SE-4831: Software Quality Assurance

Lab 5: Writing a Software Quality Assurance Plan (SQAP) for your Senior Design Project

Due: January 21, 2014 23:59 CDT

1. Introduction

Software Quality Assurance (SQA) is defined as a planned and systematic approach to the evaluation of the quality of and adherence to software product standards, processes, and procedures. SQA includes the process of assuring that standards and procedures are established and are followed throughout the software acquisition life cycle. Compliance with agreed-upon standards and procedures is evaluated through process monitoring, product evaluation, and audits. Software development and control processes should include quality assurance approval points, where an SQA evaluation of the product may be done in relation to the applicable standards.

From a software process standpoint, one of the most important documents from a software quality standpoint is the Software Quality Assurance Plan. The Software Quality Assurance (SQA) Plan specifies the SQA standards and methodology which will be followed during each phase of the project to ensure the delivery of quality product. This document also specifies the tools and process that will be used to achieve the defined standards and methodology.

Aside from any industrial experience you may have obtained through internships or part time employment, the largest software development project that you have worked on is your senior design projects. The purpose of this lab is to create a Software Quality Assurance Plan which is applicable to your senior design project.

On the website is a template SQAP. Your task is to complete the areas of the SQAP based on rigorous discussion of your senior design projects.

2. Lab Process

2.1. Discussing Quality Objectives and Expectations

During lab on January 15, 2014, you will be meeting as a senior design team. You goal is to determine the quality goals and expectations for your project. Some of these items may be present in your requirements specification. However, others may not be present. As part of this lab, you need to determine what level of quality is to be expected for your product. Does your customer expect 100% reliability with zero maintenance? Is your software governed by government regulations (i.e. FDA) which might impact your quality? This discussion should take approximately 45 minutes.

2.2. Defining the activities

Once the quality objectives and expectations have been set, your next step is to determine the quality activities that you will perform to ensure that your quality objectives and expectations are

met. In general, most of these will fall into the areas of reviews and testing. But, you also should consider the potential for configuration audits (to ensure that your configuration is valid before the software is released), and your problem reporting and corrective action process. For example, after a defect is found, does the finder ultimately close the defect out in the system, or is the person who fixed the defect responsible for closing the defect? If a defect is found, what process will be used to determine if it will be worked on? This step should take approximately 45 minutes.

2.3. Creating a Software Quality Assurance Plan

Once the previous two steps are completed, you are to develop a software quality assurance plan for your Senior Design Project. The SQAP should follow the template available on the course website. The SQAP should be archived in the configuration management system used for the senior design project, and submitted as a controlled version.

2.4. Discussing the Plan with your Advisor

At your next team meeting with your advisor, as part of your discussion, you are to discuss the quality objectives and outcomes with your advisor to make certain that the items which you developed in this lab are in alignment with their expectations. While you are not required to update the plan submitted for this course, it may be advisable to update you plan for your senior design project if there is a significant diversity of expectations.

3. Lab Deliverables

By January 21, 2014 each senior design group should submit a draft version of a Software Quality Assurance Plan for their senior design projects. The SQAP should be archived in the configuration management system used for the senior design project, and submitted as a controlled version. The deliverable shall be in pdf format and shall be uploaded to the course website. Only one submission per team is necessary.

If you have any questions, consult your instructor.