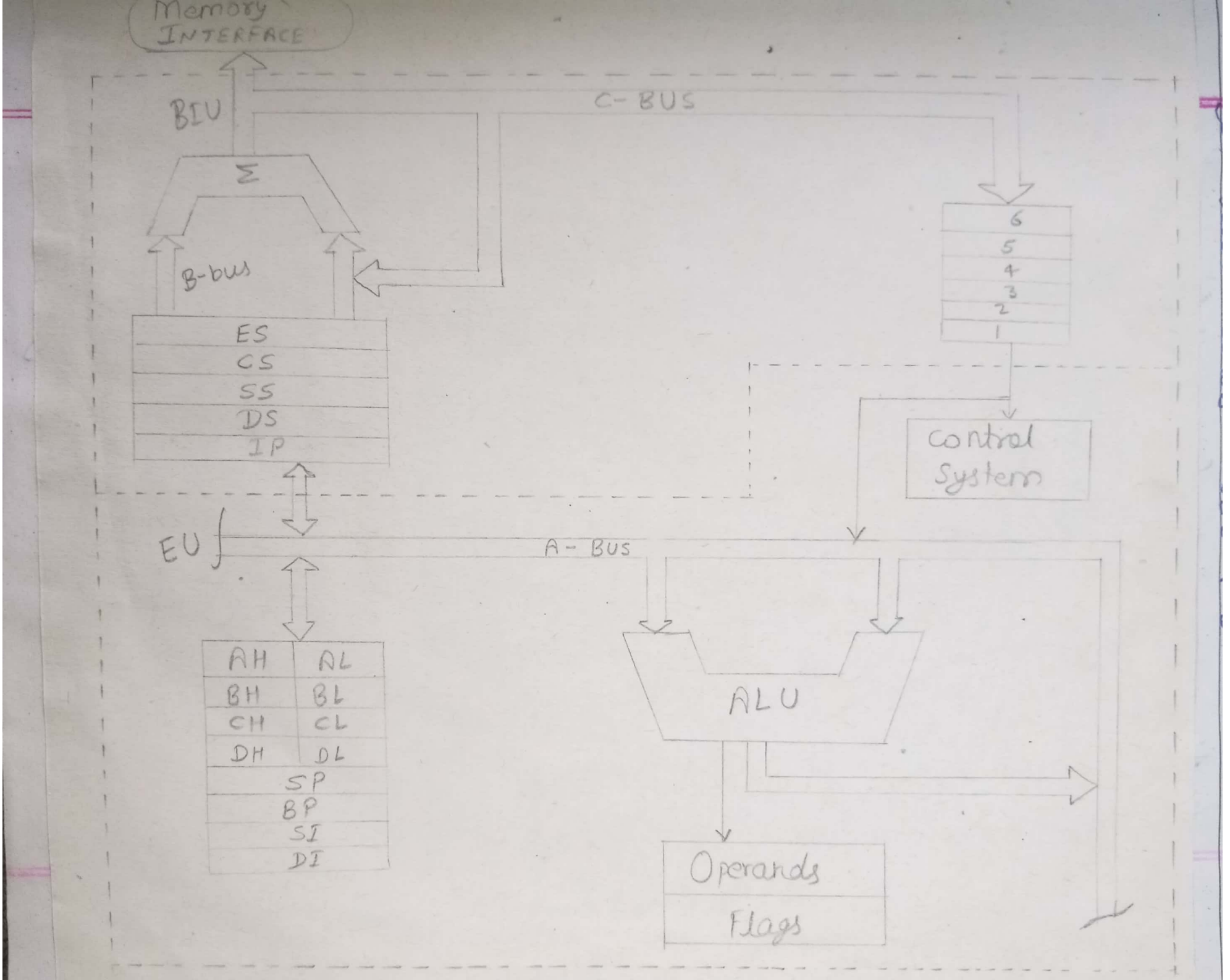

Flag Register

It is a 16-bit registers behave like a flip-flop (FF). It is divided into two categories

(i) Conditional Flag
(ii) Control flags.

(i) Conditional Flags -

It represents the result of the last arithmetic or logical instructions executed.

(1) Carry Flag -

It sets if there is a carry of MSB & also sets when borrow is needed in subtraction.

(2) Parity Flag -

It is set to 1 if the operation contains an even number of ones.

(3) Auxiliary Carry Flag -

It is set if there is an overflow out of bit 3. This is used for BCD operations.

(4) Zero Flag -

It is set if the result of operation in ALU is zero.

(5) Sign Flag -

If the MSB result is 1, it is set that indicates the result is negative.

(6) Overflow Flag -

This flag is set if result is out of range.

-x-x-

(ii) Control Flags -

It controls the operations of EU.

(a) Trap Flag -

It is used for single step control & allows the user to execute one instruction at a time for debugging. If it is set, then the program can be run in a single step mode.

(b) Interrupt Flag -

It is an interrupt enable/disable