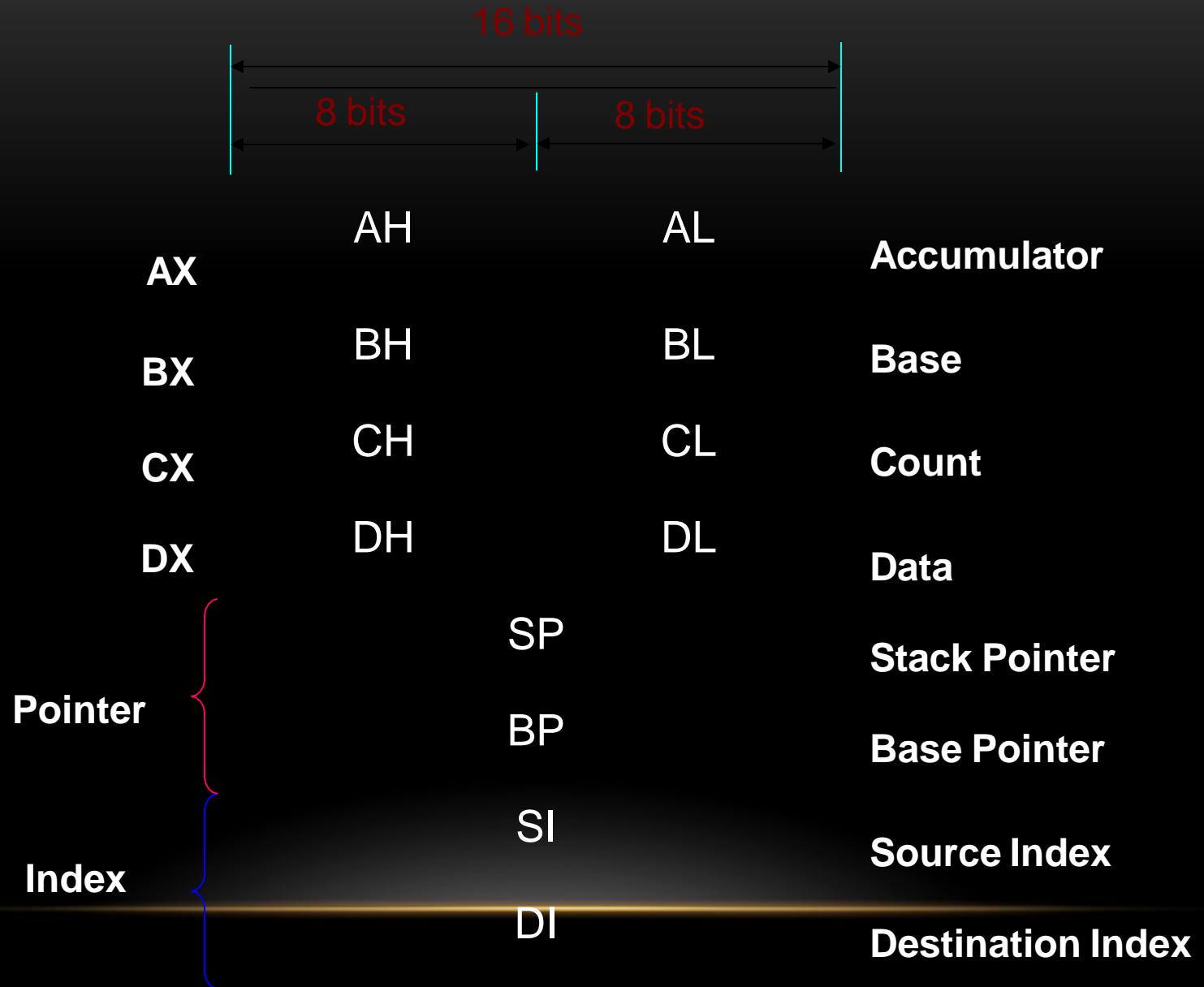


INTEL 8086 REGISTER SET

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GENERAL PURPOSE REGISTERS



DATA REGISTERS

AX- **Accumulator Register**

- I.** Carry operands and result, Arithmetic operations
- II.** Word multiply
- III.** Word divide,
- IV.** Word I /O data transfer
- V.** Can be accessed as AL/AH

DATA REGISTERS

AL- Lower Byte AX

- I. Byte data transfer and store result, Arithmetic operations
- II. Byte multiply
- III. Byte divide,
- IV. Byte I/O data transfer

DATA REGISTERS

AH- Higher byte of AX

I. Higer byte AX

II. Data register

III. store data and arithmetic operations

DATA REGISTER

BX- Base Register

- I. Store data and Result
- II. Carry Offset address for Data segment
- III. Accessed as BL/BH also.

DATA REGISTER

CX- Counter Register

- I. Data register
- II. String operation
- III. Loops instructions
- IV. Repeated shift and rotate
- V. Can be accessed as CL/CH

DATA REGISTERS

CL- Lower Byte CX

I. Data Register

II. Byte String operation

III. 8-bit counter

IV. Byte shift ,rotate

DATA REGISTERS

DX- Data Register

- I. Data carry and storing result for arithmetic operations
- II. Word multiply,
- III. word divide,
- IV. indirect I/O for port accessing
- V. Can be accessed as DL/DH

IP – INSTRUCTION POINTER

- I. IP holds the offset address of the instruction to be executed.
- II. This is the program counter of 8086.
- III. During JUMP/INT/LOOP execution IP modifies by a displacement.
- IV. `JMP L` ($IP=IP+L$)

INSTRUCTION QUEUE

- I. The instruction Register of 8086.
- II. The queue is 6 bytes in length.
- III. The maximum size of an instruction of 8086 is six bytes.

SP (STACK POINTER)

- I. SP is used to point the stack top.
- II. Used by PUSH and POP instructions.
- III. SP decrements by 2 after PUSH
- IV. SP increments by 2 before POP
- V. Stack Allows word operation

BP (BASE POINTER)

- I. BP is used to access stack using base addressing mode.
- II. `MOV AX, A[BP]`
- III. SP and BP the default reference to form a physical address is the Stack Segment (SS- Register)
- IV. Can be used to access data in other segments

SI: SOURCE INDEX REGISTER

- can be used for string or array operation
- When string operations are performed, the SI register points to memory locations in the data segment which is addressed by the DS register. Thus, SI is associated with the DS in string operations.

DI: DESTINATION INDEX REGISTER

- I. This is also required for some string operations
- II. When string operations are performed, the DI register points to memory locations in the data segment which is addressed by the ES register. Thus, DI is associated with the ES in string operations.
- III. The SI and the DI registers may also be used to access data
- IV. stored in arrays