

Lab 04

September 27, 2017

We will be starting our section on assembly language programming on Friday. Our textbook has selected MIPS due largely to its simplicity. Also, feel free to peruse the [MIPS Quick Tutorial](#) from UIC.

Install SPIM

SPIM is the MIPS simulator. You can download the appropriate installer [here](#). After installing it, run [helloworld.s](#) in the SPIM simulator. Modify it from saying, “Hello World” to “Hello CSCI-2500.”

MIPS translation

Re-write the snippet below in MIPS using `$t0` as the location holding `x`. Print out the result for initial values of `$t0` of 2, 4, 6, and 8. (It may be helpful to look at [this page](#) for help on printing out values.) This may require the `slt` (set on less than) and `beq` (branch equal) instructions and their counterparts. You can read more about MIPS control-flow instructions [here](#). You may also find the [instruction reference](#) from the front of your book useful.

```
if (x < 5) {  
    x += 5;  
}
```

Loops in MIPS

Now we will implement GCD in MIPS. Look at the [second implementation](#) (the one that uses subtraction and not `mod`). Using that algorithm and the information within the links above, try and implement GCD using subtraction. You can hard-code the two values using `li` (load immediate) instructions before the routine begins. Make sure you use positive values smaller than 32,768. Print out the resulting GCD of the two values you entered.