Lesson activity: Programming challenge 2 Student scores

Exercise 1

Create a program that accepts the input of 10 student test scores, and outputs the average of these scores. Your program should validate the student scores which must all be whole numbers between 0 and 10 inclusive.

Note

You may consider creating a subroutine to validate the input.

Exercise 2

Amend your program to allow the input of an unlimited number of student scores, outputting the average, highest and lowest score. The program must validate the scores in the same way as Exercise 1.

You will need to include a way of stopping the input of scores so that the program will then calculate the output. This could be done by entering a value of `'x'` or `-1` instead of a student score. An example of output is shown below.

```
Welcome to AQA Student Scores
please enter your student scores or x to calculate average
Student Score: 5
Student Score: 10
Student Score: x
Average = 7.5
>>>
```

Exercise 3

Amend your program to include the input of the student first name as well as their score. Output the name and score of the student with the highest score, the name and score of the student with the lowest score, and the average score.

Extension

- Use a record structure to save, search and output student scores. A linear search, binary search (with sort) could be used to demonstrate these techniques.
- Add a menu to your program that will allow the user to select functions such as searching, calculating the mode, and median of a set of student scores etc.