Software Quality Assurance Plan

For KDD-Service based Numerical Entity Searcher

(KSNES)

Version 1.1

Submitted in partial fulfillment of the Masters of Software Engineering degree.

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Committee Members
Dr. William. H. Hsu
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Dr. Mitchell Neilsen
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<th>Changed By</th>
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<td>Sowjanya</td>
<td>02/09/09</td>
<td>Initial Release</td>
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<td>Sowjanya</td>
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1. Purpose

The purpose of this document is to define the process to ensure that the software to be developed is of high quality. This document also lists the tools and the techniques used to develop the application and conclude with the list of all the deliverables at each phase.

2. Reference

[2] Project Plan

3. Management

3.1. Organization

**Supervisory Committee**
- Dr. William H. Hsu
- Dr. Torben Amtoft
- Dr. Mitchell L. Neilsen

**Major Professor**
- Dr. William H. Hsu

**Developer**
- Naga Sowjanya Karumuri

**Formal Technical Inspectors**
- Snehal Monteiro
- Svitlana Volkova

3.2. Tasks

All the project tasks performed are recorded in detail in the Project Plan document. The Project Plan document will be revised as per the suggestions from the supervisory committee after the first presentation and changes are also made to the Gantt chart as per the changes in the schedule.
3.3. Responsibilities

3.3.1. Supervisory Committee

The primary responsibility of the committee members is to attend all the three project presentations and provide feedback to the developer based on the project progress.

3.3.2. Major Professor

Major Professor holds two responsible and the first is to act as a supervisory committee member. The second responsibility is to supervise and evaluate the project with the developer on a weekly basis.

3.3.3. Developer

The main responsibility of the developer is to produce the product with in time with better performance along with documentation. Developer has to maintain the time log, meet the major professor every week and discuss the project for feedback.

3.3.4. Formal Technical Inspectors

The duty of the formal technical inspectors is to inspect the architecture, design and source code of the project and submit their findings as a formal report.

4. Documentation

The official documentation requirements for MSE projects are defined at the MSE webpage: http://mse.cis.ksu.edu/online/mse-portfolio.htm. The documents that are to be submitted are listed in Section 12 of this document.

All the documents related to the project can be found on the below web location: http://people.cis.ksu.edu/~sowji/100jiMSE/

5. Standards, Practices, Conventions and Metrics

5.1. Documentation Standards

IEEE standards will be followed for all applicable documentation throughout the project.
5.2. Coding Standards

For the code written in Java, java naming conventions will be followed. Source code API will be generated using Javadoc. For the code written in C++, follows the C++ coding standards and style guide.

5.3. Metrics

COCOMO II will be used to estimate the project cost in terms of time and effort.

6. Reviews and Audits

At the end of each phase, the documentation, source code and executable products will be evaluated by the supervisory committee. Two fellow MSE students would act as the formal inspectors and submit their findings as a report after analyzing the architecture, design and source code.

7. Testing

Completed details about the test procedures and the expected results are all listed in the Test Plan. Since the present project consists of different modules, modular testing can be done at the initial stages. Once the whole system is built, the overall performance can be tested. The results are manually checked with the expected results. It is the developer’s responsibility to fix the bugs using different methods and document them in the test plan.

8. Problems Reporting and Corrective Actions

All the problems detected during the development of the system will be recorded in the Software Problem Report spreadsheet. Each problem detected will be recorded by defining the parameters – problem description, time consumed to fix the bug, the correction actions taken. If there are any such problems that are not solved they will be brought to the notice of the major professor and discussed.

9. Tools, Technologies and Methodologies

The following tools are used for coding, testing and documenting the reports:
Eclipse IDE – for software development
Java – for software development
GNU C++ – for software development
JSP – for server side coding
Apache Tomcat – for web server
Microsoft Word – for documentation development
Microsoft Excel – for risk and problem report tracking and time logs
Microsoft PowerPoint – for project presentation creation
Microsoft Project – for drawing the Gantt chart (project planning)
Microsoft Visio – for software design development
Microsoft Front Page – for developing the project webpage
Open Office – for document conversation to PDF
JUnit – for testing the java code

10. Code and Media Control

All the source code being developed will be controlled using the Tortoisesvc – Subversion Control system. All the source code is maintained on the developer’s personal computer.

All documents will be maintained on the developer’s personal computer with filenames associated with the version numbers and the dates on which they are created. Each document includes a change log and all the documents are put on the project’s webpage:
http://people.cis.ksu.edu/~sowji/100jiMSE/

11. Risk Management

Software risks will be logged in a Software Risk Reporting and Mitigation spreadsheet as well discussed with the major professor during the weekly meeting hours.

12. Deliverables

The list below presents the deliverables at each phase of the project:

**Phase I**
- Vision Document
- Project Plan
- Prototype Demonstration
- Software Quality Assurance Plan
- Time Log
- Presentation

**Phase II**
- Vision Document
- Project Plan
- Software Requirements Specification
- Architecture Design
- Test Plan
• Software Risk Reporting and Mitigation Document
• Technical Inspection Checklist
• Executable Architecture Prototype
• Action Items
• Time Log
• Presentation

Phase III

• Component Design
• Source Code
• Executable Project
• User Manual
• Formal Technical Inspection Letters
• Project Evaluation
• Software Problem Reports
• Time Log
• Presentation