**Project Report**

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CSE 140

**Delegation of Tasks:**

I decided to challenge myself and take on the project by myself. I didn’t want any assistance while working on the project to see if I could get it done on my own. That being said, the initial portion of the project was pretty straightforward.

**Code Breakdown:**

Global variables:

pc = 0 # This is the program counter which keeps track of the current instruction

next\_pc = 0 # This is the next program counter which tracks the next instruction

opcode = '0' # Stores the opcode of an instruction

rd = '0' # Stores the destination register of an instruction

rs1 = '0' # Stores the first register of an instruction

rs2 = '0' # Stores the second register of an instruction

funct3 = '0' # Stores the funct3 of an instruction

funct7 = '0' # Stores the funct7 of an instruction

imm = '0' # Stores the immediate value of an instruction

sign\_extended\_imm = '0' # Stores the sign extended immediate of a function

register1\_val = 0 # Stores the value that the first register holds

register2\_val = 0 # Stores the value that the second register holds

RegWrite = 0 # Stores the RegWrite control unit value

Branch = 0 # Stores the Branch control unit value

ALUSrc = 0 # Stores the ALUSrc control unit value

ALUOp = 0 # Stores the ALUOp control unit value

MemWrite = 0 # Stores the MemWrite control unit value

MemtoReg = 0 # Stores the MemtoReg control unit value

MemRead = 0 # Stores the MemRead control unit value

alu\_ctrl = '0' # Stores the alu\_ctrl value

rf = ['0'] \* 32

rf[1] = '0x20'

rf[2] = '0x5'

rf[10] = '0x70'

rf[11] = '0x4'

alu\_zero = 0

d\_mem = ['0'] \* 32

d\_mem[28] = '0x5' # Address: 0x70

d\_mem[29] = '0x10' # Address: 0x74

branch\_target = 0

total\_clock\_cycles = 0

new\_address = '0'

start\_index = 0

sample\_part1.txt

A screenshot of a computer program

Description automatically generated