Carlo Quitorio

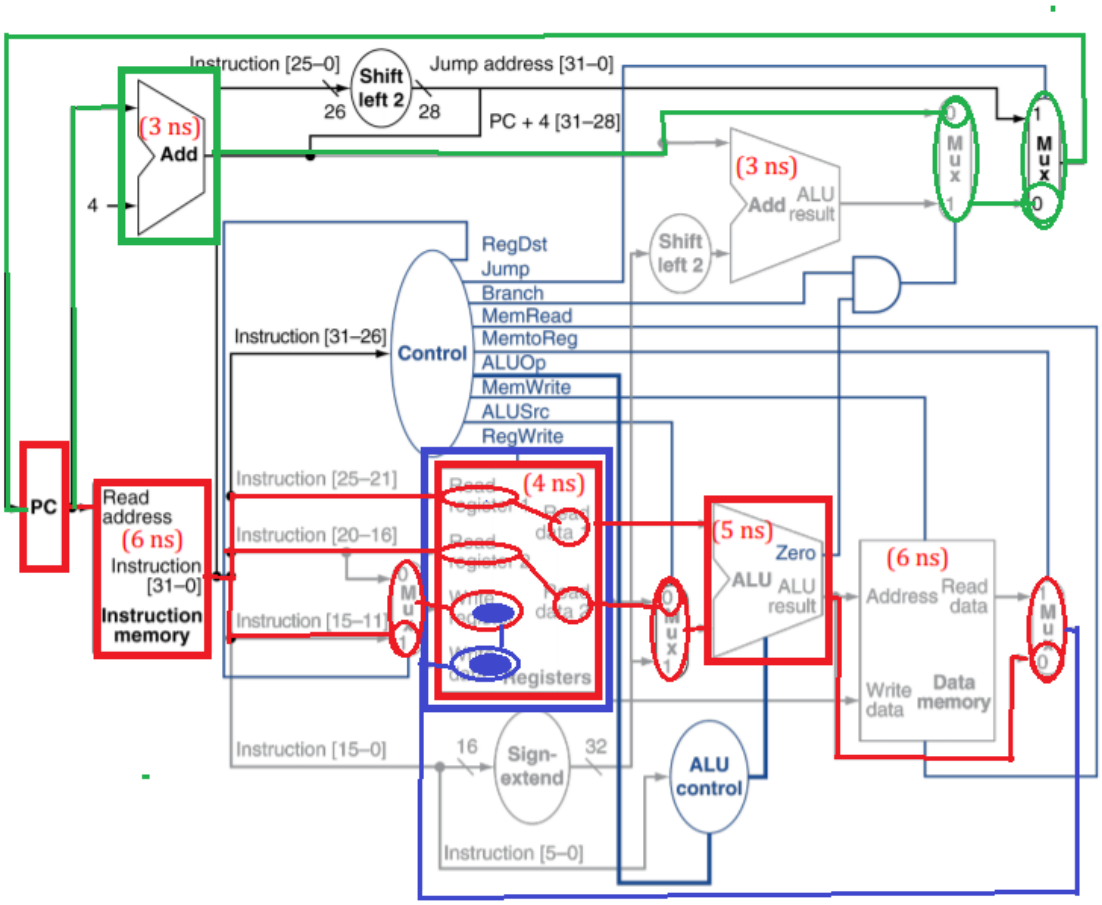
CSCI 113 Assignment 7

Number 1

a) ADD

Upper path: 3 ns

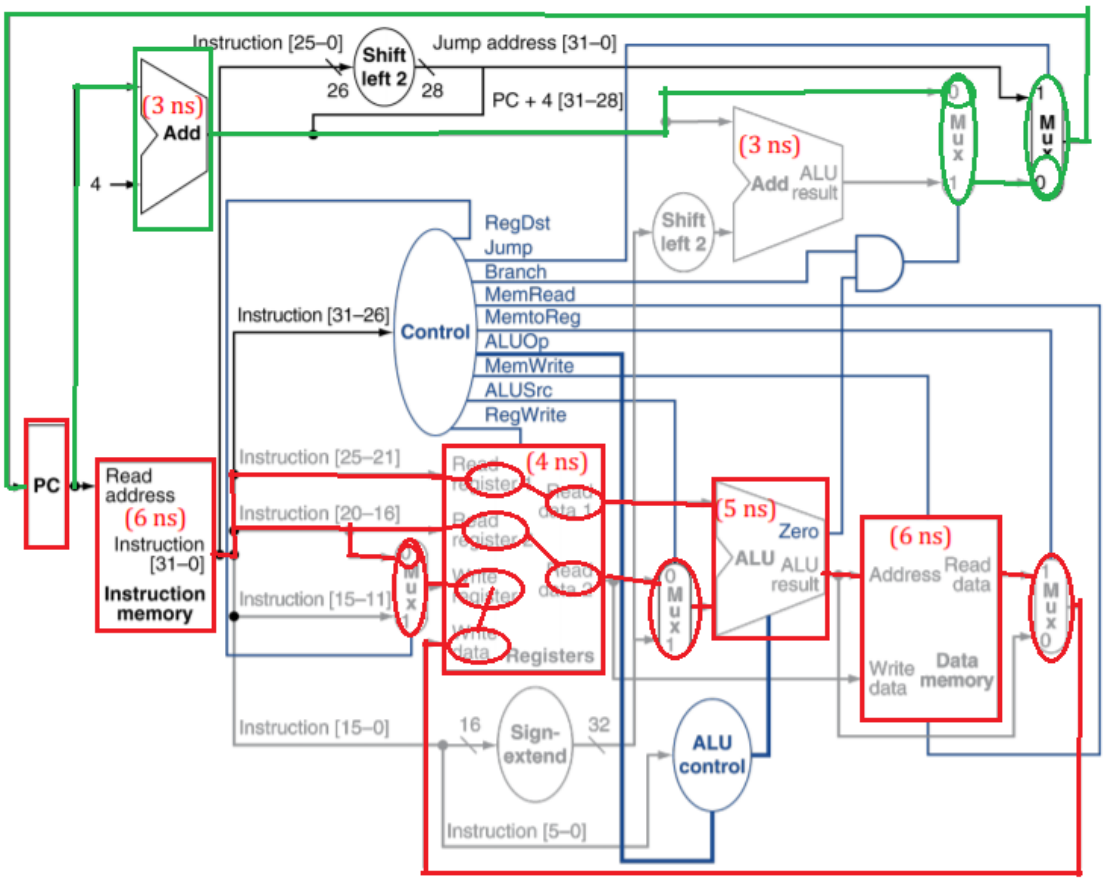
Lower path: 6 + 4 + 5 + 4 = 19 ns



b) LW

Upper path: 3 ns

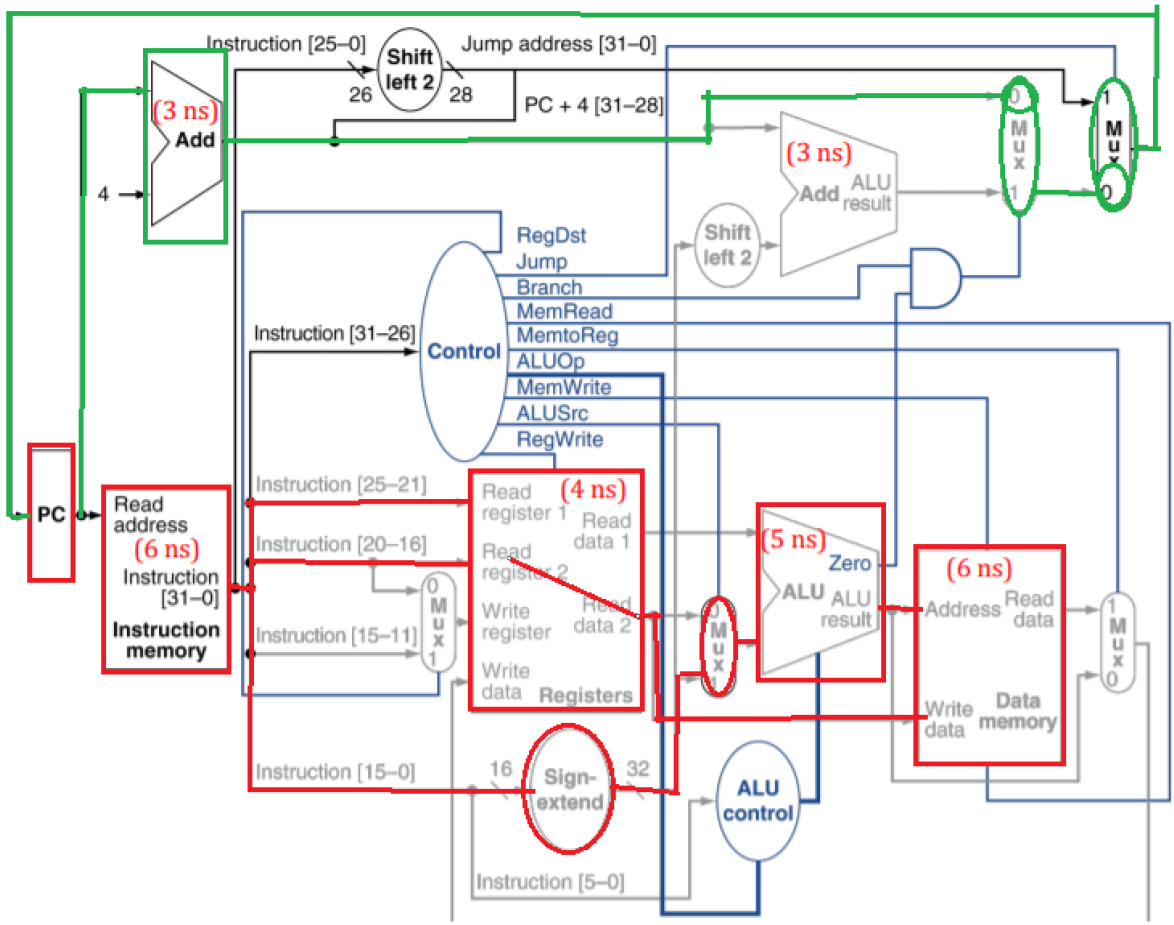
Lower path: 6 + 4 + 5 + 6 + 4 = 25 ns



c) SW

Upper path: 3 ns

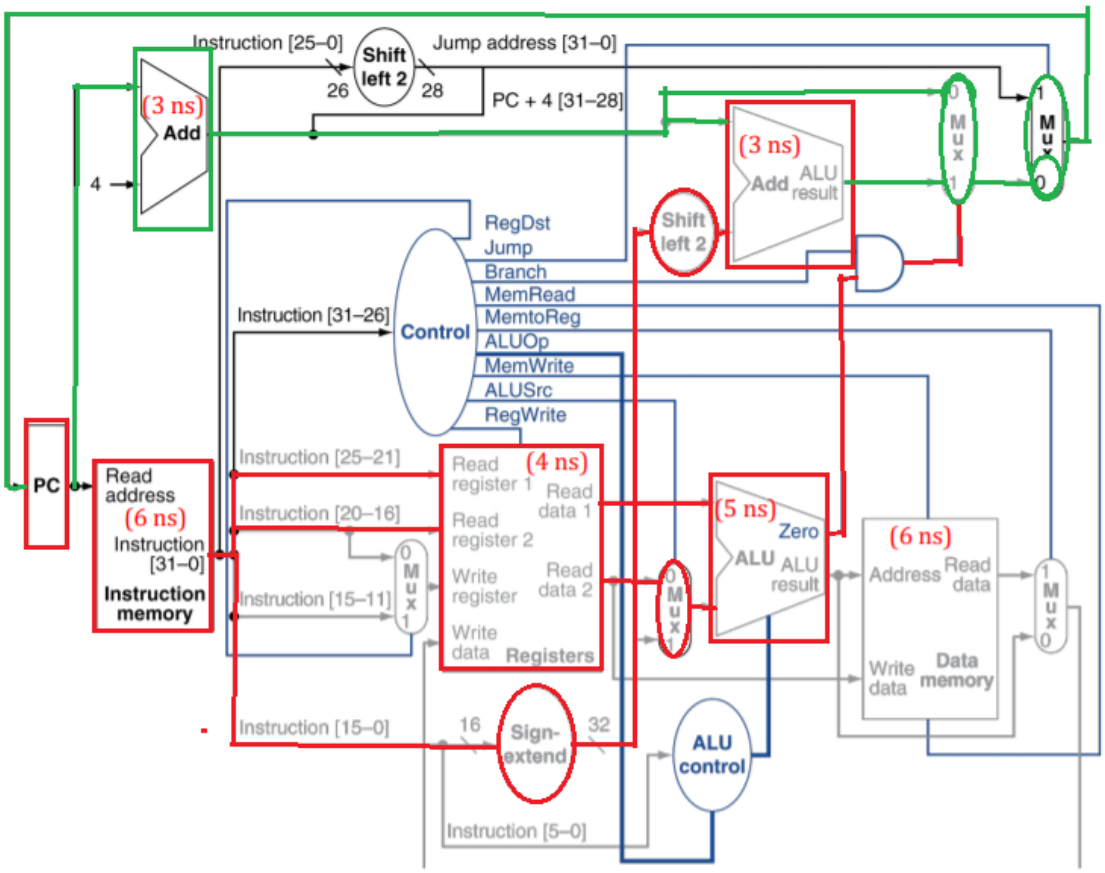
Lower path: 6 + 4 + 5 + 6 = 21 ns



d) BEQ

Upper path: 3 + 3 = 6 ns

Lower path: 6 + 4 + 5 = 14 ns



e) Jump has two possible paths one will be 3 ns and the other will be 6 ns. The longest path time is 6 ns when the address has to be read.

f) System clock cycle time is determined by the slowest operation, in this case the slowest operation is LW so the clock cycle time is 25 ns.