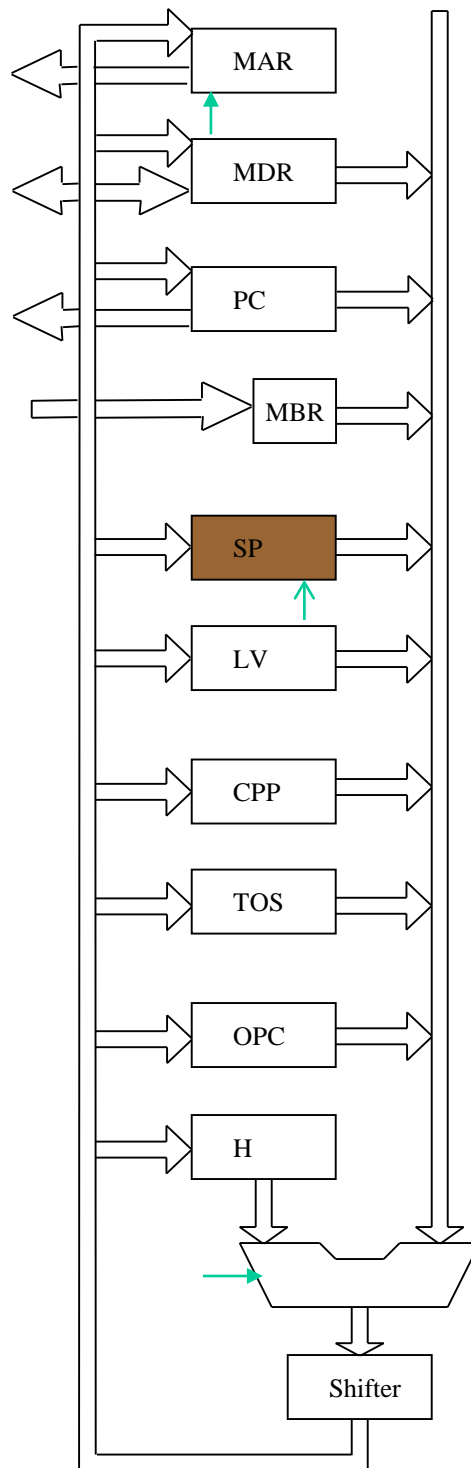
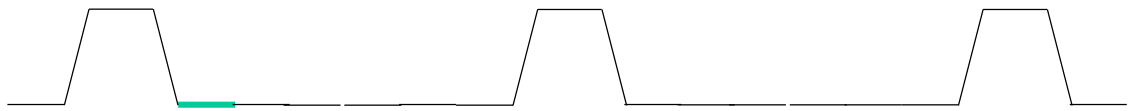
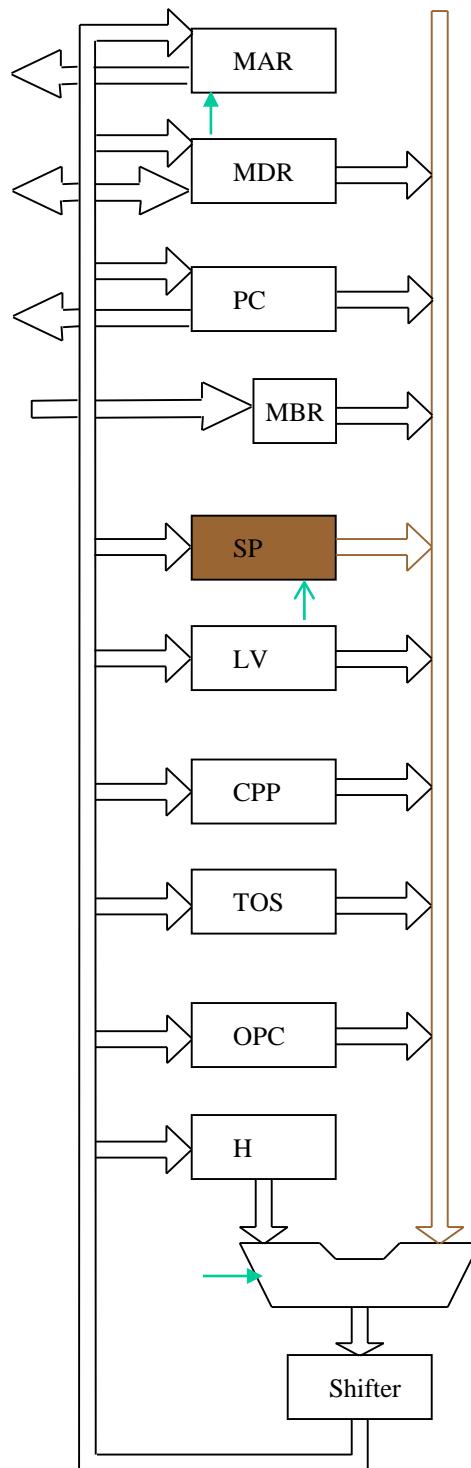
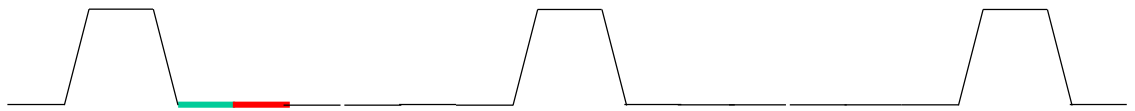


**Timing diagram for  $\text{MDR} = \text{M}[\text{[SP]} + 1]$**



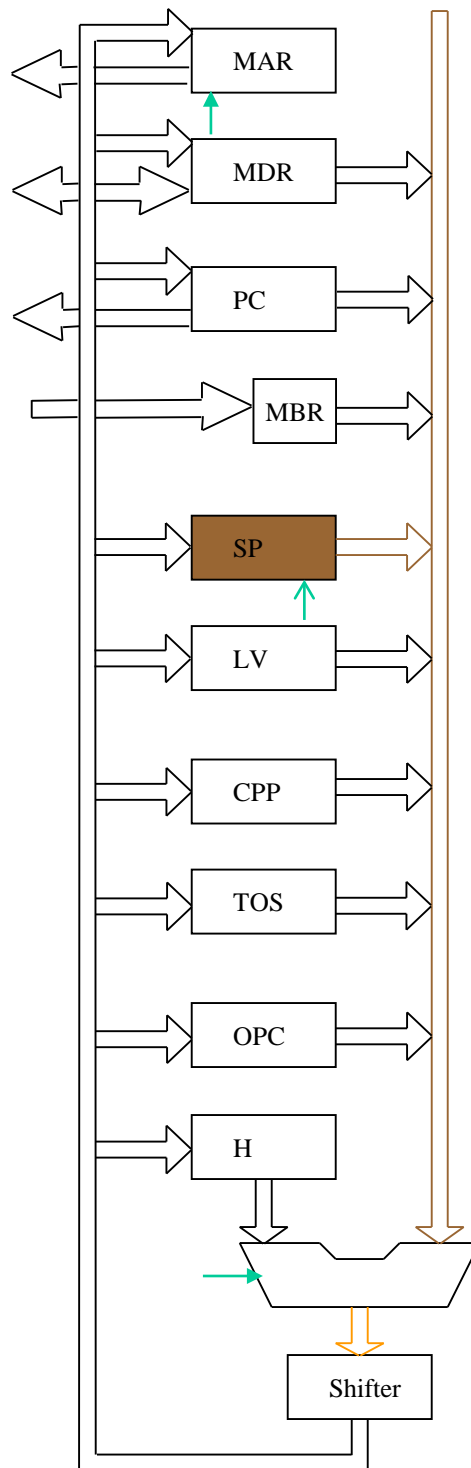
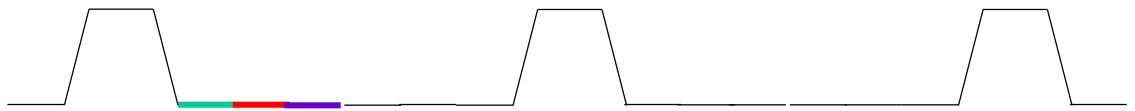
Control signals are set up

$$\mathbf{MDR = M[ [SP] + 1 ]}$$



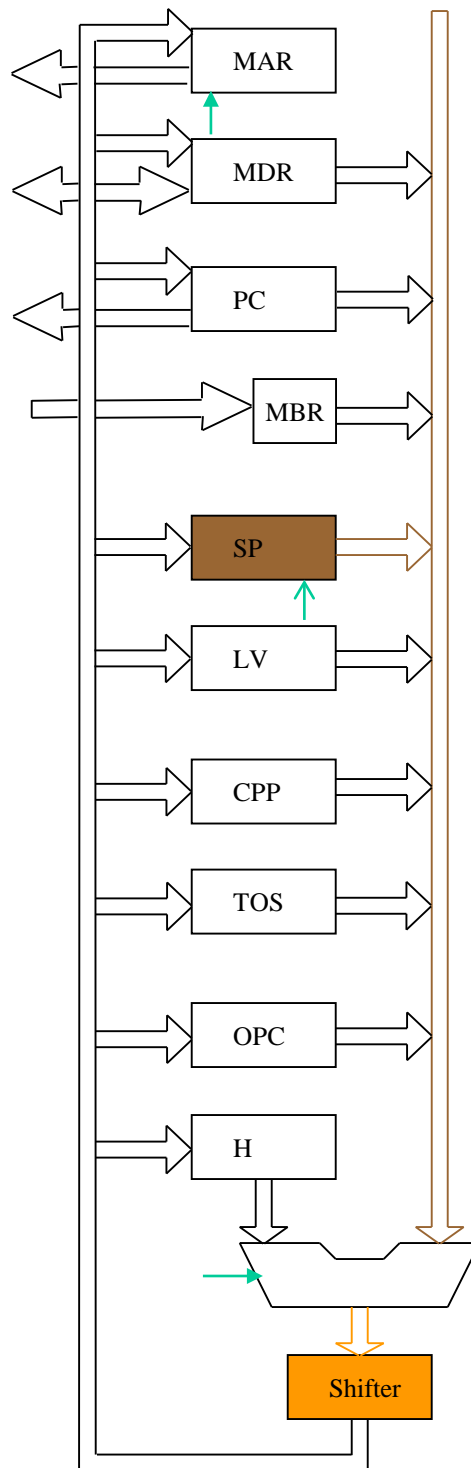
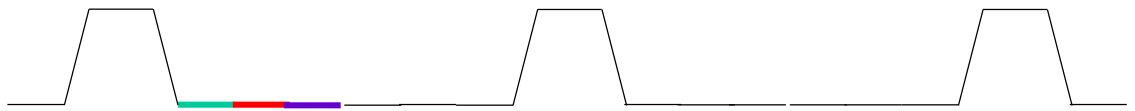
Drive B bus

$$\mathbf{MDR = M[ [SP] + 1 ]}$$



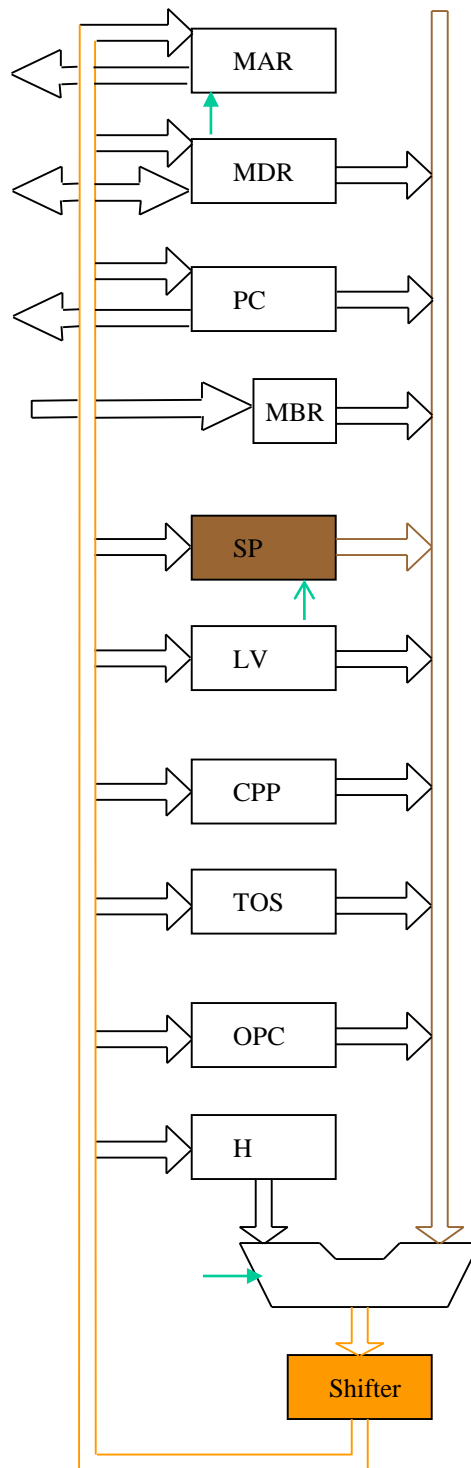
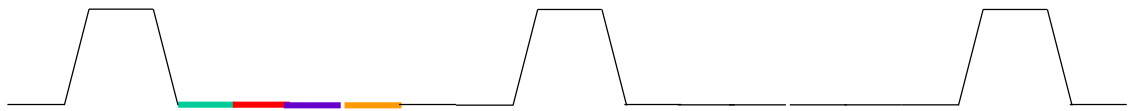
ALU

$$\mathbf{MDR = M[ [SP] + 1 ]}$$



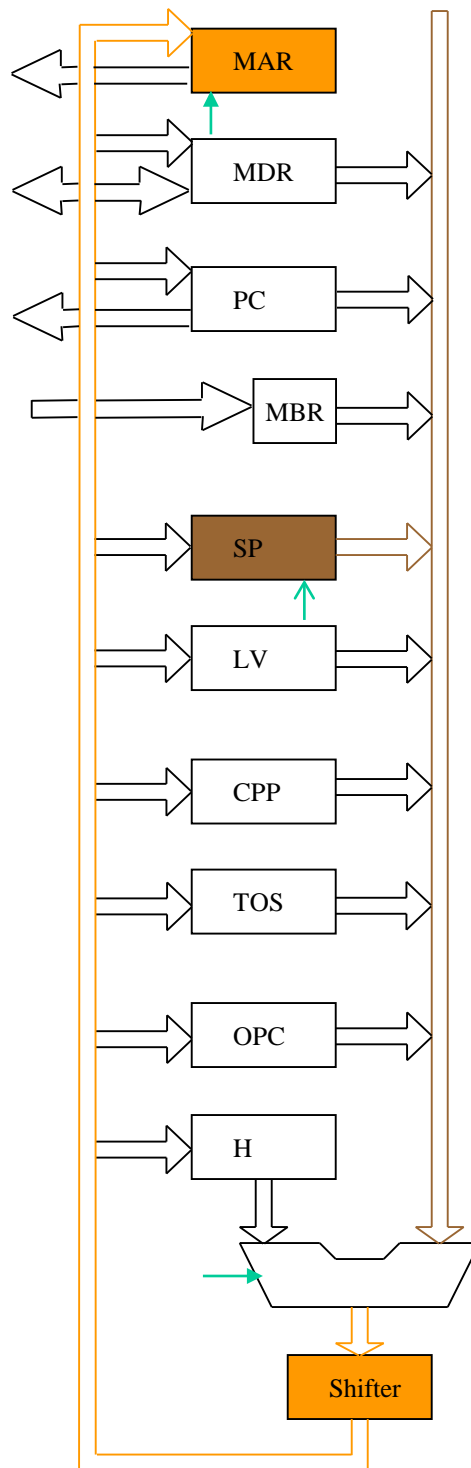
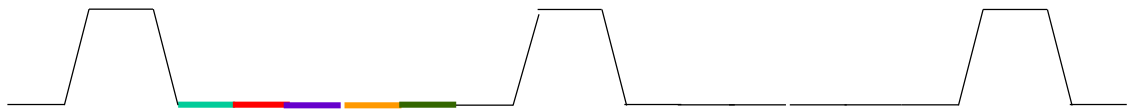
ALU and shifter

$$\mathbf{MDR = M[ [SP] + 1 ]}$$



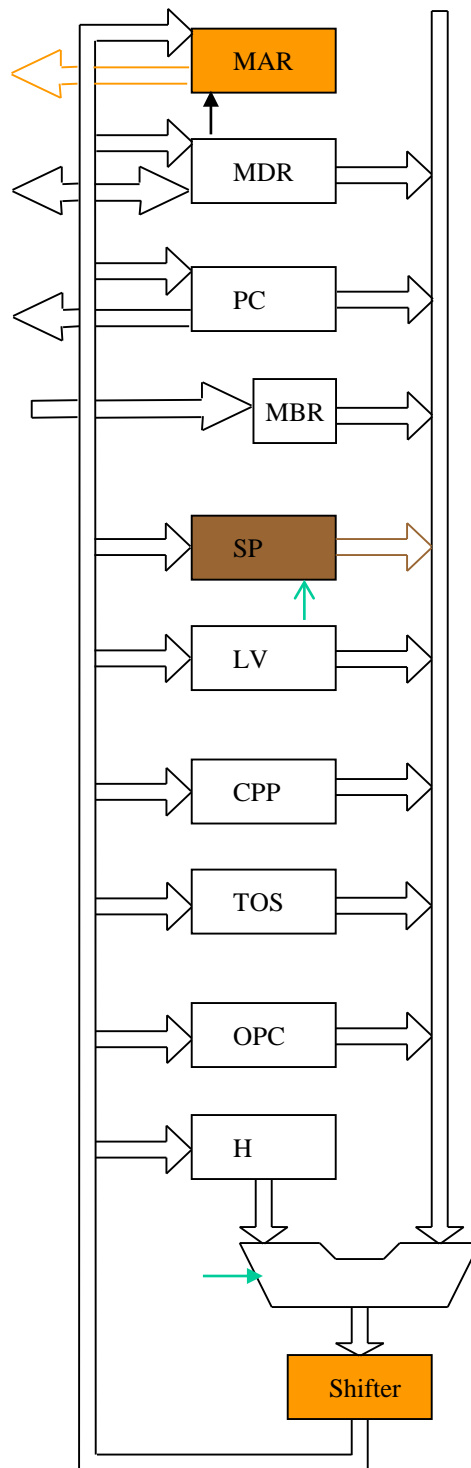
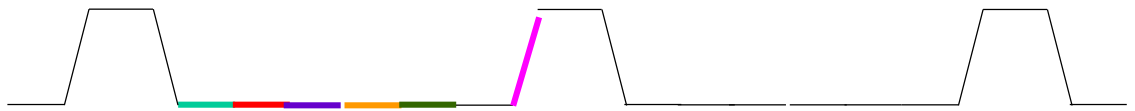
**Propagation from shifter to C bus**

$$\mathbf{MDR = M[ [SP] + 1 ]}$$



**Registers loaded from C bus**

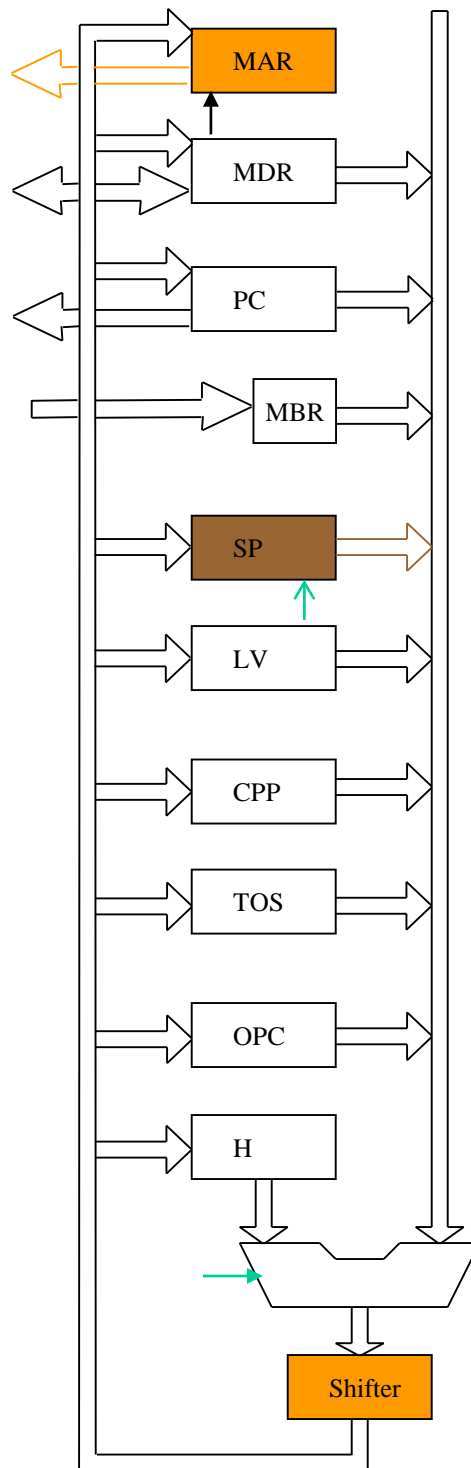
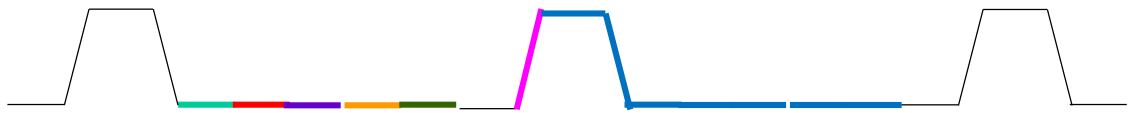
$$\mathbf{MDR = M[ [SP] + 1 ]}$$



Memory write begins

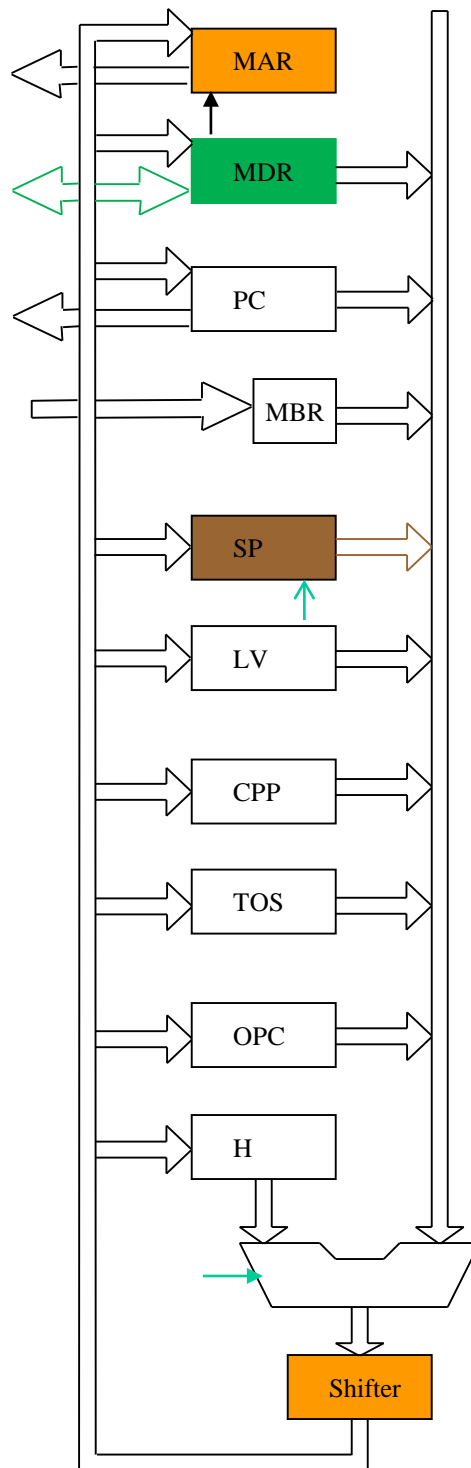
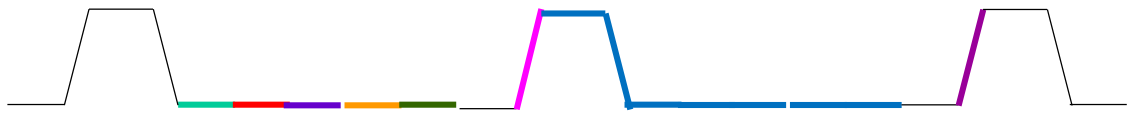
$$\text{MDR} = \text{M}[ [\text{SP}] + 1 ]$$





Waiting for memory read to complete

$$\text{MDR} = \text{M}[\text{[SP]} + 1]$$



**Value read from memory goes in MDR**

$$\mathbf{MDR = M[ [SP] + 1 ]}$$

