ECOR 1042

**Project Report**

**Book Dataset Analysis**

Submitted by

## **T1A-4**

Peniel Terfa, 101211896

Dearell Tobenna Ezeoke , 101245819

Oluwatobi Olowookre 101245900

Mushaf Wasiq 10185886

August 19, 2022

**Carleton University,**

**Faculty of Engineering and Design**

1 **CONTENTS**

[2 The Problem Statement: 2](#_Toc4676)

[3 The Project Goal 3](#_Toc4677)

[4 The Project Design: 3](#_Toc4678)

[5 The Project Process 3](#_Toc4679)

[6 Team Contributions 4](#_Toc4680)

[7 References 4](#_Toc4681)

# THE PROBLEM STATEMENT:

Over the course of the project, the group encountered five milestones. The first one was to store the given data in different formats using combinations of sets, lists, tuples and dictionaries. A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements [1]. A set is a collection that is unordered, unchangeable, and unindexed [2]. A tuple is a collection of objects which ordered and immutable [3]. A dictionary is an unordered and mutable Python container that stores mappings of unique keys to values [4]. The second milestone was adding the functionality to retrieve different criteria from the dataset such as adding or removing values from the dataset. For example, if new book is removed to the previous data given the software will print “The book has been successfully removed”. The next milestone was to sort the given data based on the specified criteria. The sorting method required for this section was the bubble sort method which is a sorting algorithm used to sort list items in ascending order by comparing two adjacent values [5]. After the files are sorted, the next task is to create an interactive user interface. This is to allow users to perform all the functionalities from one easy-to-use menu. To end the project, the code had to be polished. This meant editing functions to remove duplicates from the dataset as well as standardizing the format of all submissions.

# THE PROJECT GOAL

The goal was to create a simple, yet powerful program to search through and sort a .csv file. The user will be prompted to enter a command from a displayed menu. The program will perform operations based on the user’s inputted command and print out final results for the user to see. The user interface was made to be clean and simple, so that the program is intuitive and easy to use.

# THE PROJECT DESIGN:

The analysis will be comprised of three major milestones with each focusing on different aspects of analyzing a book dataset. The focuses of the milestones are [6]:

1. Reading a dataset file in python. This includes loading a dataset and displaying its contents based on specified criteria.
2. Creating different data structures such as lists, sets, tuples, and dictionaries [7].
3. Reading the dataset to find only required information such as genre, title, or author. [7].
4. Sorting a dataset by specified criteria. This entails sorting in alphabetical, ascending, descending, or other methods. depending on the defined criteria being sorted [8].
5. Creating an interface. This interface is interactive and allows the user to perform the listed actions. This portion is the integration of all the previous functions written into a single menu [8].

# THE PROJECT PROCESS

In this project, the team encountered three milestones. The first milestone was completed by four members, with the rest being completed by only three members. Each milestone was done incrementally over a span of two weeks and each milestone was breakdown in two parts with different cases. Each part required the team to develop code individually and later compiling it together into one large submission. In the second part of the first milestone, the team was introduced to being tasked with developing test code for the functions written by other team members. Finally, all the written code was merged and reviewed.

# TEAM CONTRIBUTIONS

Tobenna Ezeoke Project Goal

Oluwatobi Olowookre Project Design

Peniel Terfa Problem Statement

Mushaf Wasiq Project Process

# REFERENCES

1. P*ython- Lists.* [Online]. Available

https://www.digitalocean.com/community/tutorials/understanding-lists-in-python-3.[Accessed Aug.18, 2022]

1. *Python Sets*. [Online]. Available https://www.w3schools.com/python/python\_sets.asp. [Accessed Aug.18, 2022]
2. *Python - Tuples*. [Online]. Available

https://www.tutorialspoint.com/python/python\_tuples.htm. [Accessed Aug.17, 2022]

1. *Python – Dictionary.* [Online]. Available https://towardsdatascience.com/15-things-youshould-know-about-dictionaries-in-python-

44c55e75405c#:~:text=What%20is%20a%20Python%20dictionary,each%20key%20from%20its %20value. [Accessed Aug.18, 2022]

1. Alyssa Walker, *Bubble Sort Algorithm with Python using List Example*, Nov.24, 2021. [Online]. Available https://www.guru99.com/bubble-sort.html. [Accessed Aug.18, 2022]

1. Dr. Rami Sabouni, *ECOR 1042 PROJECT*

*DESCRIPTION*, Brightspace Carleton [Website]. [Accessed Aug.18, 2022]

1. Dr. Rami Sabouni, *MILESTONE 1*, Brightspace Carleton [Website]. [Accessed Aug.18, 2022]

1. Dr. Rami Sabouni, *MILESTONE 2*, Brightspace Carleton [Website]. [Accessed Aug.18, 2022]