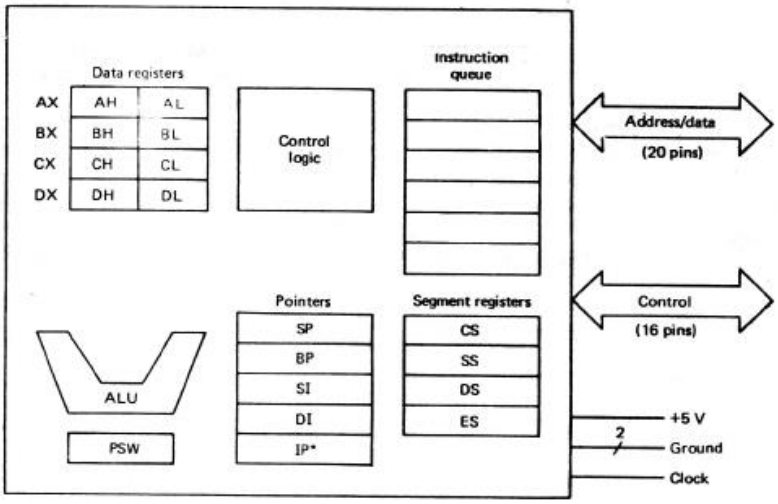
External System Bus Architecture

It is a 16 bit processor with 40 pins. It has 20 address pins and out of which 16are used as data pins. This concept of using same pins for both address and data is called Multiplexing. It has 16 control signals. It can access a memory of 1 MB.(220).

It has 14 registers which are 16 bits wide. There are a set of arithmetic registers, set of pointers(Base and Index registers),set of segment registers. It has program status word(PSW) or Flag register and a instruction pointer.



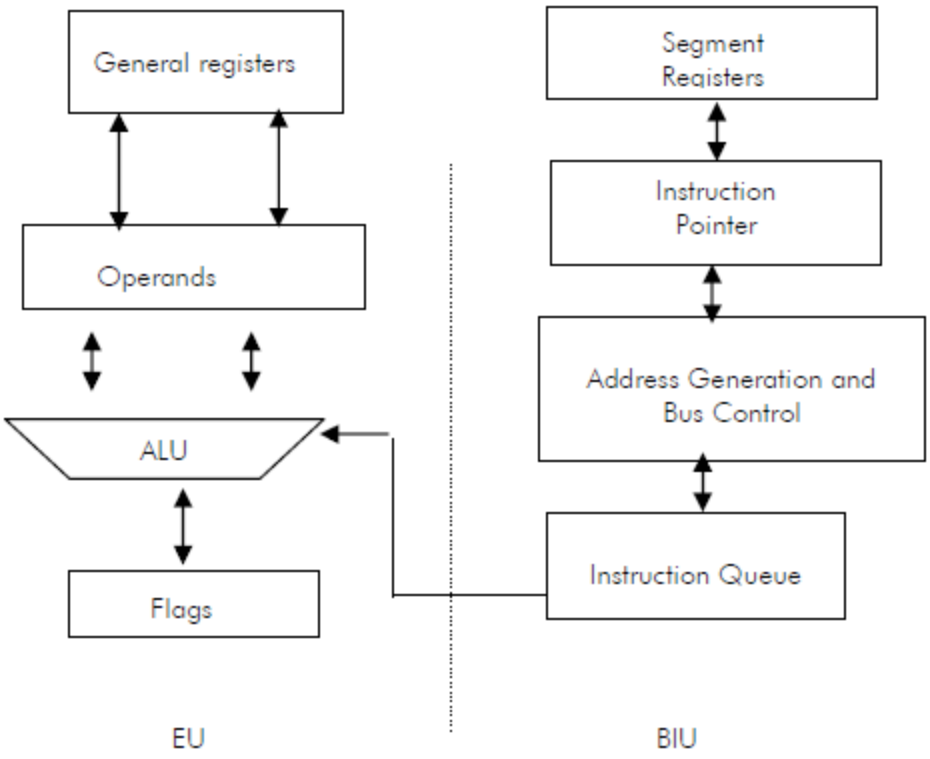
Instruction queue: It can queue 6 bytes at a time.

Figure 2.6: 8086's Internal Configuration

Execution Unit (EU) and Bus Interface Unit (BIU)

8086 consist of two processors called EU and BIU. Two Processors can work in parallel. This improves speed of execution. BIU fetches instruction and place them in instruction queue.

Execution unit decodes and execute instruction. When EU is executing an instruction BIU can fetch the next instruction.



Instruction set

It has a large instruction set which operates on bits, 16 bit or 32 bit word. They have variety of instructions for arithmetic operation , data movement, logical operation ,shift, rotate operation , string manipulation etc.