



**Department of Computer Science
COMP2321 Data Structures
(Spring 2019/2020)**

Project#3 Due Date: Tuesday 19 May 2020 (FINAL DEADLINE)

You have to maintain information for a bookstore. Each book should have the following information: book name, author's name, publishing date, publisher address (i.e., country), and category (fiction or non-fiction). For keeping track of the books that exist at the bookstore, you should implement an efficient system, based on AVL tree data structure, to keep track of the available books with the following operations allows:

- Read the data from a text file (books.txt).
- Create an AVL tree to store the book information (use book's name as key).
- Insert a new book to the library.
- Search for a book using book's name or author's name.
- Update/Delete a specific book (search using the book's name).
- List books by category in lexicographic order of their names.
- Print the height of the tree.
- Save the data to a file.

The data can be stored in the file as follows:

```
Algorithms|Mark Weiss|1996|USA|Non-fiction
```

Submission instructions:

1. **This is individual work.** It should represent your own efforts. It is fine to discuss your work and to ask your colleagues, but you are not allowed to copy/paste the work of others or give your work to anyone else.

2. **Document format.** Please submit only the code file (c file) containing the code of your project. Please rename it as follows: **“A3_YourStudentID_FirstNameLastName_SectionNo.c”**.
E.g., A3_1189999_AmmarAhmced_2.c → given this student in section 2.
3. Include your full name, student ID, and section number in the beginning of your file.
4. Please do not compress the file, only the C-file is needed.
5. Files not following the convention in point 2 will not be marked.

Good luck!