# TCSS372 – Computer Architecture Project A – MIPS Simulator using Java Programming

### 50 Points

Submit a zip file of containing your java files, README, test files on Canvas. Name it **uwnetid1uwnetid2Simulator.zip** or **uwnetidSimulator.zip**. Your names must be in the header of each java file that you created including a brief description of the purpose of the class.

### **Simulator Instructions**

The simulator should implement the no pipelined MIPS 32-bit ISA to provide the execution of the following instructions. It must process instructions at machine code (or binary) level.

R-format:

1. ADD
2. AND
3. JR

I-format:

1. ADDI
2. ANDI
3. LW
4. SW
5. BEQ

J-format:

1. J

You must use Instruction memory that can hold up to 200 instructions and Data memory that can hold up to 500 pieces of data. There must be 32 registers similar to MIPS with the designation that it uses for each corresponding register. You must distinguish between the different types of registers and different types of instructions (R, I, J).   
  
Program must allow you to use a file (provide files with submission if you do) or use an array of machine code instructions (provide test files) that contains the combinations of the instructions above to solve it correctly. Mars simulator has an option to generate binary code file that you can use as test code.

**Deliverables**:

1. The code should be object-oriented and JUnit tests (JUNIT 4 framework PLEASE) for each Java file written are a must!
2. The user interface of the simulator can be console-based or GUI based
3. A README file with decisions taken to implement the project should be in the zip file.
4. Test code or test files must be provided that you used to test the code.