

CS 232 – Computer Architecture I
Rose-Hulman Institute of Technology
Computer Science and Software Engineering Department

Lab 3 Questions

Answer the following questions as completely as possible and hand in before leaving the lab.

1. Using the procedure handout, how many times is `fact` called?
2. Using the procedure handout, draw the state of the stack on the attached sheet when the instruction at address `0x0040008C` is executed the first time.
3. What would happen if the line at `L1` of `fact` was omitted.
4. `main` in `fib.asm` uses `$s0` to store n and `$t0` to store $\text{fib}(n)$. Why was a t register chosen in one case and an s register in the other?
5. `fib` in `fib.asm` uses s registers to store both n and $\text{fib}(n)$. Could t registers be used? Which would you choose?
6. While calculating $\text{fib}(5)$, how many times is `fib` called?
7. While calculating $\text{fib}(10)$, draw the state of the stack on the attached sheet when the instruction `move $s1, $v0` is executed for the first time.
8. Remove the line at `skip` and run the program. What happened?

