

# Jumps

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## 1 Jumping

- Normally, the PC register tells the CPU where the next instruction is
  - If you want your CPU to *jump* to another place in the program, you use the ***JMP*** instruction
  - For Example:
    - You might want to write *JMP 40*, to jump to memory location 40
    - However in SMS32, you cannot do this
    - If you want to jump to another section of code you must:
      1. Identify that place with a *label*
      2. Write *JMP label*
  - Jumps can go either direction:
    - Back up through the program
    - Further on in the program
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## 2 Conditional Jumping

- Rather than using the **JMP** instruction which will jump the specified label no matter what, you can use a *Conditinal Jump*
  1. **JZ**
    - Only Jump if the *Zero Flag* is set
  2. **JNZ**
    - Only Jump if the *Zero Flag* is Not set
  3. **JS**
    - Only Jump if the *Sign Flag* is set
  4. **JNS**
    - Only Jump if the *Sign Flag* is Not set
  5. **JC**
    - Only Jump if the *Carry Flag* is set
  6. **JNC**
    - Only Jump if the *Carry Flag* is Not set
  7. **JI**
    - Only Jump if the *Interrupt Flag* is set
  8. **JNI**
    - Only Jump if the *Interrupt Flag* is Not set