Quality Assurance Plan

Validating the HR Management application

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1 Introduction

1.1 Purpose

The purpose of this Quality Assurance Test Plan is to outline the scope, testing strategy, levels of testing, test approach, and test team structure for the acti-Time HR Management application. Also, this will elaborate on the risks and the mitigation plans. By following this quality assurance plan, we can ensure the system's functionality, security, and reliability.

1.2 Project Overview

The project involves the comprehensive testing of the actiTIME application's HR login system and associated functionalities. The HR Management application is a web-based system that allows HR personnel to log in, access employee profiles, review leaves and attendance reports, and approve/reject timesheets.

The project involves testing the HR login functionality within the actiTIME application, including user authentication, access control, and data security. The focus of this testing effort is specifically on the HR module, ensuring that HR personnel can securely log into the system and access essential features.

***HR Authentication System**: The primary objective is to verify the robustness of the authentication mechanism, ensuring that HR users can log in securely using valid credentials (username and password). This includes testing for password strength requirements, encryption protocols, and secure transmission of login data.*

***Employee Profile Management**: The system allows HR staff to view and manage employee profiles. This functionality involves accessing and displaying detailed information about employees, including personal details, job roles, and contact information. Testing in this area ensures accurate data retrieval and proper display of employee information.*

***Leave and Attendance Management**: HR users have the responsibility to oversee leave requests and attendance records of employees. This feature includes functionalities such as submitting, approving, and tracking leave requests, as well as generating attendance reports. The testing here focuses on the accuracy of leave balance calculations, proper approval workflows, and correct attendance data representation.*

***Timesheet Approval/Rejection**: HR personnel play a crucial role in validating and approving/rejecting timesheets submitted by employees. This part of the testing involves verifying the approval/rejection process, ensuring that it aligns with organizational policies and project timelines. It also includes testing notifications and communication mechanisms to keep both employees and HR informed about the status of timesheets.*

2 Scope

2.1 In-Scope

User login functionality
Employee profile viewing and management
Leave and attendance report generation and report review
Timesheet approval/rejection process

2.2 Out-of-Scope

Features unrelated to HR login and associated functionalities
Integration with third-party applications
Performance testing of the application under heavy loads

3 Testing Strategy

3.1 Product/Application/Solution Risks

Risks	Criticality	Mitigation Strategy
Security Vulnerabilities - Unauthorized access, data breaches, or sensitive information leakage.	High, as unauthorized access can lead to data breaches.	Regular security audits, penetration testing, and implementing security best practices to safeguard against potential breaches. Implement secure authentication mechanisms, like multi-factor authentication.
Integration Challenges - Issues with integrating the HR Management application with other systems or APIs.	Medium, as integration failures can disrupt data flow.	Thoroughly testing API integrations and conducting compatibility tests with different browsers and devices, Implement proper error handling and fallback mechanisms for failed integrations.
Performance Issues - Application slowdowns, unresponsiveness, or bottlenecks during peak usage.	Medium, as slow system response can affect user experience and productivity.	Load testing to identify performance bottlenecks, optimizing database queries, and scaling resources as needed, Conduct load testing to identify the system's capacity limits.

3.2 Level of Testing

Test Type	Description
Functional Testing	- Validate HR login functionality - Verify employee profile access - Test leave and attendance report generation - Confirm timesheet approval and rejection process
Regression Testing	- Ensure existing features remain unaffected after new updates - Verify HR login functionality after each system upgrade
Non-Functional Testing	- Conduct security testing to identify vulnerabilities - Perform performance testing to analyze system responsiveness under various loads

4. Test Approach

4.1 Test Design Approach

The testing team will employ a combination of black-box and white-box testing techniques. Test cases will be designed based on user scenarios, and boundary value analysis will be applied to validate inputs. Security testing will involve penetration testing, while performance testing will focus on load, stress, and scalability testing.

5. Test Team Structure

5.1 Team Structure

#	Role	Resource Count
1	QA Manager	1
2	QA Leads	2
3	Senior QA Engineers	4
4	QA Engineers	10

5.2 Roles and Responsibilities

QA Manager - A QA manager is responsible for ensuring the quality and reliability of products or services in an organization. Their duties include overseeing the testing process, developing testing procedures, and coordinating with various teams to identify and fix defects in software or other products. They lead a team of QA professionals, providing guidance, training, and support to ensure that the testing activities align with organizational goals and standards. Additionally, QA managers analyze test results, report findings to stakeholders, and collaborate with other departments to enhance overall product quality. Their role is crucial in maintaining high standards and customer satisfaction by identifying and resolving issues before products reach the market.

QA Leads - QA Leads are responsible for overseeing the quality assurance process within a team or organization. They coordinate and guide the efforts of QA team members, ensuring that software products meet established quality standards. QA Leads develop and implement testing procedures, review test plans, and monitor the progress of testing activities. They collaborate closely with developers, product managers, and other stakeholders to identify issues, track defects, and ensure timely resolution. Additionally, QA Leads play a crucial role in mentoring team members, providing training, and maintaining clear communication channels to enhance overall team efficiency and product quality.

Senior QA Engineers - A Senior QA Engineer is responsible for ensuring the quality and reliability of software products. They design and execute test plans, identify defects and areas for improvement, and collaborate with the development team to resolve issues. Senior QA Engineers also mentor and guide junior QA team members, provide technical expertise, and contribute to

process improvements. Their role involves thorough testing, documentation, and communication of test results to ensure that the software meets high-quality standards before it is released to users.

QA Engineers - Quality Assurance (QA) Engineers play a crucial role in ensuring the quality and reliability of software products. Their responsibilities include thoroughly testing software applications to identify defects or issues, creating and executing test plans, documenting test cases and results, and collaborating with software developers to resolve problems. QA Engineers are responsible for maintaining high standards by conducting rigorous testing procedures, ensuring that the software functions correctly, and delivering a seamless user experience. They also contribute to the continuous improvement of processes and products by providing valuable feedback to the development team. In summary, QA Engineers are instrumental in guaranteeing the overall quality and performance of software applications.

6. Test Schedule

Phase 1: Test Planning and Preparation

Finalize Test Plan, Test Scenarios, and Automation Strategy.

Prepare Test Data and Set Up Test Environments.

Develop Initial Regression Test Automation.

Phase 2: Functional Testing

Execute Positive and Negative Test Cases for HR functionalities.

Perform Exploratory Testing and Address Issues.

Phase 3: Security and Performance Testing

Conduct Security Testing: Penetration, Vulnerability, and Authentication Checks.

Execute Performance Testing: Load and Stress Tests.

Phase 4: Regression Testing and Automation Enhancement

Perform Regression Testing and Address Issues.

Enhance Test Automation and integrate it into the CI/CD Pipeline.

Phase 5: Finalization and Documentation

Conduct Final Validation and prepare Test Summary Report.

Update Documentation and Share Insights with the Development Team.

7. Test Reporting

7.1. Quality Matrices

Defect Density: Number of defects per size of the application

Test Case Pass Rate: Percentage of test cases passed

Code Coverage: Percentage of code covered by tests

8. Test Environment Requirements

- Operating Systems
- Browsers
- Test Data

9. Dependencies and Assumptions

Dependencies: Availability of the latest build for testing, access to necessary testing resources, and timely bug fixes.
Assumptions: Test environments mimic the production environment accurately, timely provision of necessary credentials for testing.