

Lab s1 2023.

For this lab, you will be writing a functional simulator of a subset of MIPS.  
Please see the lab handout for details.

**/\* Files \*/**

1. "src/" subdirectory

- The shell: "shell.h", "shell.c" (DO NOT MODIFY)
- The simulator skeleton: "sim.c" (MODIFY)

2. "inputs/" subdirectory

- Test inputs for the simulator (MIPS assembly code): "\*.s"
- MIPS assembler/hexdump (assembly code -> machine code -> hexdump): "asm2hex"

**/\* Instructions \*/**

1. Modify "sim.c" to implement the MIPS instruction set specified in the lab handout. Run "make" to compile the simulator.

```
$ cd src/
```

```
$ make
```

You should now have an executable file named "sim".

2. Use "asm2hex" to convert the test inputs ("\*.s") into hexdumps of assembled machine code (\*.x).

```
$ cd inputs/
```

```
$ ./asm2hex addiu.s
```

You should now have a hexdump of the assembled machine code "addiu.x". Repeat this step for the rest of the test inputs.

3. Run the hexdump in the simulator.

```
$ src/sim inputs/addiu.x
```

```
MIPS Simulator
```

```
Read 7 words from program into memory.
```

```
MIPS-SIM> go
```

```
Simulating...
```

Right now, the simulator will become unresponsive because it has not been implemented yet (that is your job!). Press Control+C to exit the simulator.