The 8085 microprocessor has a comprehensive instruction set containing 246 instructions categorized into five main groups:

1. Data Transfer Instructions: These instructions move data between registers, memory, and I/O ports. Examples include:

- **MOV (Move):** Copies data from one location to another.
- **MVI (Move Immediate):** Loads immediate data into a register or memory location.
- **LXI (Load Immediate):** Loads a 16-bit value into a register pair.
- **LDA (Load Accumulator):** Loads data from memory into the accumulator.
- **STA (Store Accumulator):** Stores data from the accumulator into memory.
- **LHLD (Load HL Pair Direct):** Loads data from memory into the HL register pair.
- **SHLD (Store HL Pair Direct):** Stores data from the HL register pair into memory.
- **XCHG (Exchange):** Exchanges the contents of two registers.

2. Arithmetic Instructions: Perform arithmetic operations on data in registers or memory. Examples include:

- **ADD (Add):** Adds two numbers and stores the result in the accumulator.
- **ADC (Add with Carry):** Adds two numbers and the carry flag, storing the result in the accumulator.
- **SUB (Subtract):** Subtracts one number from another and stores the result in the accumulator.
- **SBB (Subtract with Borrow):** Subtracts one number and the borrow flag from another, storing the result in the accumulator.
- **DCR (Decrement):** Decrements the value in a register or memory location.
- **INR (Increment):** Increments the value in a register or memory location.

3. Logical Instructions: Perform logical operations on data in registers or memory. Examples include:

- **AND (Logical AND):** Performs a bitwise AND operation on two numbers.
- **OR (Logical OR):** Performs a bitwise OR operation on two numbers.
- **XOR (Logical Exclusive OR):** Performs a bitwise XOR operation on two numbers.
- **CPL (Complement):** Complements the contents of a register or memory location.
- **DAA (Decimal Adjust Accumulator):** Adjusts the accumulator for decimal operation.

4. Branching Instructions: Control the flow of program execution based on conditions. Examples include:

- **JMP (Jump):** Unconditionally jumps to a specified memory address.
- **JNZ (Jump if Not Zero):** Jumps to a specified address if the zero flag is not set.
- **JZ (Jump if Zero):** Jumps to a specified address if the zero flag is set.
- **CALL (Call Subroutine):** Calls a subroutine at a specified address.
- **RET (Return):** Returns from a subroutine.

5. I/O and Machine Control Instructions: Interact with I/O devices and control the microprocessor itself. Examples include:

- **IN (Input):** Reads data from an input port into the accumulator.
- **OUT (Output):** Sends data from the accumulator to an output port.
- **HLT (Halt):** Halts the microprocessor execution.
- **EI (Enable Interrupts):** Enables the interrupt system.
- **DI (Disable Interrupts):** Disables the interrupt system.