SQA Plan

By: Nidhi Patel, Ahmed Alfaris, Zachary Wireman, Nathaniel Leonardo

Professor: Bruce Maxim

**1.0 Introduction**

The SQA plan outlines the process, methods, procedures, and standards that will be used to perform software quality assurance on our web application. This document serves as a guide for what we will plan to carry out at each stage of the software development process. Our goal is to develop a strategy for maintaining and improving software by performing quality assurance processes on the software project, including using metrics to develop strategies for software improvement. These tasks will be implemented throughout the software development process.

**1.1 Scope and intent of SQA activities**

The objective of our SQA is to outline a plan to ensure a satisfactory product, and to specify how tasks like testing and approval will work. Being a small group, our quality assurance process will mostly be focused on clear communication with our client and maintaining clear standards that allow our team to know what to deliver.

**1.2 SQA organizational role**Description of where the SQA group sits organizationally (including reporting structure and the manner in which SQA will interact with software engineering teams

**2.0 SQA Tasks**

This section details all important SQA tasks and assigns responsibility for each. Note that many SQA tasks are performed by software team members. Others may be performed by SQA specialists.

**2.1 Task Overview**An overview of each task.

1. Requirements Analysis and Validation
2. Test Case Design and Execution
3. Defect Tracking and Reporting

**2.1.1 Description of SQA task *1***Review and validate the project requirements with the client regularly to ensure clarity and correctness. Requirements should be complete, unambiguous and testable.

**2.1.2 Description of SQA task *2***Creation of test cases based on requirements to cover different scenarios and functionalities. Execute test cases and document results, reporting defects when found.

**2.1.3 Description of SQA task *3***Log and manage identified issues, prioritizing and communicating defects to the development team for resolution

**2.2.1 Work products and documentation of task 1**As a result of task 1, any requirements requested by the client will be recorded on a separate log and will be updated should they express new or different expectations. Any modifications done to the requirements log must be expressed to the other group members so that all are aware of any adjustments needed.

**2.2.2 Work products and documentation of task 2**As a result of task 2, a document covering different scenarios and functionalities. Each should be accompanied by the designed test cases with the results, bringing attention to any defects when found.

**2.2.3 Work products and documentation of task 3**As a result of task 3, a separate document specifically for defects will order and prioritize defects in a manner that communicates clearly to the development team for resolution.

**2.3 Standards, Practices and Conventions (SPC)**SPC that will be used to govern software engineering work are described here.

In addition to regular meetings between all parties involved, reviews will be issued towards submitted work by every member of the team, checking to ensure a smooth and on-time development. The criteria of each review will be based on the specifications derived from the client’s input and requirements. The depth to which these reviews will go often will be proportionate to how radically a submitted work changes the overall project.  
**2.4 SQA Resources**People, hardware, software, tools, and other resources required to perform SQA tasks are noted here.

No external SQA resources are defined for this project.

**3.0 Reviews and Audits**

This section discusses major project reviews conducted by SQA staff and software team members

* **3.1 Generic Review Guidelines**A set of guidelines for all formal technical reviews (FTR's) is presented in this section.

**3.1.1 Conducting a Review**As a team we will conduct reviews among all team members for minor changes and for major changes we will conduct reviews with client to make sure all changes are approved by the client before we proceed. All changes will be recorded and saved for future reference.   
**3.1.2 Roles and Responsibilities**The roles and responsibilities will be a contribution of all team members, considering we have a small team. Good communication among all team members is a must.   
**3.1.3 Review work products**Whenever our team meets with the client, we will record a set of notes from the meeting that will be available to us to reference later, ensuring that client feedback is used in future decision making by our team.

Additionally, we will be maintaining the project backlog, which has an itemized list of our progress on the features to be added.

**3.2 Formal Technical Reviews**A description of the specific character and intent of each major FTR conducted during the software process.

Our formal technical reviews will mostly consist of three types:

1. Individual testing
2. Group reviews
3. Component design reviews

**3.2.1 Individual Testing**Individual testing will consist of group members selecting sections, preferably ones they did not write themselves, to run the test cases on, and then report back with their results to the rest of the team. As needed, we will go over these tests again together, especially in the case of failed test cases that can’t be immediately resolved. This method will save time, as not every group member needs to be present for every successful test.

**3.2.2 Group reviews**

Group reviews will involve our team meeting together to discuss and test larger sections of the project, likely entire web pages. These reviews will be more broadly focused, such as on the user experience and the overall functionality of the page. The main questions to be asked during these reviews are what specifically the client requested for this component, and whether the draft of the product meets all of those requirements. If not, we will note down what still needs to be done for the component to be complete.

**3.2.3 Component design review(s)**

Component design reviews will involve meetings with the client, in which we go over the design of a component, such as a UI element or a web page, and ask specific questions to gather feedback and opinions on the component. This feedback will be written down and used to rework the component as needed.

**3.3 SQA Audits**

A description of audits performed by the SQA group with the intent of assessing how well SQA and software engineering activities are being conducted on a project.

* Any changes that will affect the project will be presented to other team members before doing any changes and will be pushed to Github. These are the changes that are minor or require little code change.
* Any Major changes will have to be agreed upon by the whole team and discussed with the client and await approval.
* Any changes made will be recorded and stored for future reference.

**4.0 Problem Reporting and Corrective Action/Follow-up**

This section describes problem reporting mechanisms that occur as a consequence of the FTR's that are conducted and the means for corrective action and follow-up.

**4.1 Reporting mechanisms**

During every SQA review, all defects or enhancements will be referred to the SQA leader. If a defect happens between our meetings, we will report it to the SQA leader so it can analyze the defect and find a solution to fix with other teammates.

**4.2 Responsibilities**

The SQA leader is in charge of all SQA activities. Each defect or enhancement reported is analyzed and given a priority ranking. The SQA leader will then assign a team member to correct the problem. the SQA leader will review the correction and ensure that the appropriate action was taken when the teammates fixed the defect or the issue. If the solution or enhancement does not meet the standards of quality set, the SQA leader will redistribute the task to the team members until the task is complete.

**Responsibilities are as follows:**

Web application design

Database

Editor/Tester

User Interface Design & Development

**4.3 Data collection and evaluation**

The SQA leader is responsible for All data collection and evaluation. All the team members have to report any defect or enhancement to the SQA leader so that the information can be recorded. The SQA leader will also keep track of all problem submissions outside of the SQA meetings.

**4.4 Statistical SQA**

Any defect submitted to the SQA leader will be analyzed. The underlying cause of the product defect will be traced. Once the cause has been identified, the source of the problem is discussed with all group members to determine the best possible solution to fix the issue. Once a decision has been made, the software will be further analyzed to determine if correcting the original defect has caused any new problems. The group will again determine the best possible solution to correct the defect.

**5.0 Software Process Improvement Activities**

The SQA group (and others) is often chartered with responsibility for software process improvement (SPI). This section describes the work associated with SPI.

**5.1 Goal and objectives of SPI**

By utilizing the SPI, we want to reduce the number of bugs on our website. Our strategy is to identify and record the root causes of every problem that arises. By doing this, it will be simpler to determine which problems may be connected and have a common remedy. The first step in tackling an issue is to recognize it, therefore we'll move fast and effectively to do that.

**5.2 SPI tasks and responsibilities**

There are four people in our team. We all intend to use document logging to keep track of SPI duties. The selected SQA leader, who is in charge of tracking mistake frequencies, will be our team's project manager. The management will evaluate the size of the issue, which will then decide the number of personnel required to address it. The project manager will also go over the defect log and statistics SQA data. Both of these will be very important when choosing which team members would receive certain duties. The teammate can get assistance from the project manager and/or other colleagues with putting a solution into practice. To find and fix the mistake, the team will collaborate to evaluate their programming techniques. The project manager will review the SQA data to note whether mistakes have been eliminated, corrected, or are still posing problems. The following steps will also be discussed during team meetings along with all of this information.

**6.0 Software Configuration Management Overview**

A summary of the SCM Plan's content. In its place, the SCM plan is mentioned. Almost certainly, as our team works to complete the Application, there will be a lot of adjustments. To make it simple to see which modifications need to be made, we want to construct a Software Configuration Management Overview. This will then enable us to assess any potential effects on the database and end result. It will also help in figuring out whether the adjustments could result in problems with the program, which is another benefit. Last but not least, this will provide everyone on the team a space to work together on the best method to make modifications to our finished product without any issue brought on by a lack of communication.

**7.0 SQA Tools, Techniques, Methods**

The same principles and procedures outlined above will be used for all SQA operations. Every group member will attend every SQA meeting once a week. Everyone in the group is required to take part in the conversation. A team member will inform any group member who wasn't there during the review. Each participant will contribute to the conversation, and one person will record any flaws or improvements that require further analysis.

The SQA team will assess the flaws or improvements to ascertain their complexity, significance to the system, and importance. Each item will be allocated to team members along with its priority after it has been prioritized. At the following SQA review, the team member will update the other team members once a flaw has been fixed or an improvement has been made. The change will be recorded. Although access to a Google doc or other database that is available to all group members would be beneficial to reduce time and duplication of error, no specific tools would be required for SQA.

**8.0 Appendix**

Supplementary information is provided here.

● R.S. Pressman and B. Maxim. Software Engineering: A Practitioner's Approach. 9th ed., Mcgraw Hill, 2020.

● “SQA Plan.” R.S. Pressman & Associates, Inc.,

http://www.rspa.com/docs/sqaplan.html.

**Return to** [**APM Documents**](http://www.rspa.com/docs/index.html)