

Coursework 1

Monday, 29 September 2008

Deadline: signed off in the labs 30/9 or 1/10.

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.

This exercise will be signed off in the lab (either Tuesday 30/9, 10-12 or Wednesday 1/10, 11-13) by one of the demonstrators. There is no alternative form of submission!

For future exercises we will use the departmental coursework submission system.

1. This first exercise is just a warm-up with SPIM. Refer to the lecture slides for more pointers and information.

Your initial task is to modify the ‘Hello World’ program below to instead print ‘Hello, *first-name surname*’, but inserting your own name.

```
.data
hello: .asciiz "Hello World!\n"

.text
.globl main
main:
    la $a0, hello
    li $v0, 4 # print_string
    syscall

    li $v0, 10 # exit
    syscall
```

Make sure the program loads successfully into SPIM and produces the expected output on the console.

Locate in the data segment (third panel down in the PCSpim window) the first letter of your *surname*. Your main task is to work out the address of this letter, and note this down as a comment in the source file.

You may find an ASCII table (from the lecture slides) helpful for this task.

2. Modify the previous program so that your program will first read your name from the input and then outputs *Hello* followed by the name it has read.

Hint: The following program reads a string (no longer than 100 characters) into a buffer and then prints this string.

```
.data
buf:  .space 100
.text
main: la $a0,buf
      li $a1,100
      li $v0,8
      syscall          # read string
      la $a0,buf
      li $v0,4         # print_string
      syscall
      li $v0, 10       # exit
      syscall
```