Compensation Analysis Tool

Software Requirements Specification

Ali Reda	1206754
Steven Palmer	1434676

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Contents

1 Introduction

1.1 Purpose and Overview

The purpose of this document is to provide a description of the system requirements for the Compensation Analysis Tool software. The objectives and scope of the project are given, as well as . Functional and non-functional requirements are identified and . Requirements on the development and maintenance process of the project are also described.

1.2 Definitions, Acronyms, and Abbreviations

1. to be completed.

2 Domain

2.1 Objective

The objective of this project is to produce a software tool used to assess and rank the most viable locations to start a career in a particular field. The software will produce a list of locations that offer the best income potential for a particular career or field using a mixture of employment and cost of living statistics. In addition, the software will include an option to consider the possibility of commuting in order to reduce the cost of living.

2.2 Scope

The application will be geographically limited to the United States and will only consider income related factors to arrive at a ranking. These limitations may be expanded upon in the future, but such enhancements are beyond the current scope of the application. The application will be implemented in Java and will be able to be run on any desktop, laptop, or other device with the ability to execute JAR (Java Archive) files.

The stakeholders of this project include the team members, the instructor and teaching assistants of the CAS 2XB3 course, and any persons seeking employment who would use the tool.

2.3 Constraints

The following constraints will apply to the development of our application:

1. All milestones outlined in the CAS 2XB3 project description must be met.
2. All deliverables must be completed in their final form by the due date given in the CAS 2XB3 project description.

2.4 Assumptions and Dependencies

The following assumptions were made in the development of our requirements:

1. The computer/device used to run the application will have the ability to execute JAR files.

2.5 Risks

The risks that may need to be overcome during the implementation of this project are

1. Using the Data sets to give users accurate and up to date results of potential employers.
2. Using Google Maps API to allow the user to use their location to allow app to show results in their area.
3.

3 Functional Requirements

3.1 Input Requirements

FIR1. The application must allow the user to select a career field.

Rationale: The user must be able to select a career field in order to perform the analysis.

Fit Criterion: The user is able to select a career field when running an analysis.

FIR2. The application must allow the user to (optionally) select a career title.

Rationale: The user must have the option of selecting a career title to allow for a more specific analysis.

Fit Criterion: The user is able to select a career title when running an analysis to .

FIR3. The application must allow the user to (optionally) select a location restriction.

Rationale: The user must have the option to limit analyses within a radius of a particular city.

Fit Criterion: The user is able to select a location and radius when running an analysis to limit the search.

FIR4. The application must allow the user to (optionally) select a commuting distance.

Rationale: The user must have the option to limit analyses within a radius of a particular city.

Fit Criterion: The user is able to select a career field when running the application.

FIR5. The application must allow the user to run an analysis after all required/optional inputs are specified.

Rationale: The application must be able to perform analyses.

Fit Criterion: The application transforms input data into output data.

3.2 Data Requirements

FDR1. The application must load and store geographic location data for U.S. cities.

Rationale: The geographic location data of U.S. cities is required by analysis algorithms.

Fit Criterion: Geographic location data is successfully loaded/stored by the application.

FDR2. The application must load and store employment data.

Rationale: Employment data is required by analysis algorithms.

Fit Criterion: Employment data is successfully loaded/stored by the application.

FDR3. The application must load and store cost of living data.

Rationale: Cost of living data is required by analysis algorithms.

Fit Criterion: Cost of living data is successfully loaded/stored by the application.

3.3 Algorithmic Requirements

fix / complete

FAR1. The application must be able to produce a graph.

Rationale: Location data must be sorted to .

Fit Criterion: The application successfully sorts location data in $n\ log\ n$ time.

FAR2. The application must be able to search .

Rationale: Searching of location data will be performed frequently by the application.

Fit Criterion: The application searches for an entry in the loaded location data and returns a result in $n \; log \; n$ time.

FAR3. The application must be able to produce a list of locations that are within .

Rationale:

Fit Criterion:

FAR4. The application must perform an algorithmic analysis .

Rationale: .

Fit Criterion:

3.4 Output Requirements

FOR1. The application must print the output data in a way that is readable by the user.

Rationale: The user needs to be able to see the result of the analysis.

Fit Criterion: Output data is formatted and displayed in the application.

4 Non-Functional Requirements

4.1 Look and Feel Requirements

4.1.1 Appearance Requirements

AR1. The Application should have a default bright and colorful scheme, using uniform colors and a uniform layout.

AR2. All tabs, buttons and input fields must be easily visible.

4.1.2 Style Requirements

SR1. The Application should provide a uniform look and feel between all the pages and tabs.

SR2. Results returned from the input must be clear and uniform.

4.2 Usability and Humanity Requirements

4.2.1 Ease of Use Requirements

EUR1. Searching through career fields, and finding the needed result must be easy and fast to do.

EUR2. Choosing your current location, and accepted radius must be easy to do.

4.2.2 Learning Requirements

LR1. The product should have an intuitive layout, it will take the user no longer than 10 minutes to learn to use.

4.2.3 Understandability and Politeness Requirements

UPR1. Application must use proper English, and must be easy to read.

UPR2. No inappropriate language must be included.

4.2.4 Accessibility Requirements

ACR1. Font sizes, input boxes, and results should all be appropriate size.

4.3 Performance Requirements

4.3.1 Speed and Latency Requirements

SLR1. Load times between the user inputting their information to the program giving the results must take no longer than 10 seconds.

4.3.2 Precision or Accuracy Requirements

PAR1. The application must give appropriate results depending on the exact radius the user requested.

PAR2. Inputted radius must be accurate to 100 meters.

4.3.3 Reliability and Availability Requirements

RAR1. The system shall be available at all times.

4.3.4 Robustness or Fault-Tolerance Requirements

RFR1. The application must give the user a relevant error message when an error occurs.

RFR2. The application must insure the user inputs all neccessary fields before searching.

RFR3. The application must save the users previous entries.

4.3.5 Longevity Requirements

LONGR1. The application must run as long as it is on a compatable OS.

4.4 Operational and Environmental Requirements

4.4.1 Expected Physical Environment

EPE1. The application will be used by users looking for potential employement.

4.5 Maintainability and Support Requirements

4.5.1 Maintenance Requirements

MR1. The system should be documented in such a way that maintaining and updating it is easy for programmers who did not build it initially.

4.5.2 Supportability Requirements

MSR1. The application must run on windows, and be accessible to anyone with a windows computer.

4.5.3 Adaptability Requirements

MAR1. The system should be built in such a way that adding entirely new features does not require the rewriting of old features.

4.6 Security Requirements

4.6.1 Access Requirements

SAR1. The Application will be accessible to windows users.

4.6.2 Privacy Requirements

SPR1. The system shall protect the privacy of users, not allowing users to access others users personal information

4.7 Cultural and Political Requirements

4.7.1 Cultural Requirements

CCR1. The product will use Canadian English spelling.

4.8 Legal Requirements

4.8.1 Compliance Requirements

LCR1. This product will comply with the Personal Information Protection and Electronic Documents Act.

LCR2. This product will comply with the Ontario Freedom of Information and Privacy Act.

5 Requirements on the Development and Maintenance Process