Software Quality Assurance Plan

For KDD-Research Entity Search Tool (KREST)

Version 1.2

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

Eric Davis
CIS 895 – MSE Project
Department of Computing and Information Sciences
Kansas State University
## Change Log

<table>
<thead>
<tr>
<th>Version #</th>
<th>Changed By</th>
<th>Release Date</th>
<th>Change Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 1.0</td>
<td>Eric Davis</td>
<td>9/24/2007</td>
<td>Initial Release</td>
</tr>
<tr>
<td>Version 1.1</td>
<td>Eric Davis</td>
<td>10/29/07</td>
<td>Updating tools used</td>
</tr>
<tr>
<td>Version 1.2</td>
<td>Eric Davis</td>
<td>11/08/07</td>
<td>Added additional Testing information</td>
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1. **Purpose**

This document defines the steps taken to ensure that the Knowledge Discovery in Databases (KDD) Research Entity Search Tool project is a high quality product. All required documentation for the project is listed.

2. **References**

[2] Project Plan

3. **Management**

3.1 **Organization**

**Supervisory Committee**
- Dr. Scott DeLoach
- Dr. David Gustafson
- Dr. William Hsu

**Major Professor**
- Dr. William Hsu

**Developer**
- Eric Davis

**Formal Technical Inspectors**
- To Be Determined
- To Be Determined

3.2 **Tasks**

All project tasks are discussed in detail in the Project Plan. The Project Plan includes a Gantt chart that lays out all of the tasks and their deadlines.

3.3 **Responsibilities**

3.3.1 **Supervisory Committee**

The role of the supervisory committee is to prepare for and attend each of the three project presentations that will occur at the end of each project.
phase. The committee members will provide feedback and suggestions on the state of the project.

3.3.2 Major Professor
The role of the major professor is twofold: to act as a supervisory committee member, and to meet weekly with the developer to discuss progress, expectations, and to provide suggestions.

3.3.3 Developer
The role of the developer is to produce the product and all supporting documentation. The developer is responsible for maintaining a time log, and for meeting weekly with the major professor to discuss the project.

3.3.4 Formal Technical Inspectors
The roles of the formal technical inspectors are for completing a formal inspection of the project’s architecture, design, and source code. They will submit a report on their findings during the formal inspection.

4. Documentation
The official documentation requirements for MSE projects are defined at: http://www.cis.ksu.edu/~sdeloach/mse/portfolio.htm. Additional documentation may be required at the discretion of the major professor and developer. The planned documentation for the project is listed in Section 12 of this document.

All project documentation will be available on the project website: http://www.cis.ksu.edu/~efd3467/index.html

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
Java naming conventions will be followed for all source code developed. Source code API will be generated using Javadoc.

5.3 Metrics
COCOMO will be used to estimate project effort.

6. Reviews and Audits
All documentation, source code, and executable products will be evaluated by members of the supervisory committee at the conclusion of each phase of the
7. Testing
The Test Plan will list the test procedures and expected results of all tests in detail. However, a brief description of what type of testing will be performed will be given below.

General testing of the web crawling and web search portions of the project will be performed by crawling the Kansas State University Department of Computer and Information Sciences domain and searching for specific pieces of information. Sample queries include “professor of machine learning”, “computer graphics”, and “enrollment forms”. The results returned will then be verified manually to ensure that the pages being returned actually contain the requested search strings.

The formal testing of the entity search portion of project will follow the same tests as found in [5]. A dataset based on a 2006 general web crawl from WebBase Project will be used. The original data was over 2TB, so it will have to be scaled down in order to allow reasonable testing to occur. Once the data is scaled down, entity searches will be performed on the data to see if the correct information can be extracted. Sample queries include “Amazon Customer Service #phone”, “Bill Gates #email”, and “Ebay Customer Service #phone”. The results given as the best results by the entity searcher will be manually checked for accuracy.

8. Problem Reporting and Corrective Actions
All problems found during testing will be recorded in the Software Problem Report spreadsheet. Each problem found will list the problem, the estimated time to fix, the date fixed, and the corrective action taken. If the problem cannot or will not be solved during the project, it will be noted. All problems will be discussed with the major professor.

9. Tools, Technologies, and Methodologies
The following tools will be used for coding, testing, and documentation:

- Eclipse IDE – for software development
- Eclipse FatJar – for building executable JAR files
- Eclipse Jigloo Plug-in – for GUI development
- Microsoft Word – for documentation development
- Microsoft Excel – for risk and problem report tracking and time logs
- Microsoft PowerPoint – for project presentation creation
- Adobe Acrobat – for document conversion to PDF
- Microsoft Project – for project planning
- Microsoft Visio – for software design development
- USE 2.3.1 – for developing formal specifications
10. Code and Media Control
   All developed source code will be controlled using a CVS system. The CVS is located at: http://fingolfin.user.cis.ksu.edu/repos/KDD/projects/entitysearch.

   All documents will be maintained on the developer’s personal computer with associated version numbers. Change logs will be maintained in each document. All completed project documentation will be available on the project website at: http://www.cis.ksu.edu/~efd3467/index.html.

11. Risk Management
   Software risks will be documented in the Software Risk Reporting and Mitigation spreadsheet. The risks and potential mitigation strategies will be discussed with the major professor as they appear.

12. Deliverables
   The following are the deliverables for 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