



**Department of Computer Science**  
**COMP2421 (Second Semester – Spring 2022/2023)**  
***Project#3 Due Date: 6 July 2023 (before midnight-by 23:59)***

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In this project you will build an application to maintain information for school classes. For each of the students in a class, the following information is kept: a unique student ID, student name, home address (city), id of class he is currently in, and date of enrollment. For keeping track of the students, the school secretary would use a computer program based on a Binary Search Tree data structure. Write a program to help the secretary, by implementing following the following operations:

- Insert a student with all its associated data.
- Find a student by his/her student ID, and support updating of the student info if found.
- List all students in lexicographic order of their names.
- Search for a city and list all students from that city in lexicographic order of their names.
- List all students by their class in lexicographic order of their names.
- Delete a student given his/her student ID.
- Save all students in file *students.data*.
- Exit.

If file *students.data* exists, your program must automatically load its contents. This program should be interactive.

**Grading policy and general notes on the project:**

1. Your application should have all functionalities working properly. Twenty marks will be graded for the functionality of the project.
2. The following notes will make up the remaining 10 marks of the grade:
  - a. There has to be adequate documentation and comments in the code (i.e., functions, loops, etc.).

- b. Your code should follow the code convention (i.e., spaces, indentations, etc.); and
- c. Your application should contain a menu to allow the user to select which option(s).

**Notes and 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. You are not allowed to post/copy from other websites and/or social media and this will be considered as cheating.
2. Any **plagiarized** code will not be marked.
3. **Document format.** Please submit only the code file (c file) containing the code of your project. Please rename it as follows: **"P3\_YourStudentID\_FirstNameLastName\_SectionNo.c"**.
4. **Input/output file name.** Make sure that the input/output file names are the same as in the specifications.
5. Include your full name, student ID, and section number in the beginning of your file.
6. Please do not compress the file, only the C-file is needed.
7. Files not following the naming convention in point 3 will not be marked.