[**CS-5103-001-Spring-2023-Software Engineering**](https://utsa.blackboard.com/webapps/blackboard/execute/courseMain?course_id=_239769_1)

**Strings and Words Project**

**04/12/2023**

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**Summary:**

The following project consists of a script that reads a file based on the user path input, gathering each word independently from each other and counting the times it repeats. Then it checks the number of characters each word has and the total number of lines that the file contains. At last the script is also capable of receiving a word coming from the user and replacing all its occurrences in the original text.

The script is split into 3 files, main.py that is the script meant to be run, utils.py is the script holding all the dependencies, and unit\_testing.py that has the testing for multiple cases of the program.

**Design:**

The design of this code follows an object-oriented programming approach. The program has several functions defined in the utils module which follows a procedural programming approach.

Overall, the design of this program follows a modular reusable approach, separating the program’s functionality into different functions and methods.

The code has multiple comments and is properly formatted, making it easy to understand and maintain.

The code was formatted using PEP8 formatting rules.

CPD was used to check for duplicates in the code, the output was as follows:

Text

Description automatically generated

No duplicates were found.

The whole implementation was kept the same in terms of design. The program did not require refactoring. The complexity of functions goes from easy to complex. In order to add new requirements, new functions were declared and applied sequentially in the previously written code. This allowed the code to be maintainable and clean.