"	As expected,	Pass
Post Condition: All User successfully can Login.				

Functional requirement 3: Live Chat

Test Case ID: JP_3			Test Designed by: Md. Al Faiaz Rahman Fahim		
Test Priority (Low, Medium, High): Medium to low			Test Designed date: 03-May-2024		
Module Name: Live chat			Test Executed by: Md. Omar Faruk Sakib		
Test Title: Verifying the live chat session. if it works and Company and Job seekers can chat.			Test Execution date: 03-May-2024		
Description: Testing live chat session					
Precondition:					
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)	
1. Go to the website. 2. Click live chat. 3. Leave a text. 4. Wait for Company reply.	Company replied within 24 hours.	User should get reply within three minutes	As expected,	Pass	
Post Condition:					

Functional requirement 4: Jobs Search

Test Case ID: JP_4			Test Designed by: Ashfat Ahmed Medul.		
Test Priority (Low, Medium, High): High			Test Designed date: 04-May-2024		
Module Name: Job Search Section			Test Executed by: Md. Abu Hojifa		
Test Title: Check the Job Search Function			Test Execution date: 04-May-2024		
Description: Job Seekers can search the jobs and apply.					
Precondition: N/A					
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)	
6. Go to website 7. Login section 8. Login as a user 9. Go to job Search. 10. Search The job	Username: Huzaifa Password: Hhhhhh2@	Users get the all the job post results	As expected,	Pass	
Post Condition: Job Seekers successfully see search related job post.					

Functional requirement 5: Jobs Post

Test Case ID: JP_5	Test Designed by: Ashfat Ahmed Medul
Test Priority (Low, Medium, High): High	Test Designed date: 04-May-2024
Module Name: Job Post Section	Test Executed by: Md. Al Faiaz Rahman Fahim
Test Title: Verify Job post Section providing credentials.	Test Execution date: 04-May-2024
Description: Test website job post page	
Precondition: N/A	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Login section 3. Go to job Post Post job.	Username: Faiaz Password: Faaaaa2@	Company gets the message "Job Post Successful"	As expected,	Pass
Post Condition: Company successfully Post the Job. The Job Post session details are Save in the database.				

Functional requirement 6: Admin Section Manage.

Test Case ID: JP_6	Test Designed by: Md. Abu Hojifa
Test Priority (Low, Medium, High): High	Test Designed date: 04-May-2024
Module Name: Manage Admin Section	Test Executed by: Md. Al Faiaz Rahman Fahim
Test Title: Check the properly manage in admin section.	Test Execution date: 04-May-2024
Description: Admin can manage the admin features and approve.	
Precondition: N/A	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Login section 3. Login as an admin 4. Manage admin feature	Username: Faiaz Password: Faaaaa2@	Admin can successfully manage and view	As expected,	Pass
Post Condition: Admin can approve all request.				

Functional requirement 7: Purchase Credits

Test Case ID: JP_7		Test Designed by: Md. Omar Faruk Sakib		
Test Priority (Low, Medium, High): Medium		Test Designed date: 05-May-2024		
Module Name: Purchase Credits		Test Executed by: Md. Abu Hojifa		
Test Title: Verifying Purchase Credits Functionality.		Test Execution date: 05-May-2024		
Description: Testing the purchase credits feature on the website.				
Precondition: User must be logged in on the website.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
1. Navigate to the "Purchase Credits" section. 2. Click on "Purchase Credits" button/link. 3. Enter valid payment details. 4. Verify OTP sent to email/phone. 5. Confirm purchase after OTP verification. 6. Check if credits are added to the user's account. 7. Verify admin's ability to manage transactions. 8. Ensure compliance with financial regulations. 9. Validate encryption for secure payment. 10. Check user's ability to view credit balance. 11. Test ease of access to purchase credits.	Valid credit card or digital wallet details for payment.	-The purchase credits process should be completed successfully without errors. -Credits should be added to the user's account after successful payment. -Admin should be able to monitor and manage credit transactions securely. -User interface elements related to credit purchase should function smoothly and be easily accessible.	As expected,	Pass
Post Condition: All User successfully can Logout.				

Functional requirement 8: Logout

Test Case ID: JP_8		Test Designed by: Md. Omar Faruk Sakib		
Test Priority (Low, Medium, High): Low		Test Designed date: 06-May-2024		
Module Name: Log out		Test Executed by: Md. Al Faiaz Rahman Fahim		
Test Title: Verifying log out functionality		Test Execution date: 06-May-2024		
Description: Testing log out page				
Precondition: User must be logged in on the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click on Log out. 2. Enter username. 3. Enter password. 4. Click submit		User should log out from the website	As expected,	Pass
Post Condition: All User successfully can Logout.				

Functional requirement 9: Smart Candidate Matching

Test Case ID: JP_2	Test Designed by: Md. Abu Hojifa
Test Priority (Low, Medium, High): High	Test Designed date: 03-May-2024
Module Name: Smart Candidate Matching	Test Executed by: Ashfat Ahmed Medul.
Test Title: Verifying the functionality of Smart Candidate Matching	Test Execution date: 03-May-2024
Description: Testing the Smart Candidate Matching feature to ensure that it correctly matches candidates based on job descriptions and candidate profiles.	

Precondition: The job portal must have a database of job descriptions and candidate profiles already populated.				
Test Steps	**Test Data**	**Expected Results**	**Actual Results**	**Status (Pass/Fail)**
1.Log in as a recruiter. Navigate to the 'Candidate Matching' section. 2.Select a job description from the list. 3.Click the 'Match Candidates' button.	1.Job Description: Software Developer, 5+ years of experience, skills in Java and SQL. 2.Candidate Profiles: Multiple profiles with varying skills and experience levels.	Candidates with 5+ years of experience and skills in Java and SQL should be top-ranked in the results.	As expected,	Pass

Post Condition: Candidates are ranked and displayed based on their match percentage to the job description.

8. ITEM PASS/FAIL CRITERIA

Pass Criteria:

- The test process will be completed once a job seeker can register an account, create a profile, and successfully apply for a job.
- After applying for a job, the job seeker's application status should be updated accordingly, reflecting any changes such as shortlisting or rejection.
- Companies should be able to register, post job openings, and receive applications from job seekers.
- Once a company receives applications, they should be able to review, shortlist, and communicate with applicants seamlessly through the platform.
- Both job seekers and companies should receive notifications for updates such as application status changes and new job postings.

Fail Criteria:

- Inability for job seekers to complete the registration process due to technical errors or system malfunctions.
- Job applications not being properly recorded or reflected in the system, leading to miscommunication or loss of data.
- Companies encounter difficulties in posting job openings or accessing applicant information.
- Communication features, such as messaging between job seekers and employers, experiencing downtime, or delivering messages inconsistently.
- Notifications failing to be delivered to users regarding important updates or changes in application status.

9. TEST DELIVERABLES

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

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

10. STAFFING AND TRAINING NEEDS

Project Management Team Formation:

- A dedicated project management team will oversee all aspects of the project.
- This team will make all major decisions and approve actions before implementation.

HR Team Responsibilities:

- A subset of the project management team will handle HR duties.
- They will determine staffing needs, including roles such as system interface designers, software developers, quality assurance specialists, and system testers.
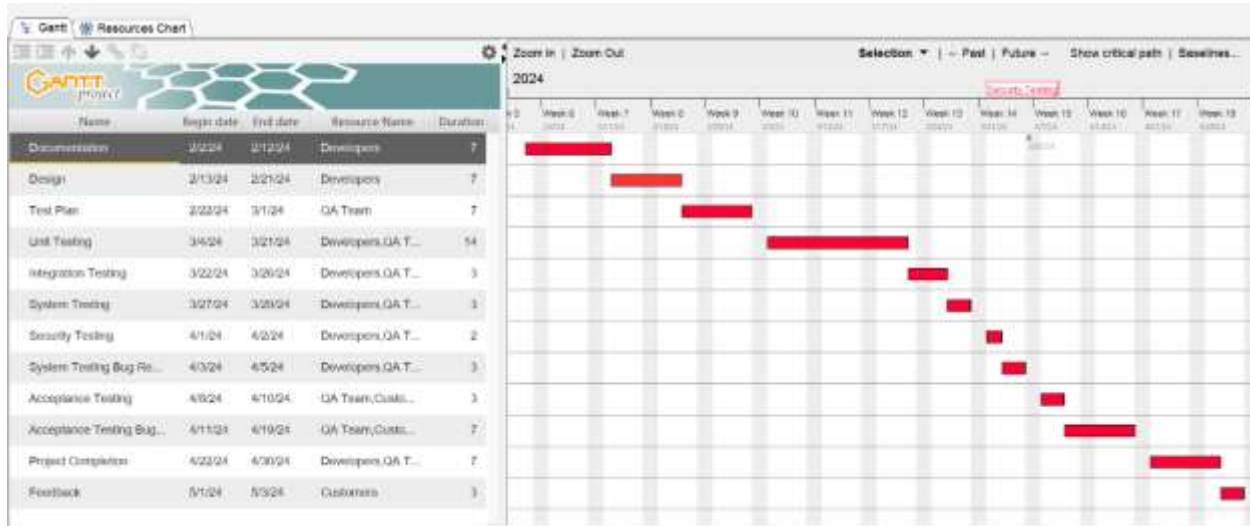
Training Programs:

- All team members will undergo specific training to prepare them for their roles in development and testing, ensuring they meet project requirements.

11. RESPONSIBILITIES

	TM	PM	Development Team	Test Team	Client
Test cases documentation	X	X	X	X	
Test Procedures and rules	X		X	X	
Unit test documentation & execution			X	X	
Integration test Documentation & Execution	X		X	X	
System test Documentation & Execution		X		X	
System Design Reviews	X	X	X	X	X
Details Design Reviews	X	X	X	X	
Screen & Report prototype reviews	X	X		X	X
Change Control and regression testing	X	X	X	X	X
Acceptance test Documentation & Execution	X	X		X	X

12. TESTING SCHEDULE

13. PLANNING RISKS AND CONTINGENCIES

o **Risk Description:** Limited human resources and budget pose a risk of project delays and increased costs if a team member leaves unexpectedly.

o **Mitigation Strategies:**

Cross-training: Employees are trained in multiple roles to fill gaps quickly.
Succession Planning: Develop a plan for immediate replacement of critical roles.
Contingency Budget: Allocate a budget for unexpected staffing changes.
Regular Reviews: Monitor project progress and team status regularly to address potential issues early.

o **Contingency Actions:**

Temporary Hiring: Use temporary workers to maintain project momentum.
Enhanced Retention Efforts: Implement strategies to improve job satisfaction and reduce turnover.
Regular Communication: Keep team informed about project status and potential changes to ensure alignment and morale.

14. APROVALS

Name	Role	Signature
Md. Shahidullah Rakib	QA Lead	
Md. Omar Faruk Sakib	Project Manager	
Md. Abu Hojifa	Business Analyst	
Md. Al Faiaz Rahman Fahim	Test Manager	
Ashfat Ahmed Medul	Developer Lead	