DT228/1 Algorithms Assignment

"DT265 is a postgraduate programme in the School of Computing, designed to provide an entry path for Bachelors Honours graduates in other numerate disciplines into graduate entry level careers in computing."

There are three types of students on this course:

1. Funded EU students
2. Non-funded EU students
3. International students

Admissions come from three separate systems so there are three separate lists of students. The numbers are as follows:

- 20 funded EU students
- 6 non-funded students
- 10 international students

1. In flowchart, write an algorithm that combines and sorts the **three** lists of students into one list:
    a. You should attempt to adjust a sorting algorithm by adding a searching part to it or by using two sorting algorithms.
    b. What is its Big O? Illustrate in detail why.

2. Using a pseudo-code, write an algorithm to search for all international students:
    a. What is its Big O? Illustrate in detail why.

3. Using a pseudo-code, write an algorithm to search for a specific student by surname:
    a. What is its Big O? Illustrate in detail why.

4. Implement the algorithms derived in 1, 2 and 3 in C. You will need to have the three lists of students stored on file.

Marking Breakdown

Section	Mark
Part 1	40%
Part 2	15%
Part 3	15%
Part 4	20%
Demo	10%

This assignment must be submitted before **10am on Monday 24th April**.
The project will be demonstrated on **Week 12** and **Week 13.**

What do I need to submit?

1. A project report (in pdf) with Part I, Part II and Part III. **//ONLY PDF WILL BE ACCEPTED**
2. C files and files that hold the students' information from Part IV.
3. Quiz (through Webcourses, as shown below).

QUESTION 1
What algorithm(s) did you use in Part I?

QUESTION 2
What is the Big O of Part I?

QUESTION 3
What algorithm(s) did you use in Part II?

QUESTION 4
What is the Big O of Part II?

QUESTION 5
What algorithm(s) did you use in Part III?

QUESTION 6
What is the Big O of Part III?

QUESTION 7
Please tick the elements that you submitted:

- Flow chart for Part I
- Pseudo code for Part II
- Pseudo code for Part III
- Code working for Part I
- Code working for Part II
- Code working for Part III