EFlags Register

- 32 bit register, contains status flags, control flags, system flags
- determines result of arithmetic operations
- controls/determines processor behavior

Status Flags

- Set or cleared as a result of arithmetic operations (comparisons)
- Ex: Flag, Parity

Control Flags

- control operations of the processor

System Flags

- determine specific operations for the task

Flags/EFlags register

31 _ _ _ _ _ _ 0 ← This is carry flag

CMP does subtraction: subtracts the second operand from the first, result decides the flags that are set/cleared

Carry Flag

- Indicates carry/borrow occurred in least significant bit during operation
- In unsigned numbers: set (1) when the second operand is greater than the first operand, 0 is the second operand is less than or equal to the first
- If SF is on, carry flag will most likely be on

Example: `cmp 40, 10`

$40 - 10 = 30$

$10 \leq 40$, so CF is 0 (clear)

Example: `cmp 10, 15`

$10 - 15 = -5$

$10 > 15$, so CF is 1 (set)

Example: `cmp 10, 10`

$10 - 10 = 0$

$10 == 10$, so CF is clear (0), but zero flag is set (1)

Overflow Flag

Set when there's an overflow (result is too large/small for signed numbers)

Parity Flag

- Set when number of set bits in least significant byte is even or odd
- Set when number of 1s in least significant byte is even
- Cleared when odd