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CSE2120

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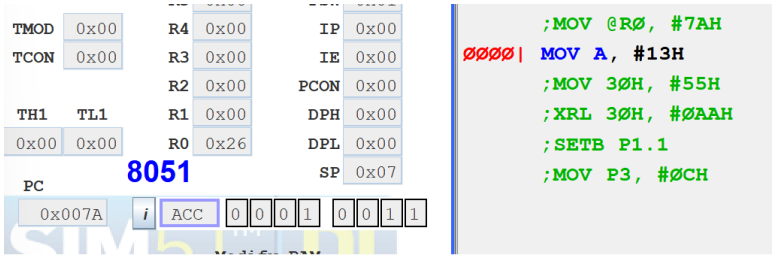
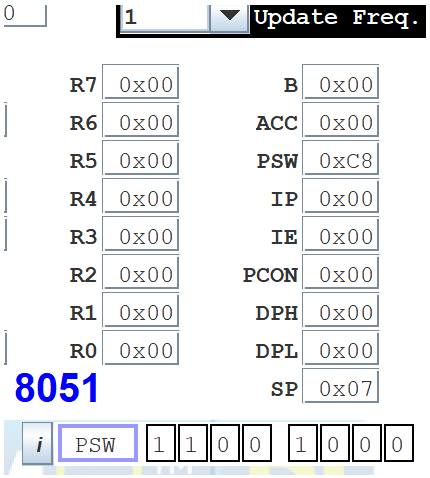
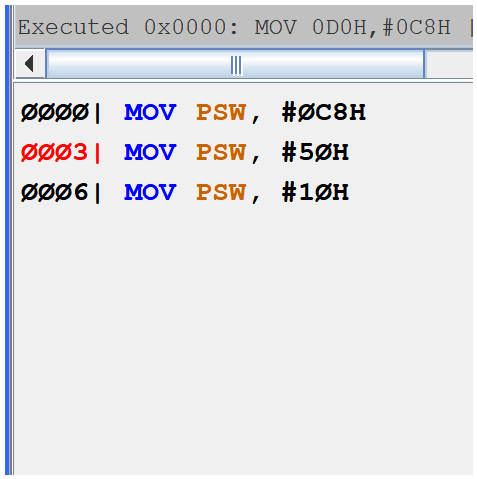
Homework 4

Chapter 2: 2.10(a,b,c,d), 2.19, 2.21, 2.28, 2.34, on pages 44-46

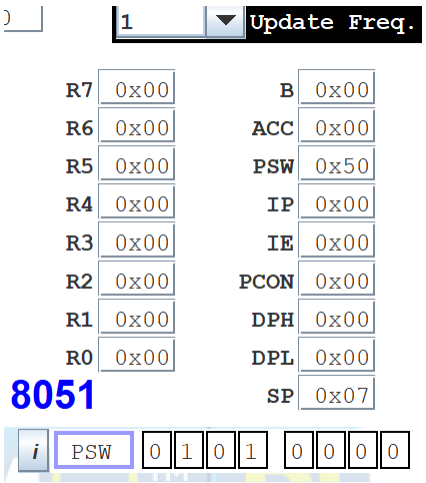
- 2.10
  - MOV 26H, #26H
    - 0
  - MOV R0, #26H
    - 0
  - MOV @R0, #7AH
    - 0
  - MOV A, #13H
    - 00010011
    - 

  - MOV 30H, #55H
    - 0
  - XRL 30H, #0AAH
    - 0
  - SETB P1.1
    - 0
  - MOV P3, #0CH
    - 0
- 2.19: What is the active register bank after execution of each of the following instructions?
  - MOV PSW, #0C8H
    - 11001000

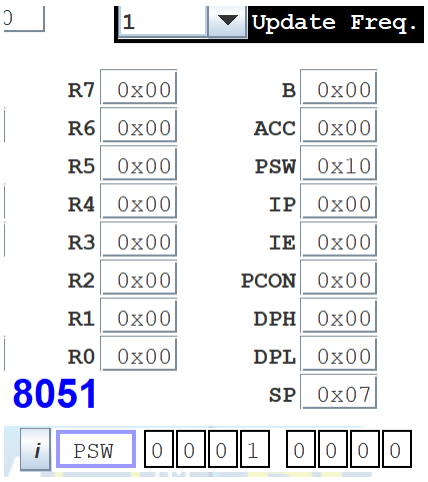


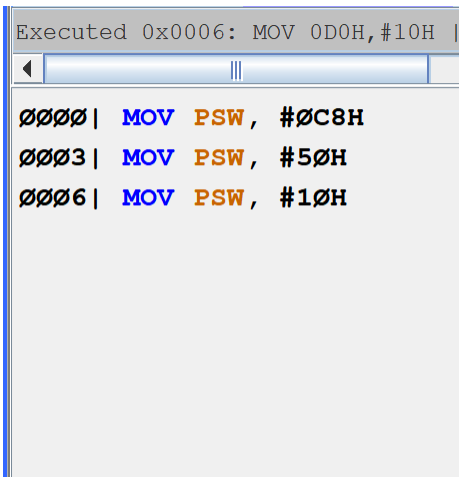


- MOV PSW, #50H
  - 0101000



- MOV PSW, #10H
  - 00010000





- 2.21: If an 8051 is operating from a 4MHz crystal, what is the duration of a machine cycle?
  - 4MHz * (1/12) → 0.33MHz → 333,333 cycles/s

    - 1s/333,333 cycles = 0.000003s → 3,000 ns → **3 microsecond**
- 2.28: What is the bit address of bit 3 in byte address 2FH in the 8051's internal data memory?
    - Remember 8 bits per byte
    - 2FH byte = 2FH*8 bits → 23H
    - + bit # = **26H**
- 2.34: what is the state of the P bit in the PSW after execution of each of the following instructions?
    - CLR A
        - Parity bit is 0
    - MOV A, #03H
        - Parity bit is 0
    - MOV A, #0ABH
        - Parity bit is 1