General information

06/19/2024 6:55 am EDT

Objective

Validate and ensure the functionality, usability, performance, and security of the Richmond Solution Platform (RSP) through various testing scenarios before releasing it to production.

Definition of objectives

Concept	Description
Functionality	Verify that all features and functions operate as expected.
Usability	Evaluate the ease of use and user experience.
Performance	Measure the speed and efficiency of the platform under different conditions.
Security	Ensure that user data is protected against unauthorized access.

Schedule

General schedule

PI 20		PI 21		PI 22		PI 23	
Nov ✅	CMS ✅ Login ✅ Dashboard ✅	Feb	Assignments ↑	May	Launch Strategy Settings ↑ Notifications	Aug	Launch
Dec ✅	Login ✅ Class Materials ✅	Mar	Markbook ↑	Jun	Communications BE Integration ↑		
Jan ✅	Class Materials ✅ iRead ✅	Apr	Reports BE Integration ↑	Jul	Testing		

Detailed schedule

Week	Days	Activity
Week 1-2 Preparation and Configuration		Preparation of the testing environment.
		Definition of necessary variables for the application.
Week 3 Unit and Integration Testing		Execute automated unit tests, document, and correct any errors found.
		Execute integration tests to validate interaction between modules, document, and correct any errors found.
		Analysis of unit and integration test results, adjustments, and improvements based on the findings.
Week 4 System testing		Execute system tests to validate the complete functionality of the platform, document, and correct any errors found.
		Analysis of system test results, adjustments, and improvements based on the findings.
Week 5 Performance testing		Configuration of performance testing tools, definition of test scenarios.
		Perform load tests, monitor system performance.
		Analysis of performance test results and areas for improvement.
Week 6 Safety testing		Configuration of security testing tools, definition of test scenarios.
		Execute penetration and vulnerability tests, document and correct vulnerabilities found.
		Analysis of security test results, implementation of additional security measures if necessary.
Week 7 User acceptance testing.		Setting up the environment for the user, selecting test cases based on user requirements.
		Key users execute test cases, document, and correct errors found.
		Analysis of results, final approval by users.
Week 8 Final review and preparation for deployment into production.		Final review of all test results, update of technical and user documentation.
		Implementation of final adjustments based on test results, optimization of performance and security.
		Planning and communication of the production deployment plan, final validation of the production environment.

Additional Considerations

- **Communication:**
  - Maintain constant communication with the development and testing teams to quickly resolve issues.
  - Hold meetings to review progress and obstacles.
- **Flexibility:**
  - The schedule is flexible to accommodate unforeseen events and new discoveries during testing.
- **Documentation:**

- Document all findings, errors, and adjustments made during the testing process.

Requirements

Functional and non-functional

> **Functional and non-functional requirements are key aspects in RSP testing.**

Functional Requirements:

- Login: Users should be able to log in using their credentials through integration.
- Profile Management: Users should be able to edit their profile, add additional information, and change their password.
- Upload Content: Users should be able to upload multimedia files (such as images, videos, documents) to the platform.
- Search and Filtering: Users should be able to search and filter content within the platform.
- Notifications: Users should receive notifications about relevant activities on the platform, such as new messages or comments on their content.
- Content Management: Users should be able to edit or delete the content they have uploaded to the platform.
- Security: The platform must ensure the security of user data through encryption and measures to protect against unauthorized access.
- Compatibility: The platform must be compatible with different devices and web browsers.

Non-Functional Requirements:

- Performance: The platform must handle a high volume of users and content without performance degradation.
- Response Time: Products should load quickly with minimal response times.
- Usability: The platform must be intuitive and easy to use, with a clear user interface and simple navigation.
- Availability: The platform must be available at all times, with minimal downtime for scheduled maintenance.
- Security: The platform must be resilient to cyber attacks and comply with industry security standards to protect user information.
- Compatibility: The platform must be compatible with various operating systems, web browsers, and mobile devices.
- Regulatory Compliance: The platform must comply with personal data protection regulations.

Devices and specifications

> To conduct testing, it's essential to consider various devices and specifications to ensure that the platform functions smoothly across different environments.

Desktop devices

Windows PC	• Operating System: Windows 10 or higher. • Processor: Intel Core i5 or higher. • RAM: 4 GB or more. • Browsers: Google Chrome, Mozilla Firefox, Microsoft Edge (latest versions).
Mac	• Operating System: Mac OS X (10.13.6) or higher. • Processor: Intel Core i5 or higher (or equivalent in Apple Silicon). • RAM: 4 GB or more. • Browsers: Safari, Google Chrome, Mozilla Firefox, Microsoft Edge (latest versions).

Mobile devices and tablets

iPhone	• Operating System: iOS 12.4 or higher. • Models: iPhone 5S or newer. • Browsers: Safari (preferred), Google Chrome.
iPad	• Operating System: iOS 12.4 or higher. • Models: iPad (9th generation) or newer. • Browsers: Safari (preferred), Google Chrome.
Android	• Operating System: Android 8.0 or higher. • Models: Variety of manufacturers (Samsung Galaxy S9 or newer, Google Pixel 3 or newer). • Browsers: Google Chrome (preferred), Mozilla Firefox.

Testing and Considerations

- Browser Compatibility: Ensure that RSP functions correctly on the most used browsers on each device.
- Performance: Verify that RSP loads quickly and responds efficiently on devices with different specifications.
- Adaptability: Test the user interface to ensure it is adaptable and functional across different screen sizes and resolutions.
- Security: Verify that RSP meets security standards to protect user information.

Teams and roles

To effectively carry out RSP testing, a team covering different roles is essential. Each team member brings specific skills and perspectives to ensure that the RSP functions correctly and meets user expectations.

Project manager

Responsibilities:

- Coordinate and oversee the entire testing process.
- Ensure project objectives are met within the allocated time and budget.
- Facilitate communication between different teams.
- Understand and document the requirements of the e-learning platform.
- Ensure that tests cover all relevant requirements and use cases.
- Act as a liaison between developers and end users.

Developers

Responsibilities:

- Fix identified bugs during testing.
- Collaborate with QA to understand and resolve issues.
- Implement changes and improvements based on test results.

QA

Responsibilities:

- Design and execute test cases.
- Report and document errors and issues found.
- Ensure the platform meets quality standards.
- Conduct follow-up tests after corrections.
- Verify that all platform functionalities perform as expected.
- Test different usage scenarios from the end-user perspective.
- Identify usability and functionality issues.
- Execute automated tests and analyze results.
- Reduce repetitive testing time.
- Identify security vulnerabilities in the platform.
- Ensure user data is protected against unauthorized access.
- Evaluate platform performance under different workloads.
- Perform load, stress, and scalability testing.
- Identify and resolve performance issues.

UX/UI designers

Responsibilities:

- Ensure the user interface is intuitive and easy to use.
- Gather user feedback and conduct usability tests.
- Collaborate with developers and testers to enhance the user experience.

End Users (Beta Testers)

Responsibilities:

- Test the platform in a real-world environment.
- Provide valuable feedback on usability and functionality.
- Identify issues that were not detected during internal testing.

Technical Support

Responsibilities:

- Resolve technical issues reported during testing.
- Provide assistance to QA and end users.
- Document and communicate solutions to technical problems.
- Develop and maintain an FAQ section to help address common questions quickly and efficiently.

Documentation Specialist

Responsibilities:

- Create and maintain documentation (user manuals, installation and configuration guides, technical documentation).
- Test the functionality of learning resources and tools.
- Document test cases.
- Log and track errors.
- Communicate with developers and QA.

Success criteria

To evaluate the success of the tests performed, it is essential to define specific and measurable criteria.

Functionality and Stability

- Error rate: The percentage of actions resulting in errors should be minimal.
- Uptime: The RSP should be available and operational at least 90% of the time. (Confirm expected %)
- Performance under load: The RSP should be able to handle the expected number of simultaneous users without significant performance degradation.

Usability and User Experience

- User satisfaction: Usability tests should show high satisfaction among users.
- Task completion time: Critical tasks should be completed in a reasonable and consistent amount of time.

Functionality

- Requirement coverage: All specified functional requirements must be implemented and function correctly.
- System integration: The RSP should seamlessly integrate with other systems and applications.

Security

- Penetration testing: Penetration tests should be conducted to identify and address vulnerabilities.
- Access control: Appropriate access controls must be implemented to protect sensitive information and prevent unauthorized access.

Performance

- Load speed: RSP components should load within an acceptable time, typically less than 2-3 seconds.

Maintenance

- Updates: The RSP should allow updates and maintenance without causing significant service disruptions.
- Documentation: All functionality should be well-documented to facilitate maintenance.

Compatibility

- Cross-platform: The RSP should be compatible with major web browsers and mobile devices.
- Interoperability: The RSP should function correctly across different operating systems and software versions.

Continuous Improvement

- Ongoing review: Implement a continuous feedback system to identify areas for improvement.
- Iterations based on feedback: Make updates and improvements based on feedback received from users and tests conducted.