**1. Introduction**

**1.1 Purpose**

The purpose of this document is to provide a specification of the Text Processing Tool. This tool aims to offer text processing capabilities using regular expressions, data management features using Java collections, with an interactive user interface built using JavaFX.

**1.2 Scope**

The Text Processing Tool allows users to perform various operations on text data, including searching, matching, and replacing text patterns using regular expressions. Additionally, it offers functionalities to manage collections of data, such as adding, updating, and deleting entries. The user interface will facilitate easy interaction with these features.

**1.3 Abbreviations**

* **Regex:** Regular Expressions
* **JavaFX:** A set of graphics and media packages that enables developers to design, create, test, debug, and deploy rich client applications that operate consistently across diverse platforms.
* **UI:** User Interface
* **CRUD:** Create, Read, Update, Delete

**2. Overall Description**

**2.1 Functions**

* **Regex Operations:** Search, match, and replace text patterns.
* **Text Processing:** Process and manipulate text data.
* **Data Management:** Manage collections of data using Java collections.
* **User Interface:** Interactive GUI for input and output operations.

**3. Specific Requirements**

**3.1 Functional Requirements**

* **Search Text:** Allow users to input text and regex patterns to search within the text.
* **Replace Text:** Allow users to replace text based on regex patterns.
* **Search Patterns:** Use Pattern and Matcher to search for patterns in text.
* **Display Results:** Show the matched or replaced text to the user.

**3.2 Non-functional requirements**

* The tool should process regex operations and data management tasks efficiently.
* The UI should be responsive and provide feedback within a reasonable time frame (less than 1 second for most operations).