```
1   //Aaron Hong (ahong02)
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3   //3/29/23
4   //EE469 Lab1
5
6   //This module tests the ALU module against a given set of test vectors.
7
8   module alu_testbench();
9      logic [103:0] testvectors [1000:0];
10     logic [31:0] a, b, Result;
11     logic [3:0] ALUFlags;
12     logic [1:0] ALUControl;
13     logic clk;
14
15     alu dut (.a(a), .b(b), .ALUControl(ALUControl), .Result(Result), .ALUFlags(ALUFlags));
16
17     parameter CLOCK_PERIOD = 100;
18
19     //clock setup
20     initial clk = 1;
21     always begin
22        #(CLOCK_PERIOD/2);
23        clk = ~clk;
24     end
25
26     initial begin
27        $readmemh("alu.tv", testvectors);
28
29        for(int i = 0; i < 20; i = i + 1) begin
30           {ALUControl, a, b, Result, ALUFlags} = testvectors[i]; @(posedge clk);
31        end //end simulation
32
33     end //initial
34
35  endmodule
36
```