

Coursework 2

Monday, 6 October 2008

Deadline: 13 October 08, 12:00

Collaborating in small groups of up to three students is permitted, but you must implement your own programs (absolutely *do not* copy and paste from others) and provide your own answers where appropriate.

The exercise has to be submitted using the departmental coursework submission system, see

<http://support.cs.nott.ac.uk/coursework/cwstud/>.

Multiple submission before the deadline are allowed, only the last one will be taken into account.

1. Complete the following table, i.e. calculate the values of a, b, c, d, e, f . Do this exercise by hand on a piece of paper - do not use a computer or calculator!

Decimal	Binary	Hexadecimal
101	a	b
c	101	d
e	f	101

Create a text file, with lines of the form $a = \dots$ etc and call it `ex2p1.txt`

2. Write a program in MIPS assembly language which reads in 4 integers a, b, c, d , calculates $(a + c) - (b + d)$ and outputs the result. How many registers do you need to use?

Test your program with the input $a = 1, b = 2, c = 3, d = 4$ using the SPIM simulator. Submit the source code of your program — call it: `ex2p2.asm`

3. Write a program in MIPS assembly language which reads two integers a, b , calculates $a^3 + 3ab^2 + 3a^2b + b^3$ and outputs the result. Try to use as few steps as possible.

Test your program with the input $a = 1, b = 2$ using the SPIM simulator. Submit the source code of your program — call it: `ex2p3.asm`