

QUESTIONNAIRE

This Questionnaire is to help us decide which Programming unit you will be taking in the first semester.

COMS11800 Programming Project is for people who already have experience with (programming) computers. In this project you will write a C program that reads a description of a boolean circuit, simplifies this description, and prints out a circuit with different gates in PostScript. At the end of the unit you should be fluent in C.

Alternatively if you have little or no experience in programming you will take **COMS11300 Procedural Programming** this course introduces the foundations of practical programming and teaches C as a language to implement procedural programs.

Name:

Only if you own a computer in Bristol: which operating system does it run?
(This question is for statistics only; the answer is irrelevant to whether you do **COMS11800/COMS11300**)

No computer / Linux / Windows/ MacOS / Other ()

Please circle your answer:

- 1 Have you done A-level Computer Science, with programming, data structures (lists, trees, hash tables) and basic computer architecture?

No ? Please go to Question 2.

Yes (to all of the above) ? You can stop here.

You have a choice of either unit. We think you will be able to do **COMS11800**, the Programming Project, but if you do not feel confident, you can choose to do the Introductory unit, **COMS11300 Procedural Programming** instead.

Please tick one of the options below:

- I would like to take **COMS11300 Procedural Programming**
- I would like to take **COMS11800 Programming Project**
- I am still undecided and so I will fill in the rest of the questionnaire and ask for advice from one of the staff members at registration on Monday afternoon.

- 2 **Have you written substantial programs (500 lines+)**

Yes ? Please go to Question 3.

No ? You can stop here. You will be doing the introductory unit **COMS11300 Procedural Programming**

- 3 **Do you know what a hash table is, and could you code one?**

Yes
No

- 4 **Do you know how to program using recursion ?**

Yes
No

5 Do you know what a binary tree is, and could you code one?

Yes
No

- 6** Please write a function to find the median value in an array of 13 integers (the median is a value in the array so that half of the values in the array are greater than or equal to the median, and half of the values in the array are less than or equal to the median). You can assume that the function receives an array with 13 different values. Your function should return one value.

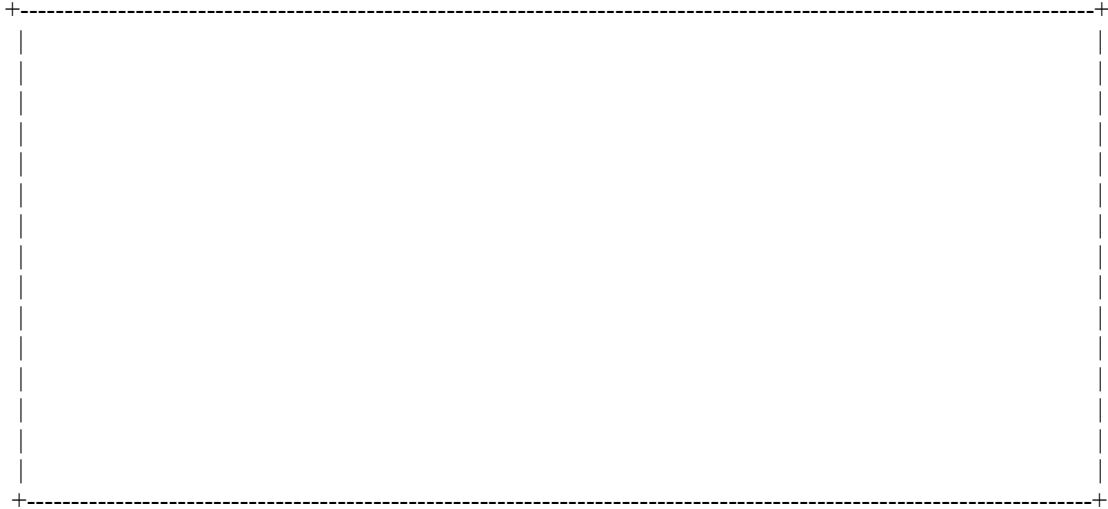
Write in one or two sentences how you would go about calculating the median:

In the box below write the code for the function to calculate the median. You can write the function in any language that you like.

Below is a function written in the fictitious language D. This function calculates the average value of an array:

```
FUNCTION Number average( Number() x, Number n ) [  
  Number i := 0 ;  
  Number sum := 0 ;  
  
  IF( n == 0 )  
    RETURN 0 ;  
  FI  
  i := 0 ;  
  WHILE( i < n )  
    sum := sum + x(i) ;  
    INC i ;  
  ELIHW  
  RETURN sum / n ;  
]
```

Translate the function you wrote in question 4 into the language D:

A large rectangular area defined by a dashed border, intended for the student to write their answer. The box is empty and occupies the central portion of the page.