Processor Architecture

Since this is a starting project, the processor consists of just one component which is contained within the simulator class.

- Fetch
- Decode
- Execute

Those are the three main parts. It also has variables to save the program counter and the number of cycles throughout the execution.

Architectural features

Right now the processor doesn’t have any outstanding architectural features, just the basics.

- Fetch: takes an instruction (class) and sets the current instruction (variable in the simulator)
- Decode: Looks at the opcode of an instructions and calls the function that executes it.
- Execute: Right now it just adds 1 to the cycles, later it will have more work. The execution starts after the decoder calls the function.

Experiment 1

For the first experiment, a simple program that sums over a loop was created. The program can be found in the tests folder, under the name sum.txt.

The program tests the processor capacity to sum and to branch in different parts of the code.

Experiment 2

For the second experiment, a simple program that multiplies over a loop was created. The program can be found in the tests folder, under the name multiply.txt.

The program tests the processor capacity to multiply and to branch in different parts of the code also to test the correctness of the understanding of what the user wants to do.