PROJECT
Library Catalog

Project Due: Week 14, Tuesday – Aug 8/2017 by the end of the lab class

Problem:

Design and write a C program that manages a library catalog (library database).

For each library item, the program should collect and track the following information:

- **Item catalog number**
- **Title**
- **Author** (first and last name)
- **Genre**
- **Format** - "Book", "eBook", or "CD"
- **Description** (up to 100 characters)

The program should have the following features:

1. The program will display the menu. Menu choices should include:
    - **ADD** → Add a new item
    - **MODIFY** → Modify/update an existing record (one item). User selects the item to modify.
    - **DISPLAY ITEM** → Display one (1) item. User selects the item to display.
    - **DISPLAY CATALOG** → Display all catalog items (**Bonus** 5%: Before displaying data, sort the list alphabetically by format - Book, CD, eBook).
    - **EXIT** → Save data to a file and close the program. This file provides the "permanent" storage for the library catalog.

    It is preferred that each selection calls a different function. You can use a switch-case to make the selection.

2. **BONUS (10%**): When the program starts, it will first load data from the file (**Note:** when the program starts for the first time, the file will not exist and there will be no data to load). At the end of the program (when EXIT is selected) data will be stored to the same file which will then be used by the program on subsequent runs.

Requirements:

You are required to use the following C language features:

- Structures
- Pointer arithmetic
- File I/O

You may choose to use:

- Dynamic Memory Allocation
- Sorting
- typedef, Union, and/or Enumeration
- Other C features

Submission Requirements

- The following documents are to be submitted electronically using Blackboard dropbox (named Project), after you demonstrate your program:
  - Flowchart describing the program design
  - The source code (.c file)
  - List of test data you used to validate your program
  - Sample of the program output

- The Cover Page (provided below) must be printed, signed, and handed in after you demonstrate your program.

- **An extension will not be granted for this project. The project is due at the end of your last lab.** You may earn up to a 5% bonus of the project mark if you demonstrate your program to the professor before the due date.

Marking Scheme:

- Program Design: 30%
- Correct use of C constructs: 40%
- Documentation: 15%
- Demonstration: 5%
- Output: 10%
- Bonus: up to 20% (5% + 5% + 10%)

Total (100%) + Bonus

PRG255: Library Catalog Project - Cover Page

Student Name: _____
Student ID: _____
Section: ____
Date Submitted: _____

ACADEMIC HONESTY STATEMENT
My signature below constitutes my pledge that the entirety of this project is my own work. I understand and accept the following definition of plagiarism:

1. Plagiarism includes the literal repetition without acknowledgment of the works of another author. All significant phrases, clauses, or passages in this paper which have been taken directly from source material have been enclosed in quotation marks and acknowledged in the text itself as well as in the list of Works Cited or Bibliography.

2. Plagiarism includes borrowing another's ideas and representing them as my own. To paraphrase the thoughts of another without acknowledgment is to plagiarize.
Plagiarism also includes inadequate paraphrasing. Paraphrased passages (those put into my own words) have been properly acknowledged in the text and in the bibliography.

3. Plagiarism includes using another person or organization to prepare this paper and then submitting it as my own work.
I understand what plagiarism is, and I further understand that if plagiarism is found in my paper, my professor will follow the procedures on academic dishonesty set forth by Seneca College.

Signed _____
Date _____

Marking Scheme:

Program design	30%		Demonstration	5%	
Correct use C constructs	40%		Output	10%	
Documentation	15%		Bonus	20%	
	TOTAL:		out of 100% (+ Bonus)		