**Registers:**

1. **General registers:**

As the title says, general register are the one we use most of the time Most of the instructions perform on these registers. They all can be broken down into 16 and 8 bit registers.

32 bits: EAX EBX ECX EDX

16 bits: AX BX CX DX

8 bits: AH AL BH BL CH CL DH DL

1. **Segment registers**   
     
   Segment registers hold the segment address of various items. They are only available in 16 values.

CS, DS, ES, FS, GS, SS

1. **Indexes and pointers**

Indexes and pointer and the offset part of and address. They have various uses but each register has a specific function.

EDI, DI, ESI, SI, EBP, BP, ESP, SP EIP, IP

1. **The EFLAGS register**

The EFLAGS register hold the state of the processor. It is modified by many instructions and is used for comparing some parameters, conditional loops and conditional jumps. Each bit holds the state of specific parameter of the last instruction. Here is a listing:

Bit Label Description

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0 CF Carry flag

2 PF Parity flag

4 AF Auxiliary carry flag

6 ZF Zero flag

7 SF Sign flag

8 TF Trap flag

9 IF Interrupt enable flag

10 DF Direction flag

11 OF Overflow flag

12-13 IOPL I/O Privilege level

14 NT Nested task flag

16 RF Resume flag

17 VM Virtual 8086 mode flag

18 AC Alignment check flag (486+)

19 VIF Virtual interrupt flag

20 VIP Virtual interrupt pending flag

21 ID ID flag

Reference:

http://www.eecg.toronto.edu/~amza/www.mindsec.com/files/x86regs.html