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Project 1 Question

1. The total number of cycles for running the “test” trace is 22 times. It is just adding 1 every time it reaches the end of while loop.
2. The R-type instruction obtain from checking the opcode of the instruction. The opcode of R-type is 7 bits and the lecture has provided us the opcode such as (0110011) where it will be 51 in decimal form. Running the “instMem-t.txt” gives me 7 times of R- type instruction.
3. Getting the instruction counter and the clock cycle makes it easier to obtain IPC. First of all, I put the intruction counter in the IF(Fetching) stage. Then, I obtain the clock cycle by adding the cycle by the end of “while loop.” Lastly, we will obtain the number and do division operation. We will get 1 as the pipelining design will give us 1 CPI as well.