Basic Moving

December 29, 2018

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1 The MOV Instruction

- The CPU is where the most processing takes place
- Memory is where most data resides
- We need to be able to move data
  - From memory into the CPU
  - From the CPU into memory
  - From register to register
- This can all be done using the *MOV* command

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2 MOV Register ← Constant

- We have seen this kind of *MOV* before
- It allows you to put a number into a register
- Technically that number comes from memory

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3 MOV Register ← Register

- You can use a *MOV* destination, source instruction, where
  - ***Destination*** is the register you are copying to
  - ***Source*** is the register you are copying from

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4 MOV Register ← [Memory Location]

- This is called a ***Direct Read***
- It is used to read a memory location into the CPU

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5 MOV [Memory Location] ← Register

- This is called a ***Direct Write***
- It's used to write a memory location from the CPU

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6 MOV Register ← [Register]

- This is called an ***Indirect Read***
- It is used to read from a memory location into the CPU
- Similar to a ***Direct Read***, except rather than using a number to represent the memory location, another register is used. For example
  - ***Direct Read***: *MOV AL,[04]*
  - ***Indirect Read***: *MOV AL,BL*

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7 MOV [Register] ← Register

- This is called an ***Indirect Write***
- It is used to write to a memory location from CPU
- Similar to a ***Direct Write*** except rather than using a number to represent the memory location, another register is used. For example
  - ***Direct Write***: *MOV [AL],00*
  - ***Indirect Write***: *MOV [AL],BL*
