**A-Level Computer Science – Record Structures/Files - Exercise**

1. A book consists of an ISBN number, a title, an author, year of publish and a publisher.

Create a record structure to hold this data.

1. Define an array of these records (Size of 5)
2. Write a procedure called setup which loads a file called books.txt and populates the record structure of books.

1. Make use of another procedure called display. This procedure should display each book from the array formatted in an appropriate manner.
2. Alter the program to make use of a menu instead of just reading the file and outputting it:

* The menu will contain the following options:
  + 1) Sort books by title
  + 2) Search for a book based on title
  + 3) Display all books
  + 4) Quit
* Use a Function (getMenuChoice) to allow the user to enter a valid menu option. There must be suitable try/catch used within this.
* For menu option 1, 2 and 3 there should be a separate routine to perform the task.

1 will need to execute a bubble sort

2 will conduct a Binary Search

3 will make use of the procedure already coded.

1. Alter the program to allow another menu option that allows a book to be added to the end of the file.

* Alter the program to allow the array to be re-sized depending upon the number of books in the file.

When adding a book – the user could add several books at once e.g:

How many books do you wish to add? 3

Please enter Book 1: (book details entered)

Please enter Book 2: (book details entered)

Please enter Book 3: (book details entered)

Then if you selected again:

How many books do you wish to add? 2

Please enter Book 4: (book details entered)

Please enter Book 5: (book details entered)

Think carefully – you will have to use a different style of loop (thinking about loop until a value = null)