

1.3 Instruction Groups

Main Crux of the Text on Instruction Groups:

1. Instruction Groups:

- Every processor has common sets of opcodes for data movement, arithmetic, and logical operations.
- The mnemonics (names) for these instructions may vary depending on the manufacturer but the functionality is similar across processors.

2. Data Movement Instructions:

- These instructions move data between registers, memory, or peripheral devices.
- Examples include 'mov ax, bx' and 'lad 1234'.

3. Arithmetic and Logic Instructions:

- Arithmetic instructions involve operations like addition, subtraction, multiplication, and division.
- Logical instructions perform operations like AND, OR, XOR, and complement.
- Examples include 'and ax, 1234' and 'add bx, [1200]'.

4. Program Control Instructions:

- These instructions control the flow of program execution by modifying the instruction pointer.
- They can change the program flow based on certain conditions or allow for executing separate code blocks before resuming the original flow.
- Example: 'cmp ax, 0' followed by 'jne 1234' (jumps to instruction at address 1234 if the condition is true).

5. Special Instructions:

- These instructions modify specific processor behaviors.
- Examples include 'cli' (clear interrupt flag) and 'sti' (set interrupt flag), which are used to control how the processor interacts with the outside world.