

Searching Bibliography File

A Bibliography file allows authors of publishable materials (journals, books, conferences, etc ...) to compile and structure the list of sources that have been referenced when writing a published document. It is common practice to structure a bibliography file based on information such as author, year of publication, type of publication, and, title.

Problem Statement

A customer is looking for a search tool for bibliography files. The search tool is expected to have the following functionalities:

- (1) Search and Display all bibliography entries containing a particular author's surname. The system needs to display all bibliography entries (Title, Name, Year and type) with matching author's surname.
- (2) Search and Display all documents published within a given calendar year.
- (3) Search and Display all bibliography entries based on a particular word appearing in the title of that document.
- (4) Display the number of each publication types available with the bibliography file.
- (5) A search menu to allow users to interact with the system.

Scope of work

In this coursework, students will develop a system that can read data that has been stored within text files. It is assumed that the files to be processed contain entries of documents published online. These files, known as bibliography files, will contain entries that follow a particular structure. Three categories of documents have been considered: Journal, Conference and Book. An example of a bibliography entry is provided in Figure 1.

```
Title {The wonders of the Universe.}
Author {Lucas, G.}
Year {2004}
Type {Book}
```

Figure 1: Bibliography entry example

Deliverables are as follows:

- (I) **A report containing the following:**
- Description of the problem
 - A flowchart showing the design of your system
 - Well-commented codes (banners and inline comments)
 - Unit and systems tests using snapshots of displays from standard output.
 - References
- (II) **Soft copy of code** (source files (.c), header files (.h), CMakeLists.txt and data files used to test system).

Additional notes

Marks will be allocated for the following:

- Use of structures to store data for each bibliography entry.* While functions will be provided to read data from files, students are expected to modify the functions to use structures (array of structures) to store the data and perform search/navigation activities.
- Modularity of program* (tasks and/or subtasks coded within functions)
- Use of pointers*, mainly for passing parameters within functions.

Marking Scheme

Report component	Marks
Description and requirements specifications.	/5
A diagrammatic design of your program (flowchart)	/10
Well commented programs (including program and function banners)	/10
Use of functions for the following tasks in the program: (1) Menu for user interaction (2) Search based on author (3) Search based on Title (4) Search based on Year (5) Display Table of Publication Types	/25
Use of arrays and pointers	/10
Use of structures to store bibliography data	/10
Unit Tests and snapshots of outputs	/20
System test and snapshots of outputs	/10

Please note that this is an individual piece of work. **Deadline for submission of report and code: 03rd of August 2020 (end of day).** Submission will be through Blackboard. Link will be provided prior to submission.