CS23710 Worksheet Two 2000-01

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1 Introduction

This weeks practical is intended to provide practice using simple arithmetic constructs in 'C'. The practical also provides an opportunity to use the input function 'scanf' together with a further opportunity to use the output function 'printf'.

You will also need to use a looping construct in part two.

NOTE: You will have to look up various material related to scanf, the looping construct you choose to use and other details in your text book or the on-line manual pages.

Helpfull Hints:

Note, the parameters indicating variables in the call to the scanf function require you to indicate the address in memory associated with the variable into which you would like a value from the input to be placed. The & operator is applied before the name of a variable to request its address in memory.

As an example, the following declares an integer variable called i and then gives the address of i to scanf asking scanf to read input from the standard input device (e.g. the keyboard) and place the supplied integer into i.

```
int i;
scanf("%d", &i);   /* note the & in front of i */
```

2 Problem One

Design and implement a program which will accept a person's height given in feet and inches (input as two separate integers) and which will output the height in metres.

Assume that 1 inch = 2.54 centimetres

Don't forget your previous lectures on algorithm design. Before you start to tackle any computer program, write down a solution on paper, carry out a pencil and paper test, revise the algorithm if necessary. Only when you are happy that you have a working algorithm should you start to write the code.

3 Problem Two

Design and implement a program which will accept a series of integers (representing the marks of students in a particular class), terminated by -1. Once all the marks have been entered, the program should write out the average mark gained.

Don't forget the earlier remark and designing first and don't forget to use meaningful variable names and comments.

4 Extra Exercises

As mentioned in lectures, a good way to debug programs is to use a specially designed "debugger" rather than modifying your program. Use any time left over in the demonstrated practical this week, AND some of your own time outside the practical to learn how to use the debugger called gdb.

A "quick reference card" for gdb is attached to this worksheet and copies of the man pages are available on-line.

5 Effort Allocated to the Worksheet

This worksheet should be completed in your two hour practical this week.

6 Submission Date

You should show your work to a demonstrator in your practical and make sure that he initials the appropriate boxes on his attendance / marking sheet for the sections you have completed.