

Pipelined Datapath

Lesson 36

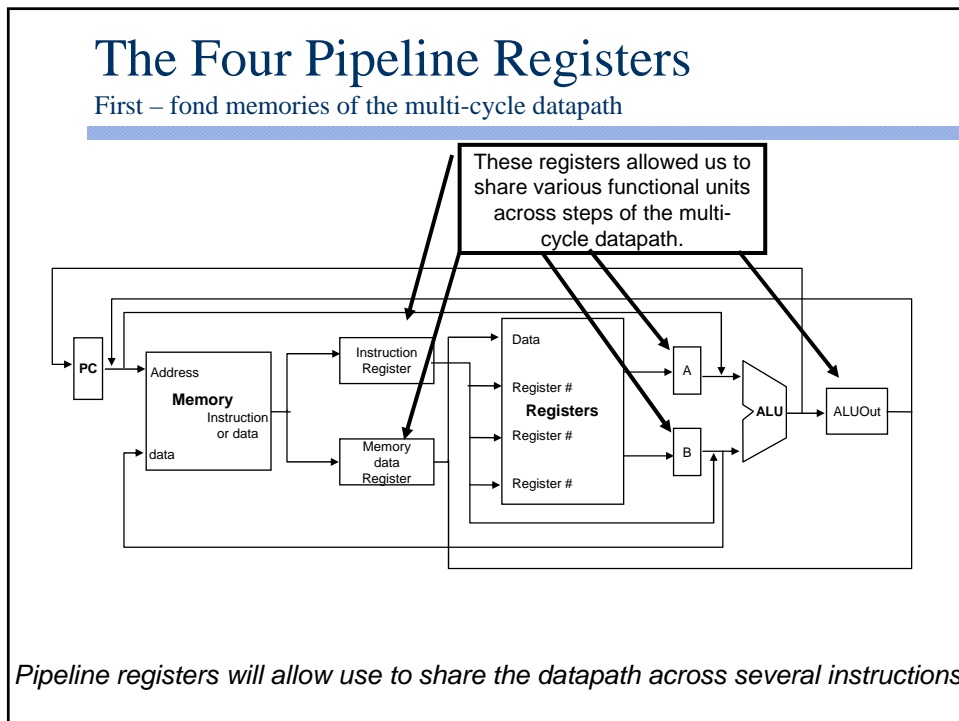
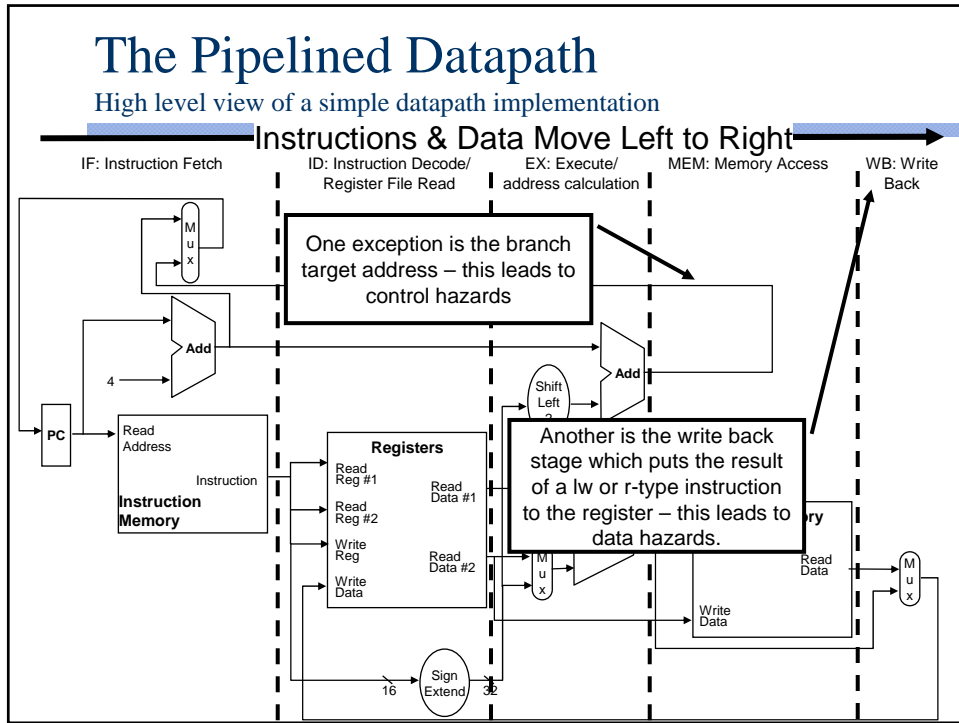
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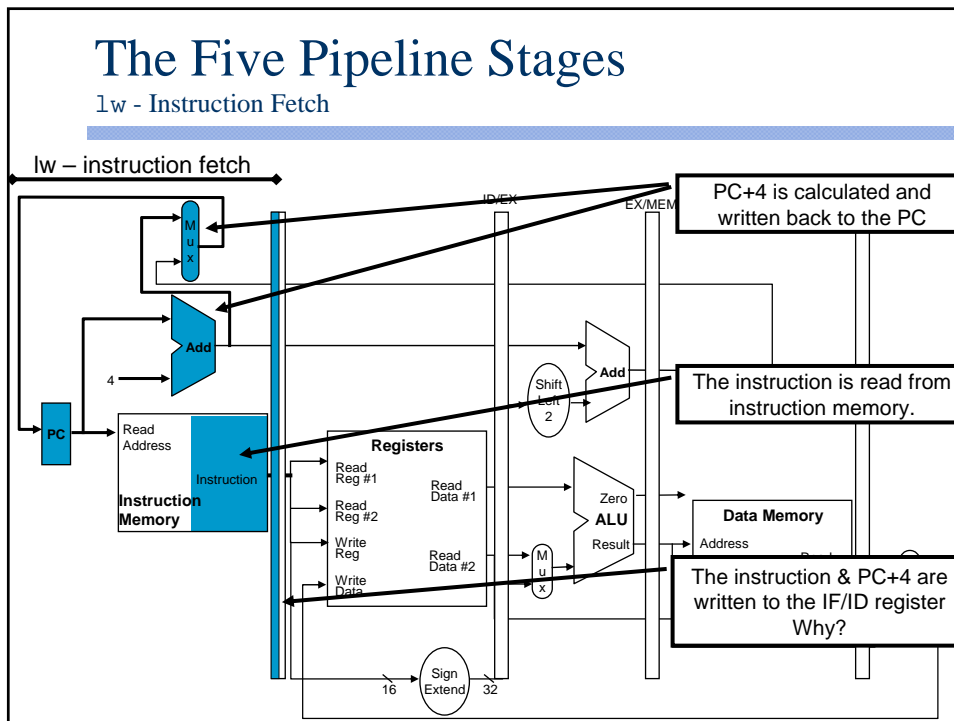
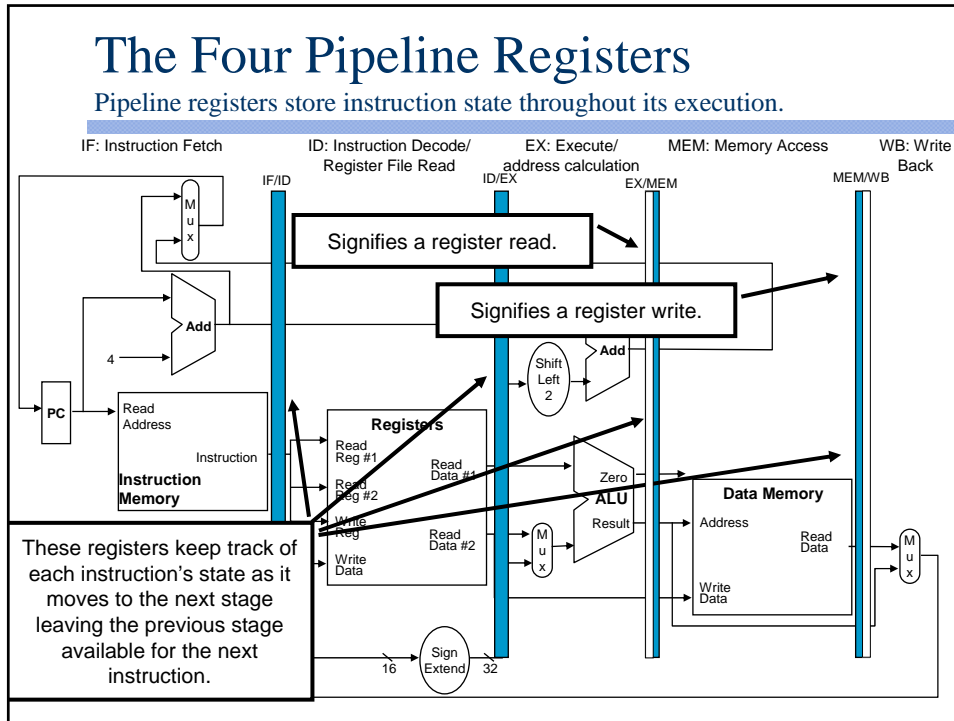
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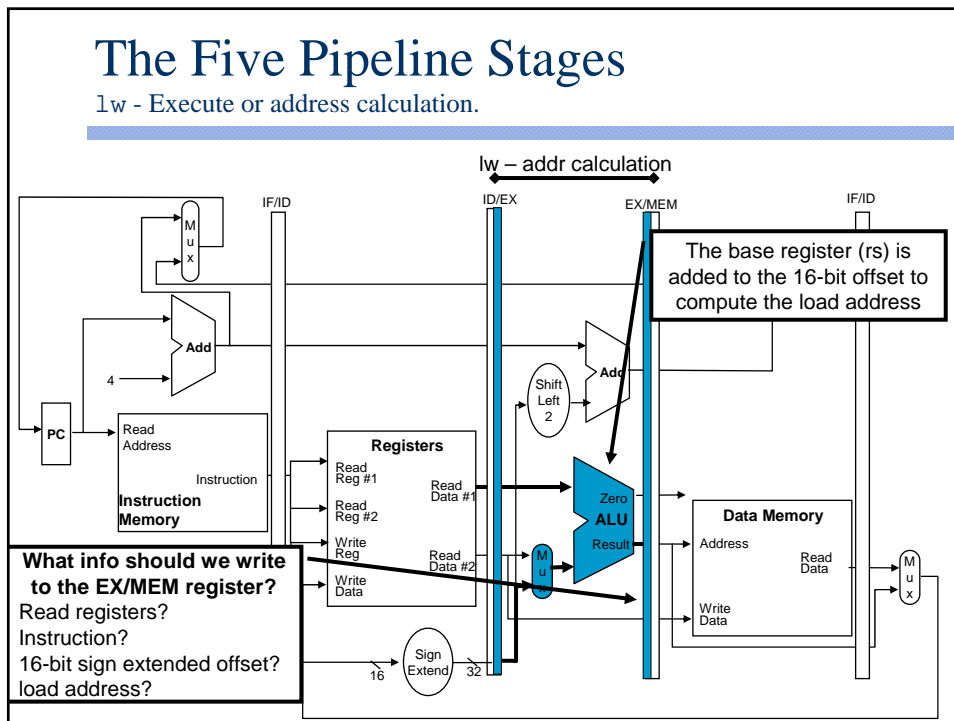
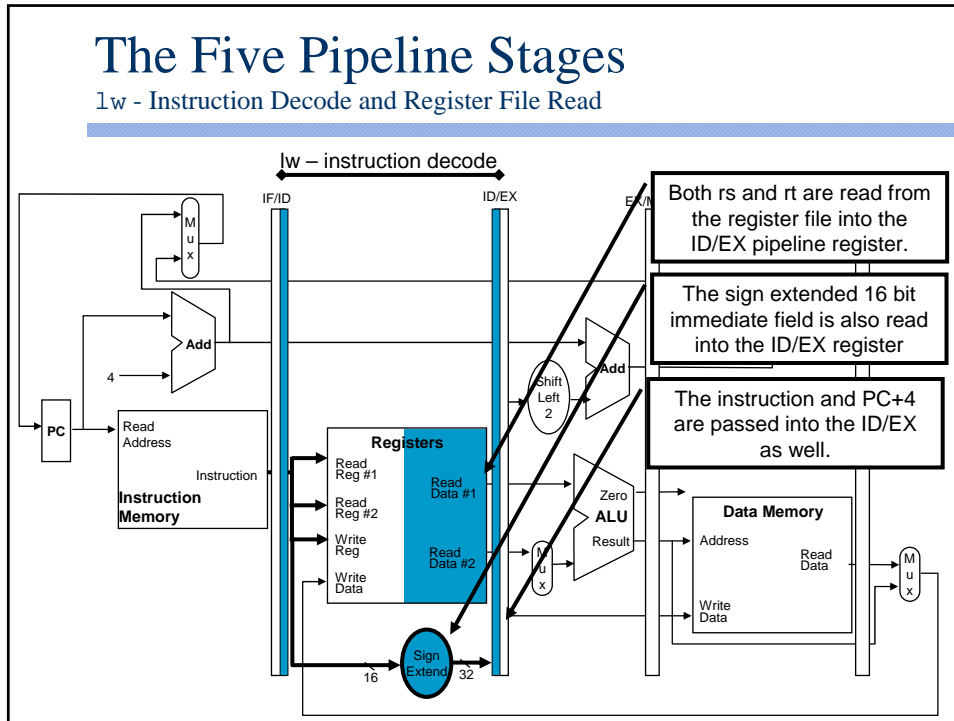
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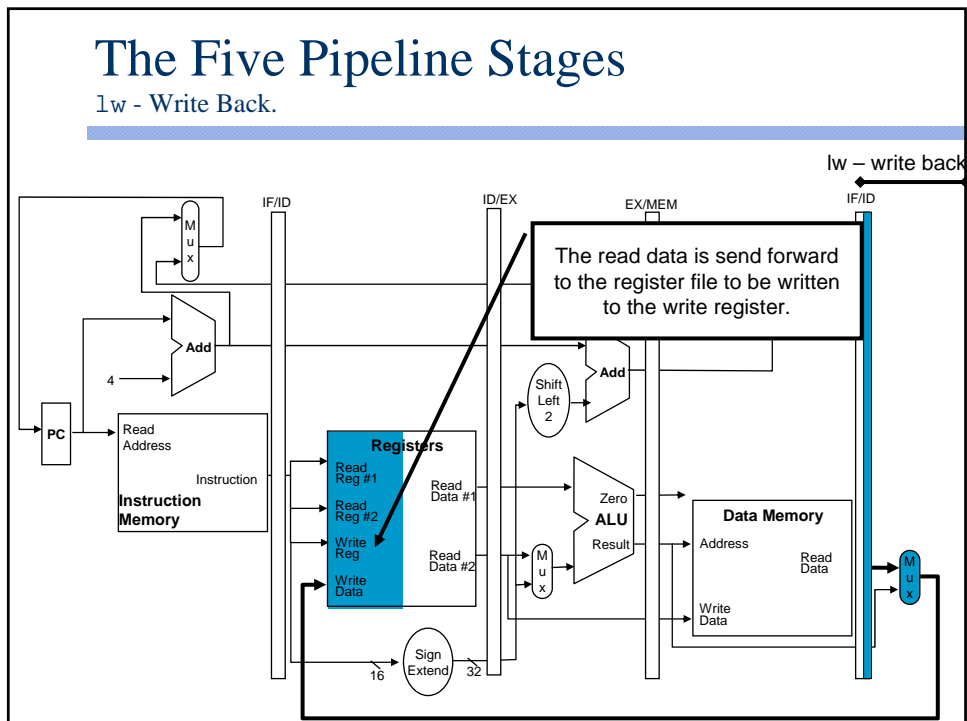
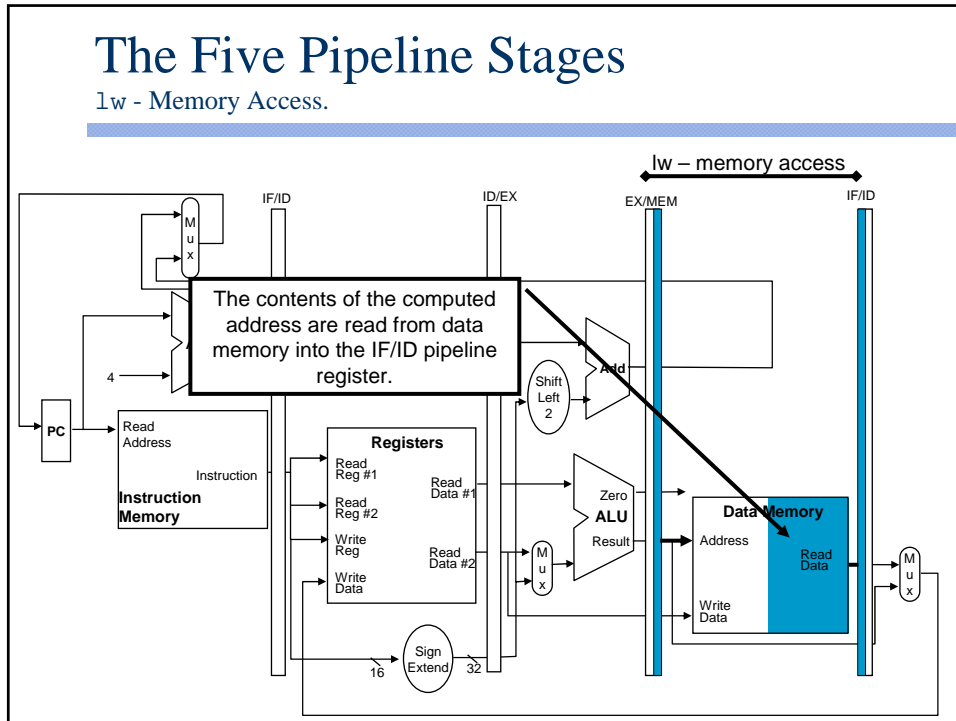
Overview

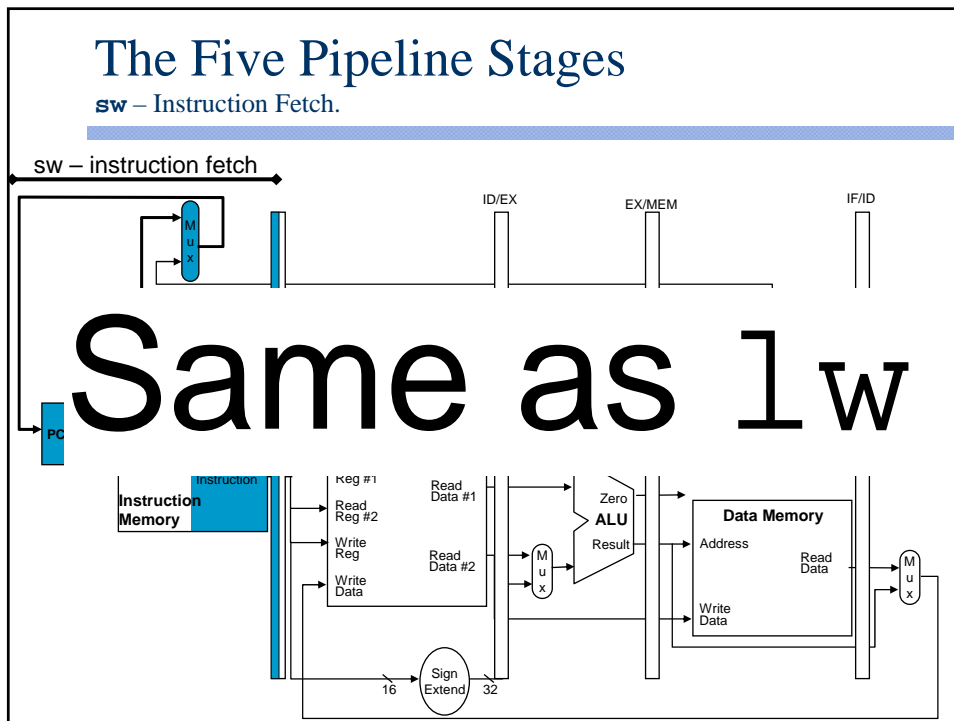
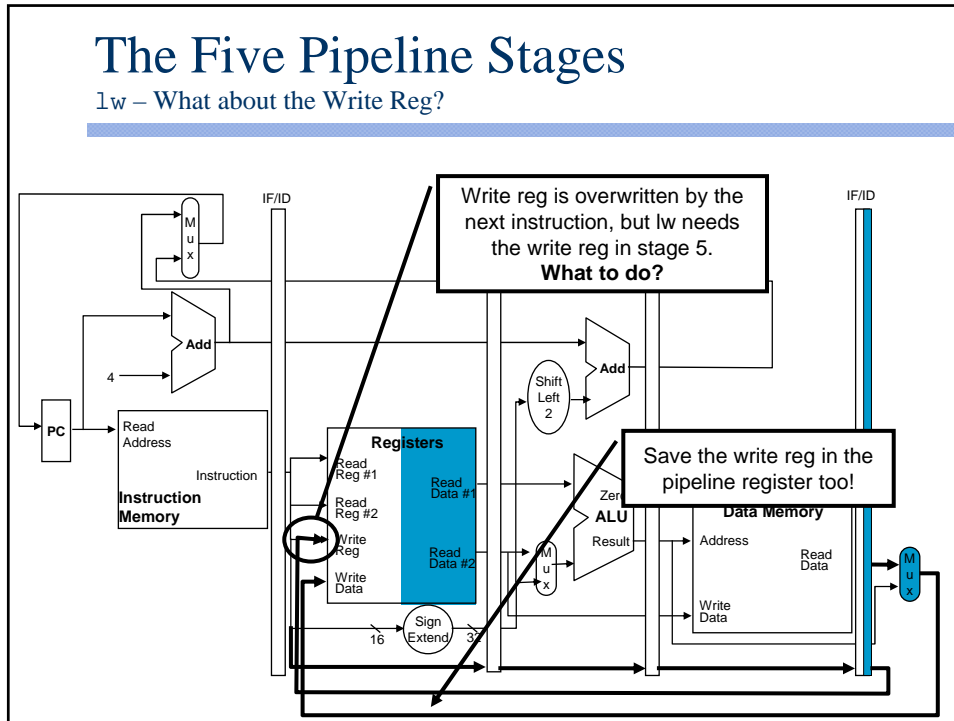
- Today we're going to...
 - Learn the purpose and inner workings of each of the five pipeline stages.
 - Describe pipeline registers
 - Trace instruction execution through all five pipeline stages.

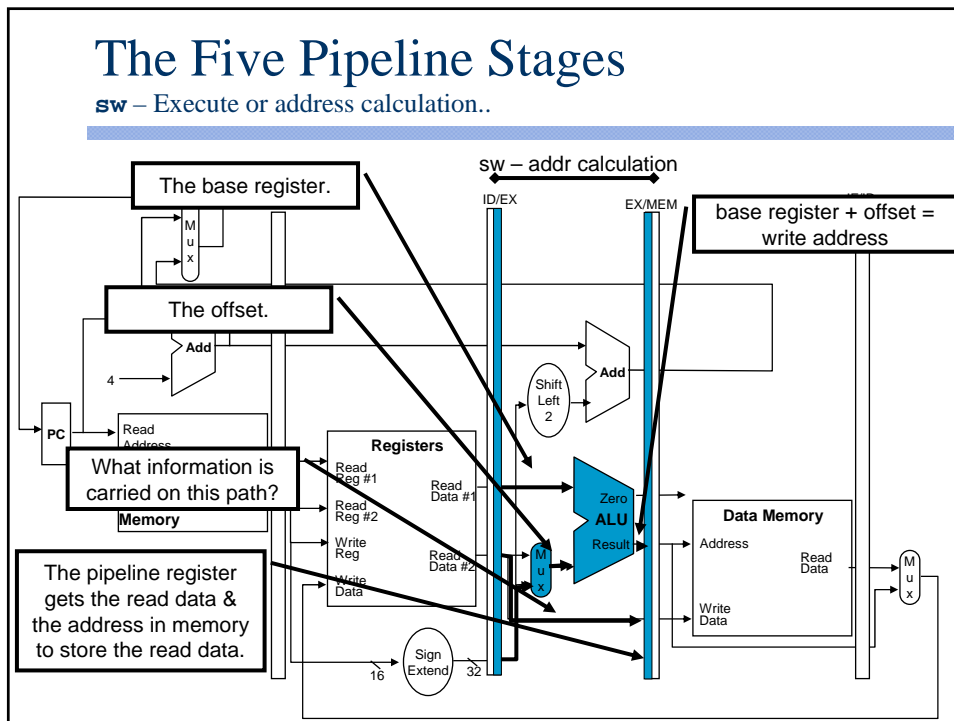
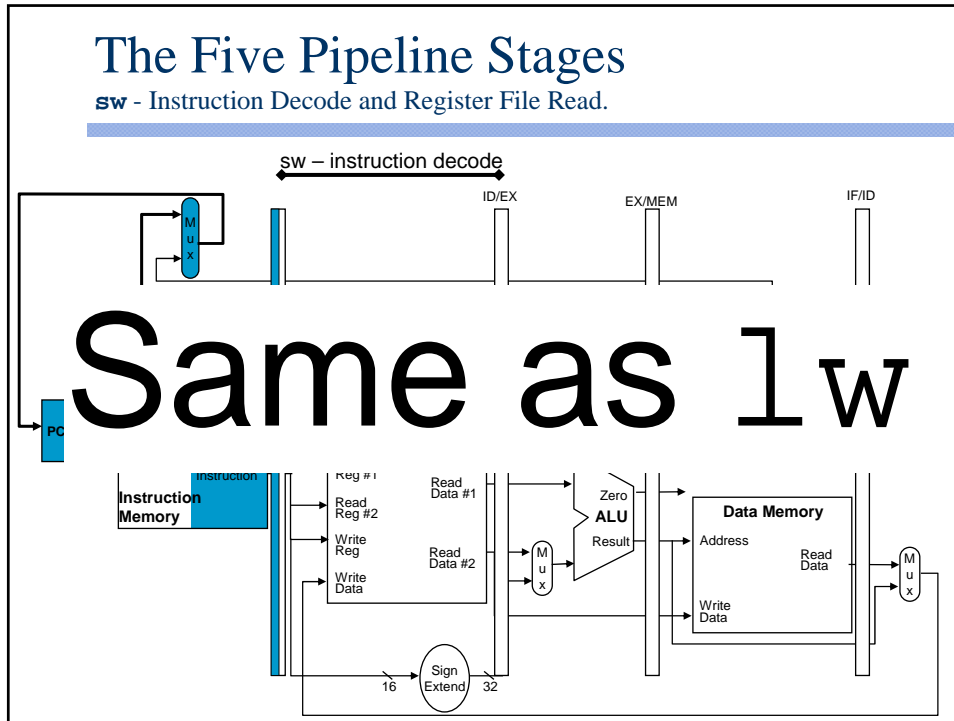


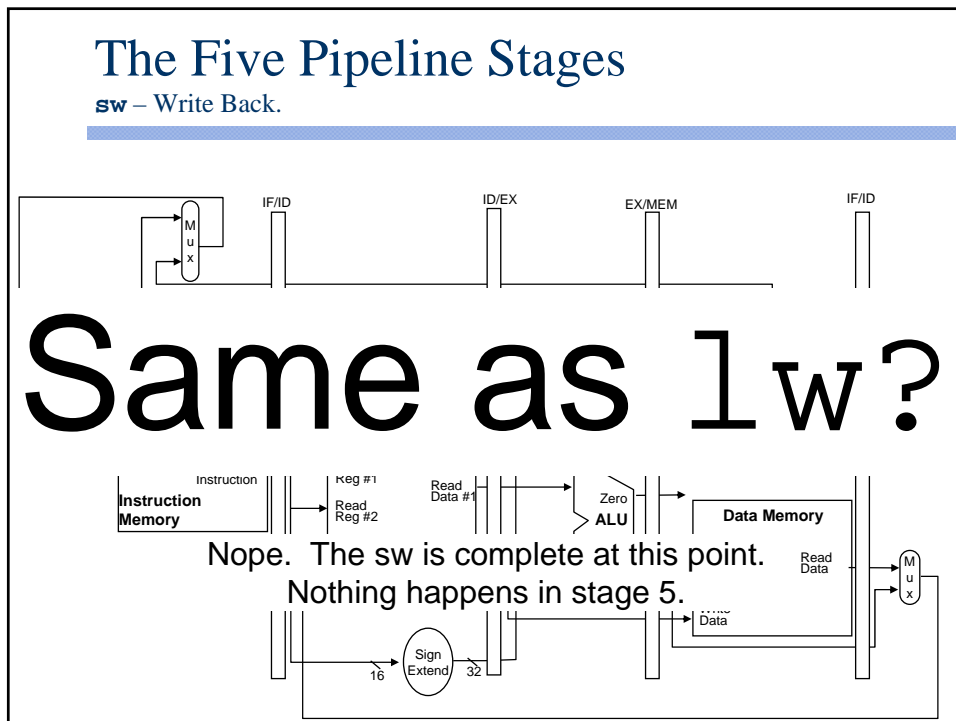
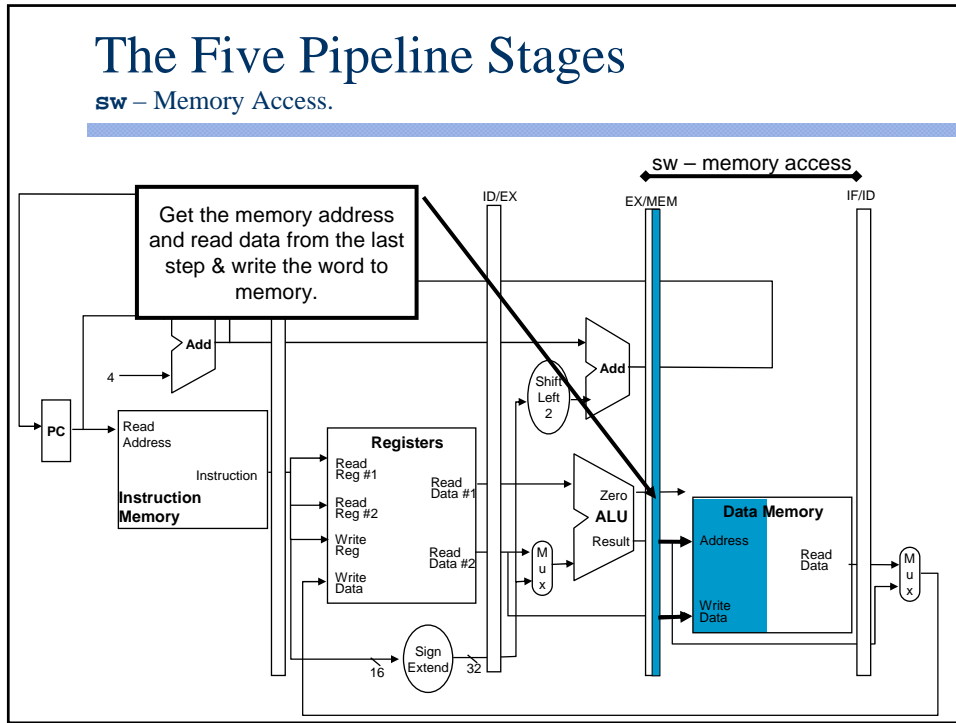












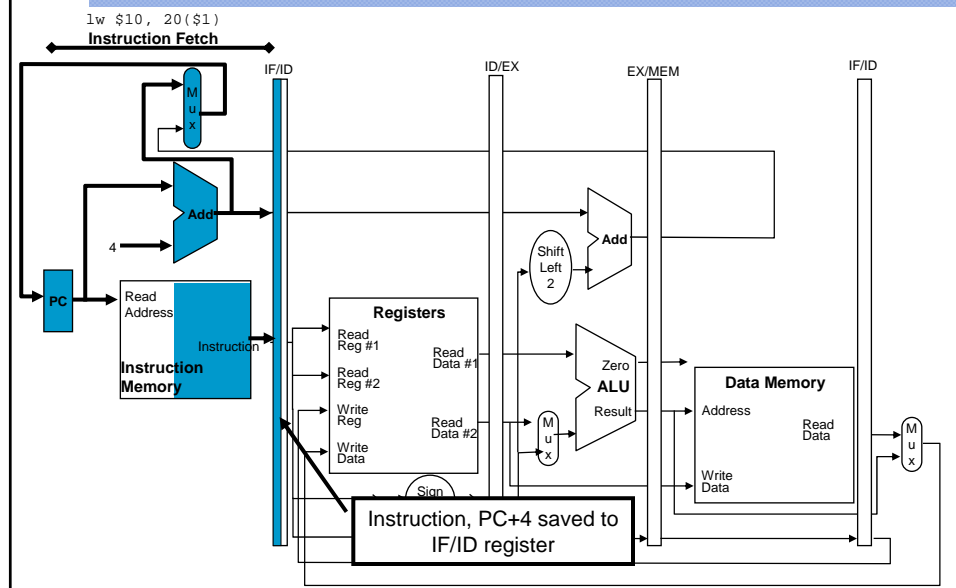
Executing Multiple Instructions

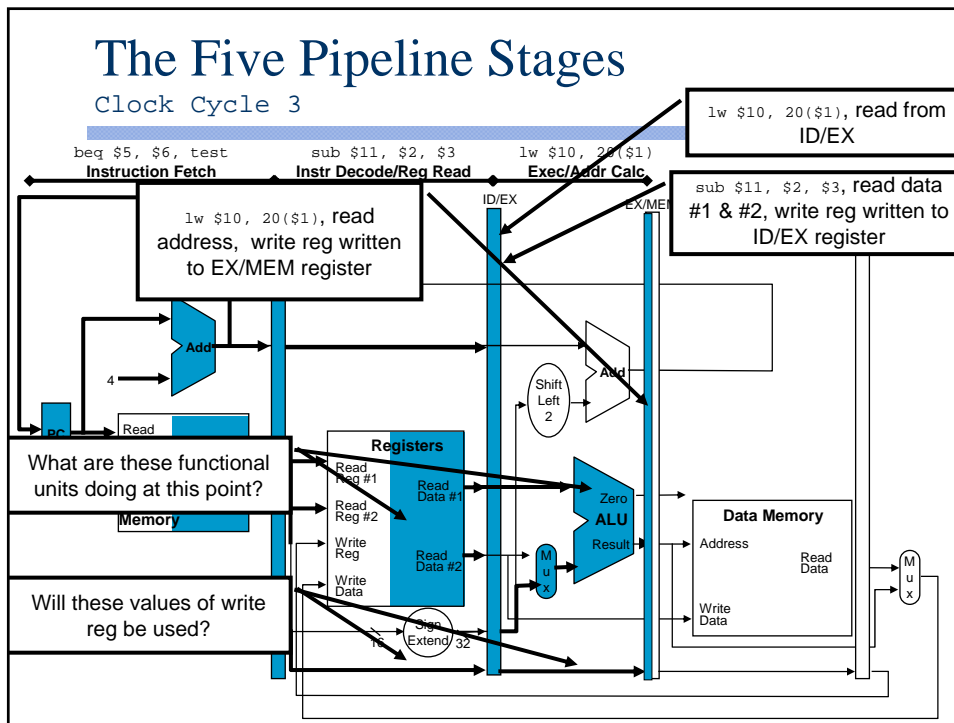
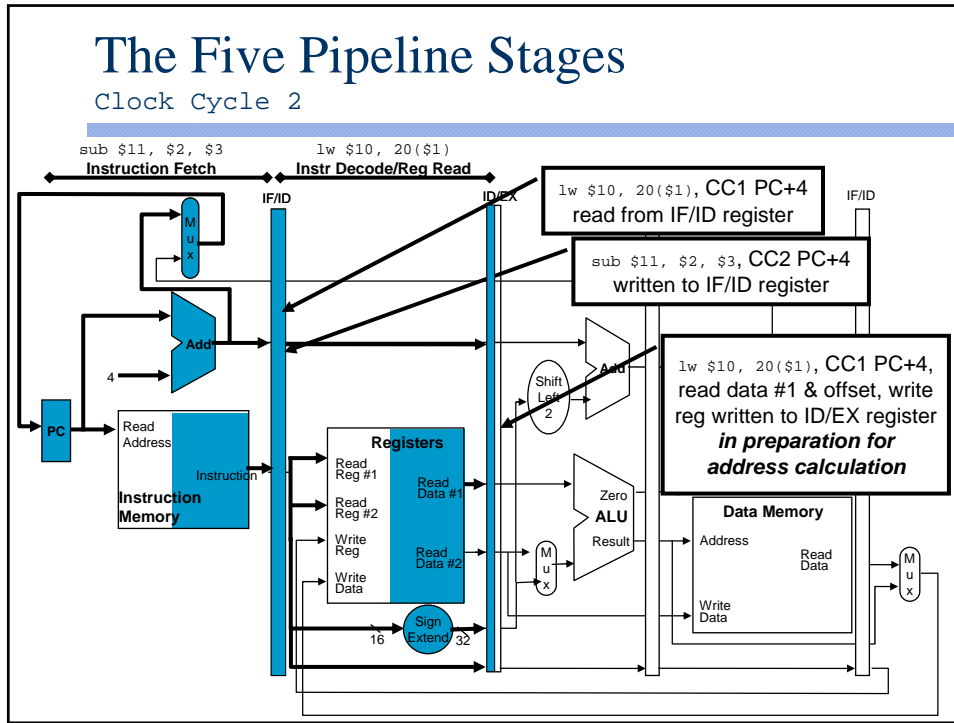
- The pipeline really executes multiple instructions at a time.
- Let's try simulating the execution of the following instruction sequence using the single cycle datapath view

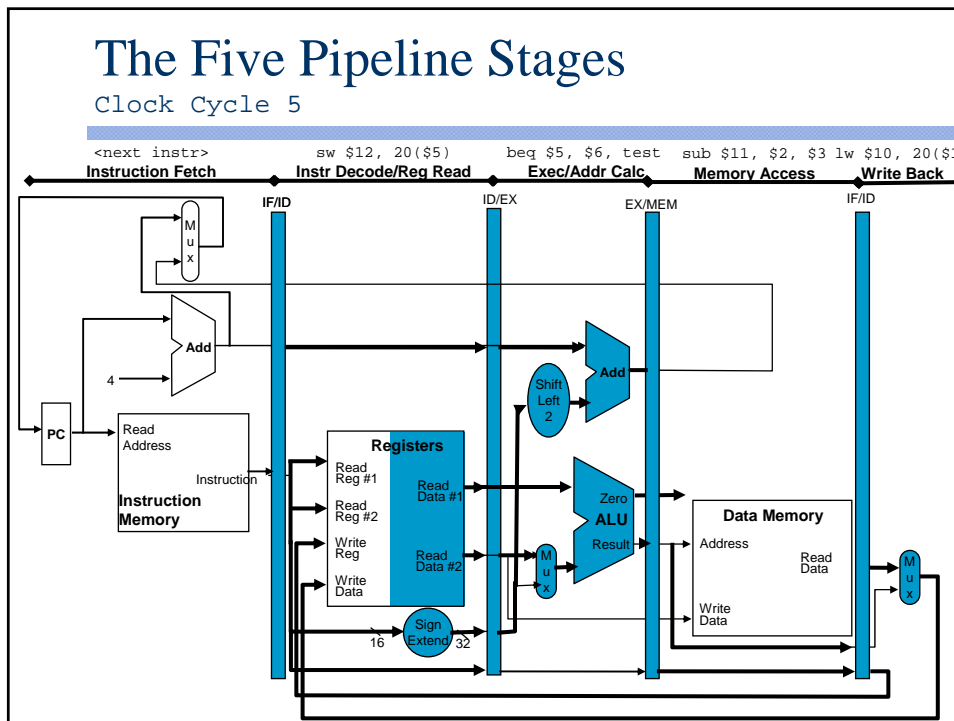
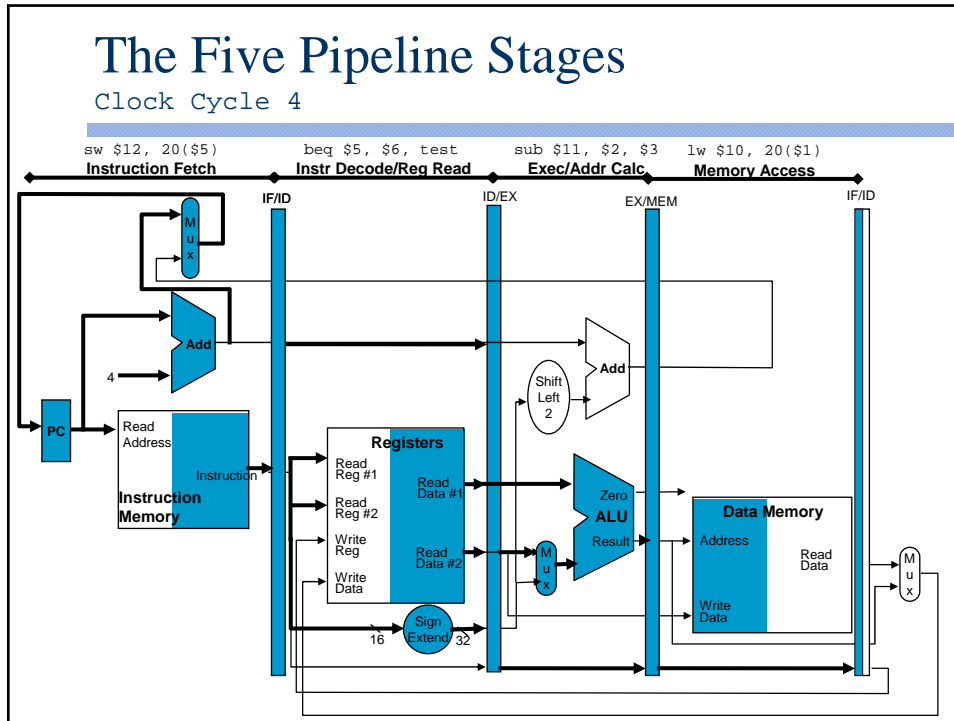
```
lw $10, 20($1)
sub $11, $2, $3
beq $5, $6, test # assume branch not taken
sw $12, 20($5)
```

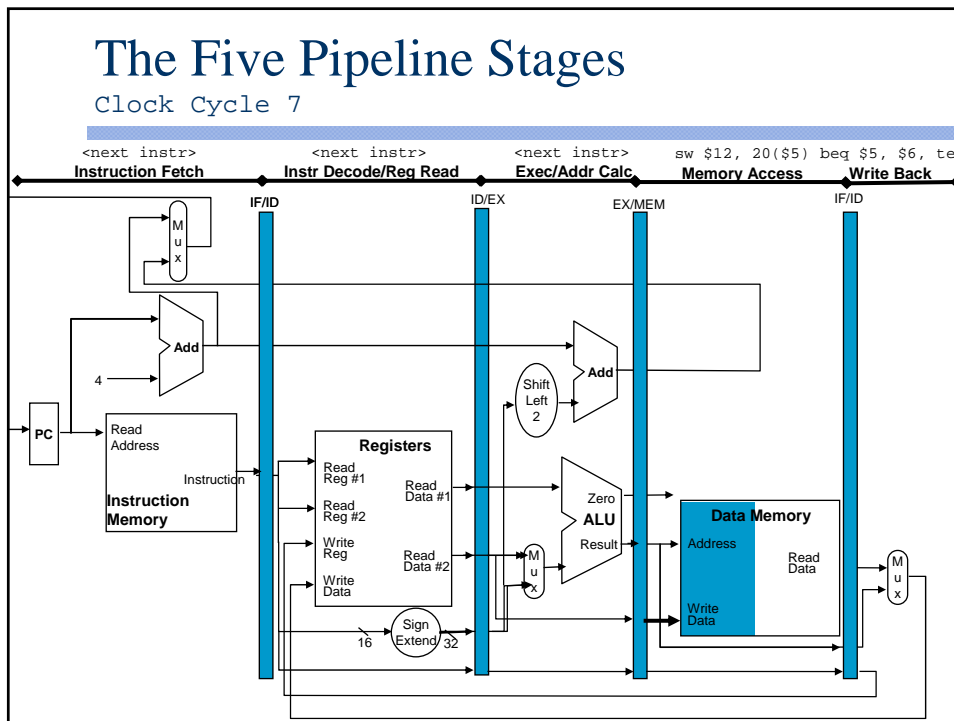
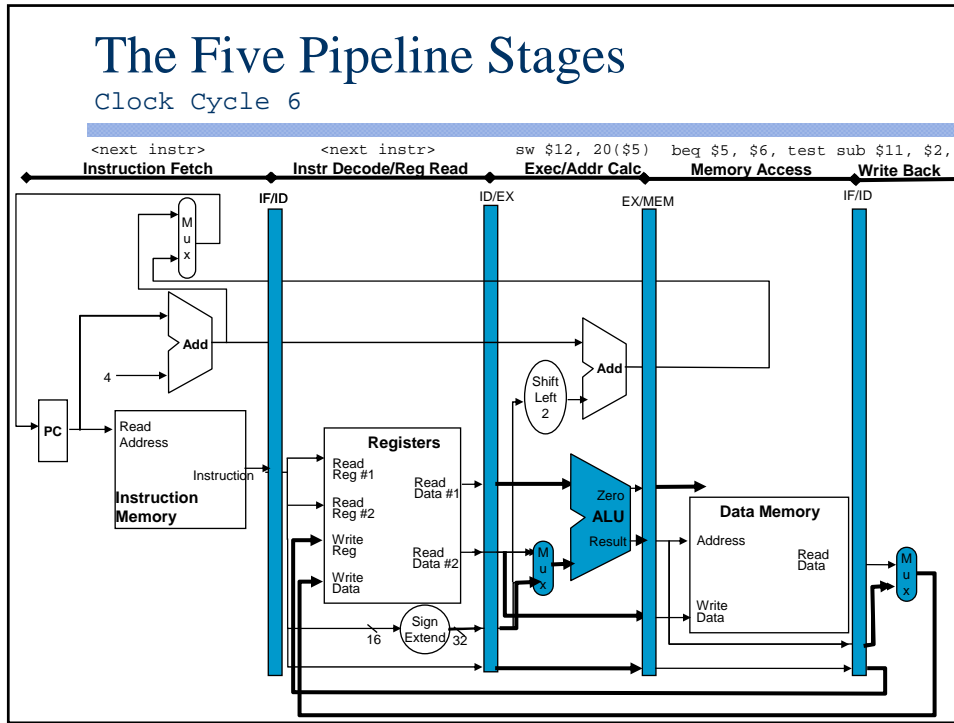
The Five Pipeline Stages

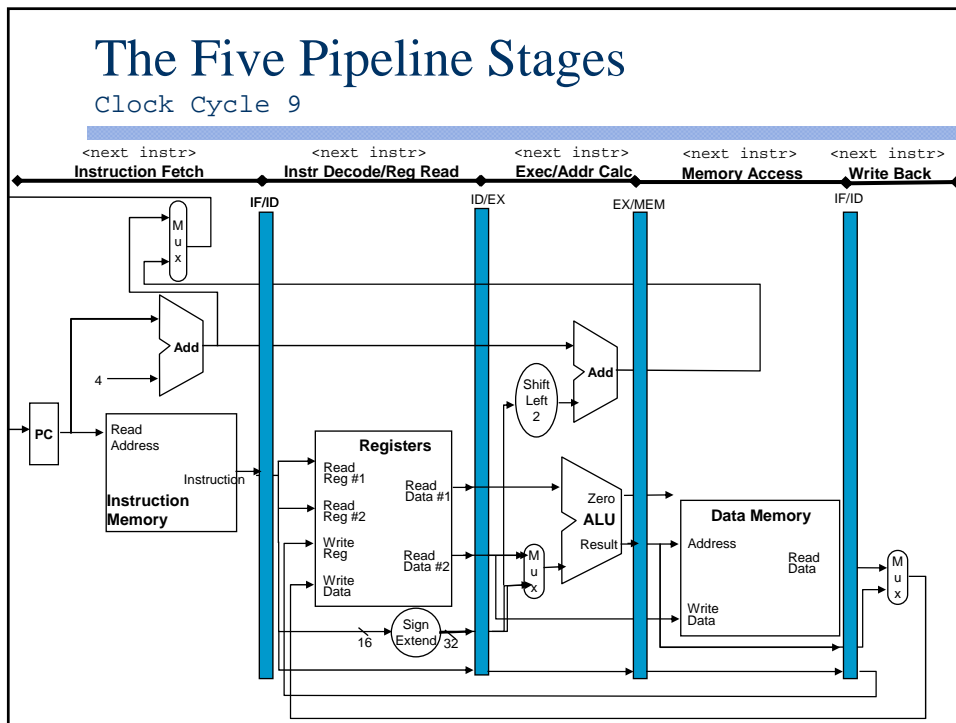
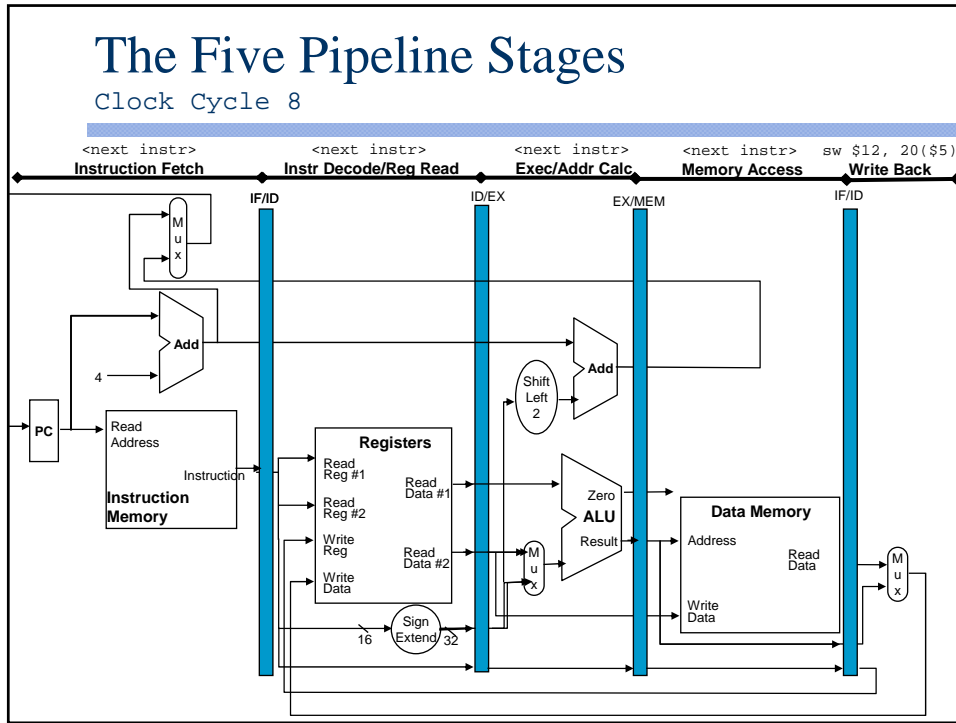
Clock Cycle 1











End of Slide Show



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