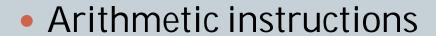
Microprocessor & Interfacing Lecture 7 8085 Instruction Set--2

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Contents



Addition

- Any 8-bit number, or the contents of register, or the contents of memory location can be added to the contents of accumulator.
- The result (sum) is stored in the accumulator.
- No two other 8-bit registers can be added directly.
- Example: The contents of register B cannot be added directly to the contents of register C.

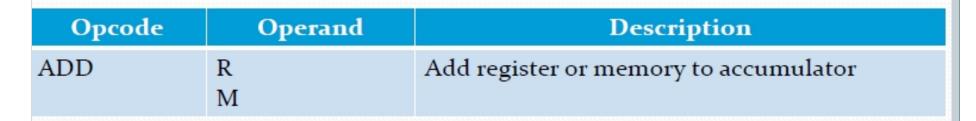
Subtraction

- Any 8-bit number, or the contents of register, or the contents of memory location can be subtracted from the contents of accumulator.
- The result is stored in the accumulator.
- Subtraction is performed in 2's complement form.
- If the result is negative, it is stored in 2's complement form.
- No two other 8-bit registers can be subtracted directly.

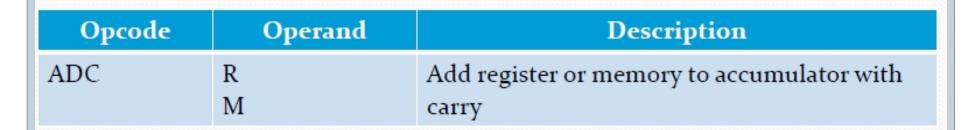
Increment/ Decrement

- The 8-bit contents of a register or a memory location can be incremented or decremented by 1.
- The 16-bit contents of a register pair can be incremented or decremented by 1.
- Increment or decrement can be performed on any register or a memory location.

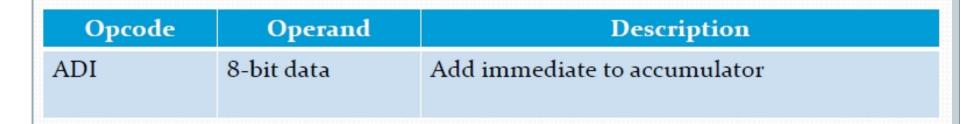
Arithmetic Instructions



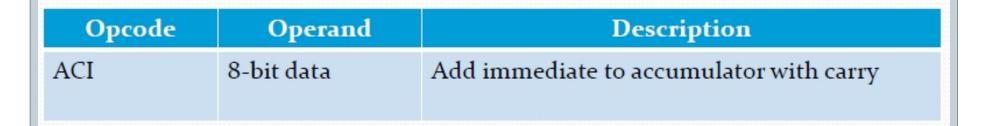
- The contents of register or memory are added to the contents of accumulator.
- The result is stored in accumulator.
- If the operand is memory location, its address is specified by H-L pair.
- All flags are modified to reflect the result of the addition.
- Example: ADD B or ADD M



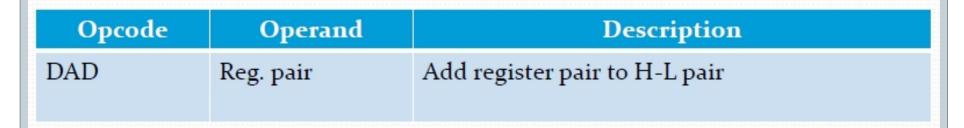
- The contents of register or memory and Carry Flag (CY) are added to the contents of accumulator.
- The result is stored in accumulator.
- If the operand is memory location, its address is specified by H-L pair.
- All flags are modified to reflect the result of the addition.
- Example: ADC B or ADC M



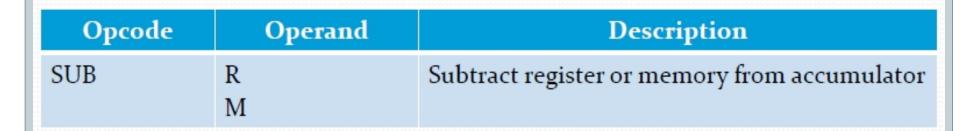
- The 8-bit data is added to the contents of accumulator.
- The result is stored in accumulator.
- All flags are modified to reflect the result of the addition.
- Example: ADI 45 H



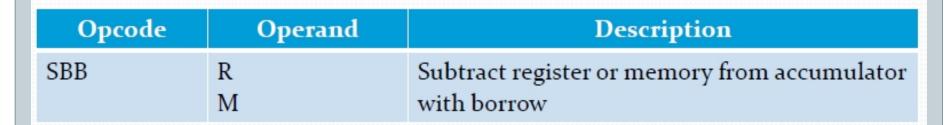
- The 8-bit data and the Carry Flag (CY) are added to the contents of accumulator.
- The result is stored in accumulator.
- All flags are modified to reflect the result of the addition.
- Example: ACI 45 H



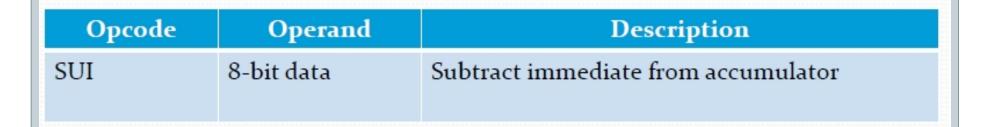
- The 16-bit contents of the register pair are added to the contents of H-L pair.
- The result is stored in H-L pair.
- If the result is larger than 16 bits, then CY is set.
- No other flags are changed.
- Example: DAD B



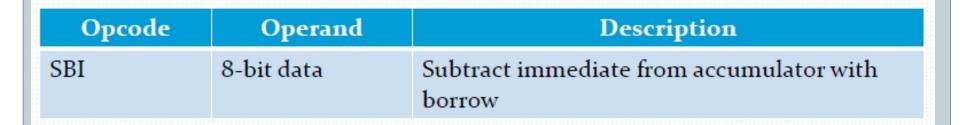
- The contents of the register or memory location are subtracted from the contents of the accumulator.
- The result is stored in accumulator.
- If the operand is memory location, its address is specified by H-L pair.
- All flags are modified to reflect the result of subtraction.
- Example: SUB B or SUB M



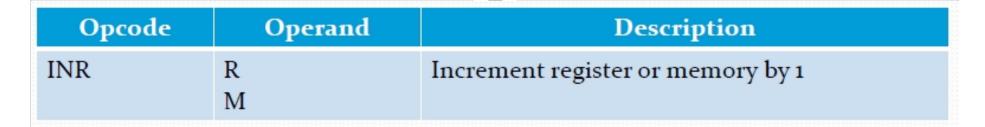
- The contents of the register or memory location and Borrow Flag (i.e. CY) are subtracted from the contents of the accumulator.
- The result is stored in accumulator.
- If the operand is memory location, its address is specified by H-L pair.
- All flags are modified to reflect the result of subtraction.
- Example: SBB B or SBB M



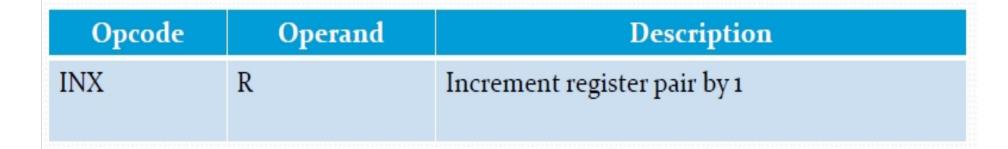
- The 8-bit data is subtracted from the contents of the accumulator.
- The result is stored in accumulator.
- All flags are modified to reflect the result of subtraction.
- Example: SUI 45 H



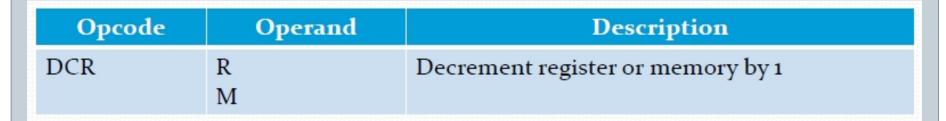
- The 8-bit data and the Borrow Flag (i.e. CY) is subtracted from the contents of the accumulator.
- The result is stored in accumulator.
- All flags are modified to reflect the result of subtraction.
- Example: SBI 45 H



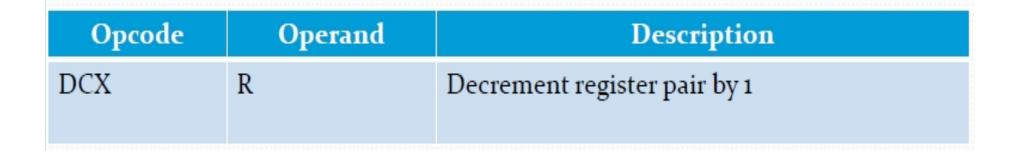
- The contents of register or memory location are incremented by 1.
- The result is stored in the same place.
- If the operand is a memory location, its address is specified by the contents of H-L pair.
- Example: INR B or INR M



- The contents of register pair are incremented by 1.
- The result is stored in the same place.
- Example: INX H



- The contents of register or memory location are decremented by 1.
- The result is stored in the same place.
- If the operand is a memory location, its address is specified by the contents of H-L pair.
- Example: DCR B or DCR M



- The contents of register pair are decremented by 1.
- The result is stored in the same place.
- Example: DCX H

Scope of Research

• Here we can developed new instruction format or instruction which is more easily understand by user and the microprocessor. and which has capability of fast execution speed with large data and less time.