

*Note: No Final Report Submitted since we did a demo
Group Members: Ayushi Sharma, Lucy Hu, Nathan Nakamura

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All hardware (Verilog) modules:

All these files are included in a subfolder within the submission folder. The sub-folder's name is:

- basic_proc

Testbench:

This is included in the submission folder with the following name: FinalSubmission_tb.sv

Assembly Code (Program 1):

This is included in the submission folder with the following name: program_one_assembly.txt

Assembly Code (Program 2):

This is included in the submission folder with the following name: program_two_assembly.txt

Assembly Code (Program 3):

This is included in the submission folder with the following name: program_three_assembly.txt

Machine Code (Program 1):

This is included in the submission folder with the following name:
program_one_machine_code.txt

Machine Code (Program 2):

This is included in the submission folder with the following name:
program_two_machine_code.txt

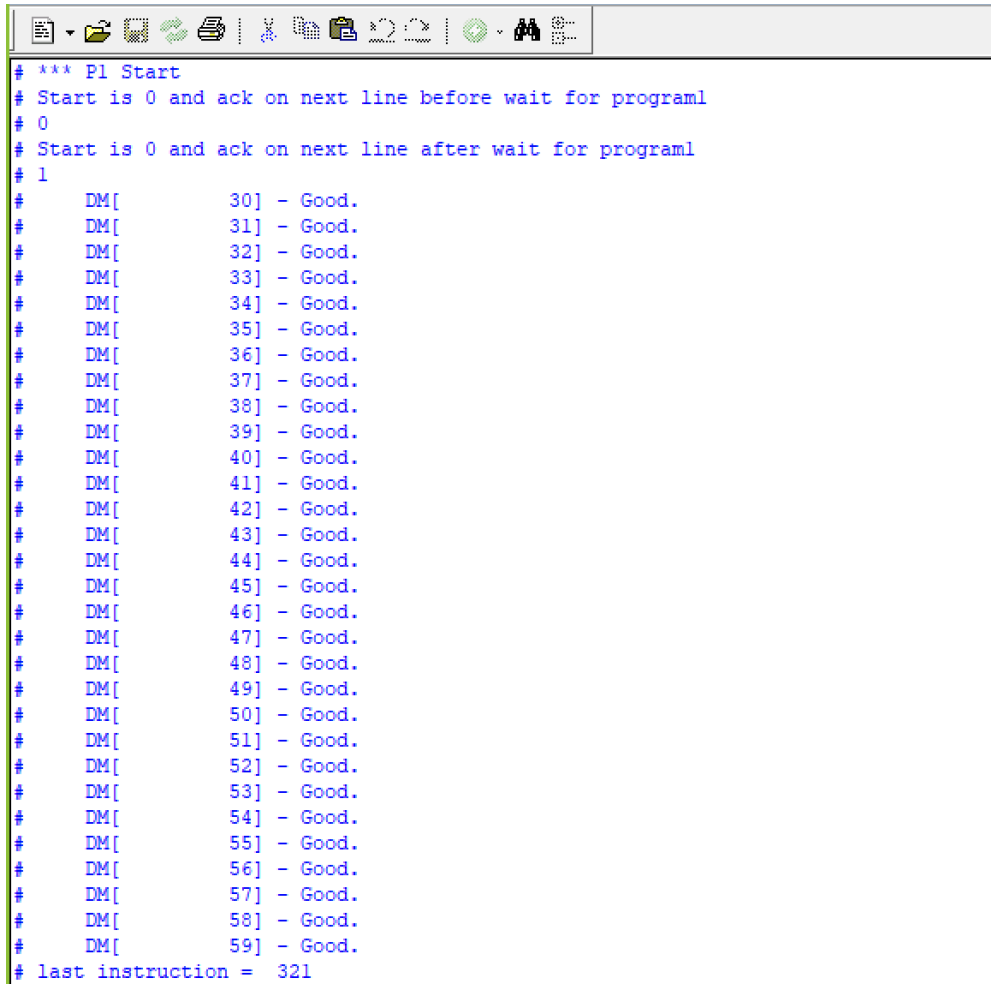
Machine Code (Program 3):

This is included in the submission folder with the following name:
program_three_machine_code.txt

Assembler (python, or other high-level language file):

This is included in the submission folder with the following name: assembler.py

A screenshot or printout of your testbench output:



```
# *** P1 Start
# Start is 0 and ack on next line before wait for program1
# 0
# Start is 0 and ack on next line after wait for program1
# 1
#     DM[      30] - Good.
#     DM[      31] - Good.
#     DM[      32] - Good.
#     DM[      33] - Good.
#     DM[      34] - Good.
#     DM[      35] - Good.
#     DM[      36] - Good.
#     DM[      37] - Good.
#     DM[      38] - Good.
#     DM[      39] - Good.
#     DM[      40] - Good.
#     DM[      41] - Good.
#     DM[      42] - Good.
#     DM[      43] - Good.
#     DM[      44] - Good.
#     DM[      45] - Good.
#     DM[      46] - Good.
#     DM[      47] - Good.
#     DM[      48] - Good.
#     DM[      49] - Good.
#     DM[      50] - Good.
#     DM[      51] - Good.
#     DM[      52] - Good.
#     DM[      53] - Good.
#     DM[      54] - Good.
#     DM[      55] - Good.
#     DM[      56] - Good.
#     DM[      57] - Good.
#     DM[      58] - Good.
#     DM[      59] - Good.
# last instruction = 321
```

```
Transcript
# *** P2 Start
# Start is 1 and ack on next line
# 1
# Start is 0 and ack on next line right before wait for program 2
# 0
# Start is 0 and ack on next line right after wait for program 2
# 1
# !!! DM[      94] - WRONG. Expected 0xfa Got 0xec
# !!! DM[      95] - WRONG. Expected 0x07 Got 0x25
# !!! DM[      96] - WRONG. Expected 0xf0 Got 0x65
# !!! DM[      97] - WRONG. Expected 0x06 Got 0xd0
# !!! DM[      98] - WRONG. Expected 0x9d Got 0x76
# !!! DM[      99] - WRONG. Expected 0x01 Got 0x15
# !!! DM[     100] - WRONG. Expected 0x57 Got 0x7b
# !!! DM[     101] - WRONG. Expected 0x06 Got 0x72
# !!! DM[     102] - WRONG. Expected 0x74 Got 0x7c
# !!! DM[     103] - WRONG. Expected 0x06 Got 0xca
# !!! DM[     104] - WRONG. Expected 0x66 Got 0xc2
# !!! DM[     105] - WRONG. Expected 0x06 Got 0x6b
# !!! DM[     106] - WRONG. Expected 0xxx Got 0x4d
# !!! DM[     107] - WRONG. Expected 0xxx Got 0x99
# !!! DM[     108] - WRONG. Expected 0xb4 Got 0xb8
# !!! DM[     109] - WRONG. Expected 0x03 Got 0x00
# !!! DM[     110] - WRONG. Expected 0x89 Got 0x9d
# !!! DM[     111] - WRONG. Expected 0x02 Got 0xe3
# !!! DM[     112] - WRONG. Expected 0xc4 Got 0xfe
# !!! DM[     113] - WRONG. Expected 0x02 Got 0x57
# !!! DM[     114] - WRONG. Expected 0x69 Got 0x4a
# !!! DM[     115] - WRONG. Expected 0x02 Got 0x0f
# !!! DM[     116] - WRONG. Expected 0x1c Got 0xbd
# !!! DM[     117] - WRONG. Expected 0x06 Got 0xdf
# !!! DM[     118] - WRONG. Expected 0xba Got 0xaf
# !!! DM[     119] - WRONG. Expected 0x06 Got 0xfa
# !!! DM[     120] - WRONG. Expected 0xd3 Got 0xa2
# !!! DM[     121] - WRONG. Expected 0x00 Got 0x39
# !!! DM[     122] - WRONG. Expected 0xb6 Got 0x95
# !!! DM[     123] - WRONG. Expected 0x04 Got 0x8d
# last instruction = 324
```

```
# last instruction = 324
# Start is 0 and ack on next line
# 1
# *** P3 Start
# Start is 0 and ack on next line
# 1
# Start is 1 at this point
# Start is 0 and ack on next line and right before program 3
# 0
# Start is 0 and ack on next line after program 3s wait
# 1
# DM[      192] - Good.
# DM[      193] - Good.
# DM[      194] - Good.
# last instruction = 473
# Start is 0 and ack on next line
# 1
```

Readme:

This is included in the submission folder with the following name: Readme.txt