IO ports and Control Flow

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1 IO Devices

- Every IO device has a unique number when connected
- This number is called a ***Port***
- To send a byte to an IO device:
  1. Put byte you want into AL
  2. Use the *OUT* ***Port*** instruction
- To read a byte from an IO device:
  1. Use the *IN* ***Port*** instruction
- Not every IO device has read/write operations
- Some are for reading bytes
  - Keyboard
- Some are for writing bytes
  - LED
- Some are for both reading and writing
  - Network Card

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2 Simple Keyboard

- ***Port*** for the simple keyboard is *00*
- When activated, it allows you to get a keypress from the user
- You can read from the divice by using *IN 00*
- This will block your program until the user presses a key
- The ASCII value of the key pressed will appear in *AL*

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3 Control Flow

- While Loop
  - While Loops can be simulated using:
    1. Labels
    2. *CMP* instructions
    3. Jumps
- Do While Loop
  - Similar to While Loops
  - this time we want to guarantee that the main body of the loop executes
  - This is a case of moving th test that exits the loop at the end
- If Statement
  - Used to test for a condition
  - *If* the test passed, we execute the conditional code
  - We then carry on as before
- If-Else Statement
  - Similar to the If Statement
  - This time, if the test passes, we do one branch
  - otherwise we do another branch
- If-Else-If Statement
  - Same as If-Else Statement, except with more branches
