Test strategy

Testing approach

- Developer team will be responsible for achieving 60% code coverage utilising unit tests.
- QA engineers will:
    - execute manual functional testing:
        - covering 100% functional requirements;
        - utilising positive and negative test cases;
        - deriving test cases from acceptance criteria of each user story;
        - most critical test cases will be marked and selected for regression testing;

    - execute manual non-functional testing that covers all documented non-functional requirements;
    - execute manual and automated regression testing of the final system version before releasing it to Production.
- Automated functional UI tests of regression test cases will be incrementally implemented by QA engineers during the span of the project to maximise the automated regression tests coverage during the lifecycle of the project.
    - There will be a possibility to launch one of the two suites of automated functional UI tests (smoke or regression) at any time using the command line.

What will be tested

Functional requirements

- All functional requirements (related user stories) implemented during the project will be covered with respective test cases.

Non-functional requirements

- The system respond to any request in less than 2 seconds(web page loading time);
- The system must be compatible with Google Chrome, Microsoft Edge and Mozilla Firefox browsers.

What will not be tested (out of testing scope)

- ADA compliance (Accessibility testing for users with disabilities);
- Stress, Load testing;
- UI/UX testing will be carried out only if QA has time for that due to the time schedule constraints;
- Device / mobile screen size compatibility testing.

Manual functional testing entry criteria

- Relevant code changes are merged and all unit tests have been successfully executed with 100% passing rate;
- A new build is available in production environment (no dev/staging environment);
- All the test cases linked to user story are prepared for execution;
- User story has been moved to ‘Ready for QA’ column in JIRA sprint board.

Testing tools

- Test case management tool – Zephyr for JIRA;
- Defect management tool – JIRA;
- Test reporting tool – widgets and gadgets of Zephyr for JIRA;
- UI test automation - Selenium WebDriver, JAVA, GIT;
- Tools for non-functional testing:
    - Google Chrome’s LightHouse plugin - for ensuring best web performance practices;
    - Google Chrome’s Developer Console’s Network tab - for ensuring page load time matches the documented requirements.

Environments used for testing

- QA engineers will execute all testing activities in production environment;
- Automated UI functional tests will be executed in production environment.

Test data

- Test data will be generated by testers during the testing process.

Defect management

- All identified defects will be logged in JIRA under corresponding user stories and will have one of the following initial priorities set by QA engineer:
    - Highest - the defect makes the solution not fit for purpose and further testing would be invalid;
    - High - the defect makes the solution not fit for purpose and must be fixed;
    - Medium - the system does not function as specified but an acceptable workaround is possible and the associated risk is acceptable. This would not stop the Production release.
    - Low - a cosmetic fault. May or may not even require a fix. The Product owner will determine this;
- Once the defect is fixed by dev team, it is moved to 'Ready for QA' column. The QA engineer will re-test it and move to 'Done' column (if the defect is fixed);
- Recurring bug triage meeting with the Product owner might be used to update the priorities of identified defects;
- Defects will have the possible statuses of:
    - "To Do" - a new defect has been created;
    - "In progress" - the developer has started investigating the issue;
    - "Ready for review" - all the necessary code changes have been pushed to repository for peer review;
    - "Ready for QA" - all the necessary code changes have been pushed to repository for QA review;
    - "QA in progress" - the QA engineer has started investigating the issue;
    - "Done" - either the defect was identified as irrelevant during the bug triage meeting or the confirmation testing (retesting) has passed.
- Defect is ready for confirmation testing (retesting) when:
    - Relevant code changes are merged and all unit tests have been successfully executed with 100% passing rate;
    - A new build is available in production environment;
    - Defect has been assigned the status "Resolved" and has been moved to 'Ready for QA' column in JIRA sprint board.

Test reporting

- Test results report will be prepared before the system's release to Production to have the information on the system's quality and whether it matches all the following quality criteria requirements:
    - >=95% highest priority test cases have a "Pass" status;
    - >=90% high priority test cases have a "Pass" status";
    - >=80% medium priority test cases have a "Pass" status;
    - There is no more than 1 unresolved defect with highest priority. Defect has an action plan confirmed with the Product owner;

- There are 2 or less unresolved defects with high priority.