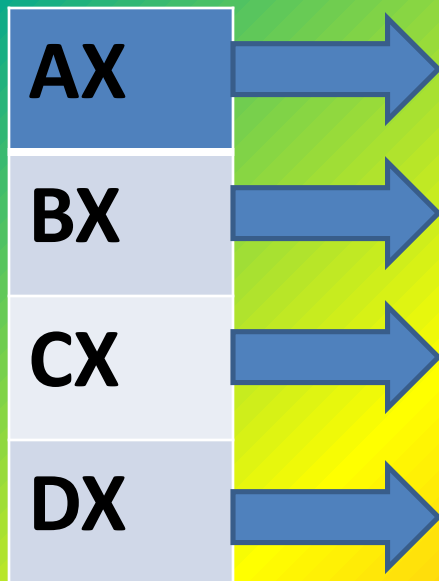


General Purpose Registers

- Each of these 16-bit registers are further subdivided into two 8-bit registers.

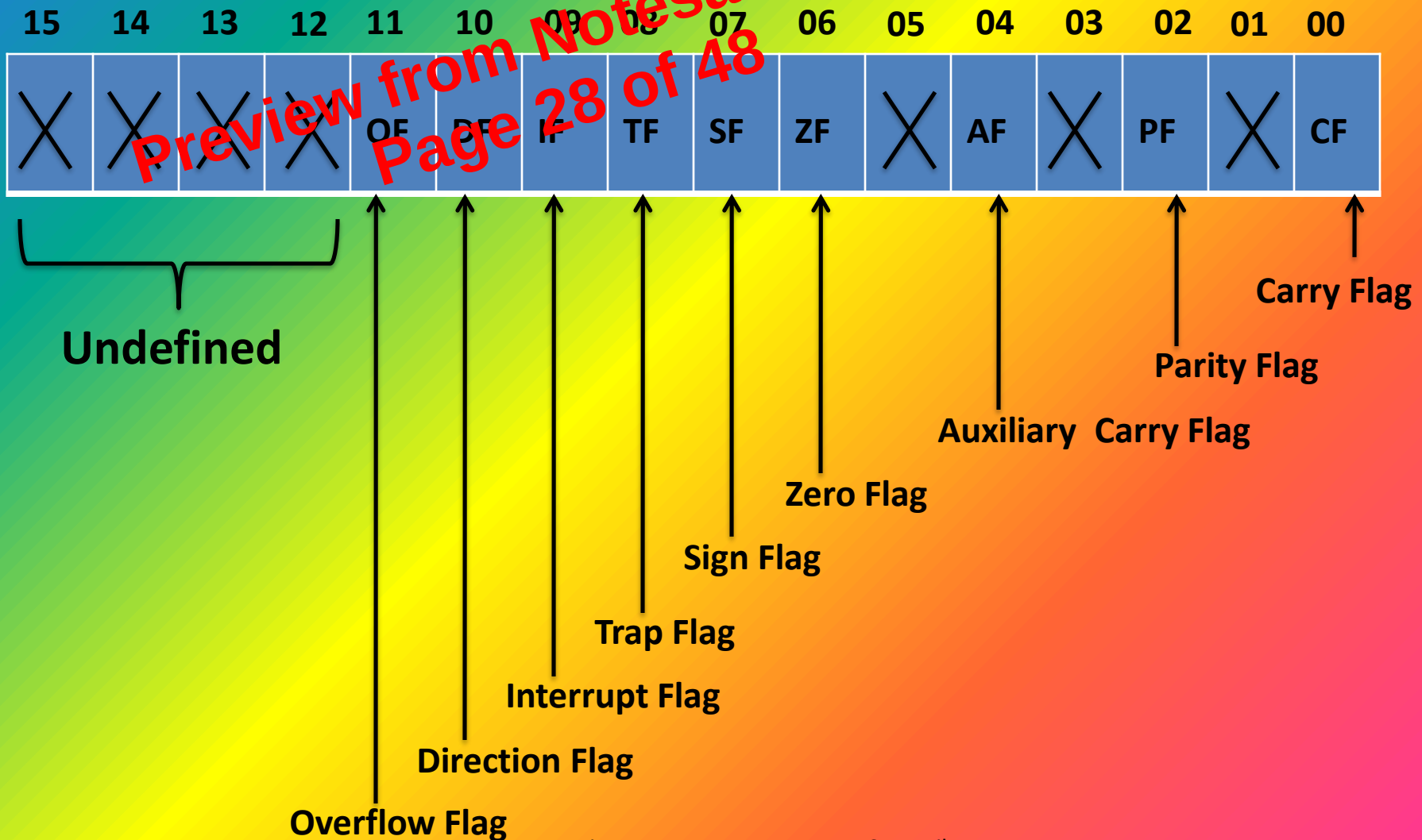


AH	AL
BH	BL
CH	CL
DH	DL

Pointer & Index Register

- Following four registers are under this category:
- (1). Stack Pointer (SP),
- (2). Base Pointer (BP),
- (3). Source Index (SI),
- (4). Destination Index (DI).

Flag Register (PSW)



Flag Register (RSW)

- 8086 has 9 flags and they are divided into two categories:
- (1). Condition Flags,
- (2). Control Flags.

Flag Register (PSW)

- Following are the nine flags:

Condition Flags	Control Flags
1. Carry Flag	1. Trap Flag
2. Auxiliary Carry Flag	2. Interrupt Flag
3. Zero Flag	3. Directional Flag
4. Sign Flag	
5. Parity Flag	
6. Overflow Flag	

Flag Register (PSW)

- **Carry Flag (CY):** This flag indicates an overflow condition for unsigned integer arithmetic. It is also used in multiple-precision arithmetic.
- **Auxiliary Flag (AC):** If an operation performed in ALU generates a carry/borrow from lower nibble (i.e. D0 – D3) to upper nibble (i.e. D4 – D7), the AC flag is set i.e. carry given by D3 bit to D4 is AC flag. This is not a general-purpose flag, it is used internally by the processor.
- **Parity Flag (PF):** This flag is used to indicate the parity of result. If lower order 8-bits of the result contains even number of 1's, the Parity Flag is set and for odd number of 1's, the Parity flag is reset.

Signals In Minimum Mode

- (9). **INTR**: (Interrupt request). It is used to determine the availability of request.
- (10). **$\overline{INTA}$** : when goes low processor acknowledges the interrupt.
- (11). **$\overline{TEST}$** : Processor suspends operation when goes high & resumes the operation when goes low. It is used to synchronize the processor to external events.
- (12). **NMI**: (Non Maskable interrupt): it can not be delayed or rejected i.e. can not be recognized.
- (13). **RESET**: when goes low processor terminates the current activity & goes to reset state.

Signals In Maximum Mode

(17). **S2, S1, S0 – Status Lines:** These are the status lines which reflect the type of operation, being carried out by the processor.

S0	S1	S2	Indication
0	0	0	Interrupt Acknowledge
0	0	1	Read I/O port
0	1	0	Write I/O port
0	1	1	Halt
1	0	0	Code Access
1	0	1	Read memory
1	1	0	Write memory
1	1	1	Passive