CPU Register

The Z80 CPU contains 208 bits of read/write memory that are available to the programmer. Figure 2 shows how this memory is configured to eighteen 8-bit registers and four 16-bit registers. All Z80 CPU's registers are implemented using static RAM. The registers include two sets of six general-purpose registers that can be used individually as 8-bit registers or in pairs as 16-bit registers. There are also two sets of Accumulator and Flag registers and six special-purpose registers.

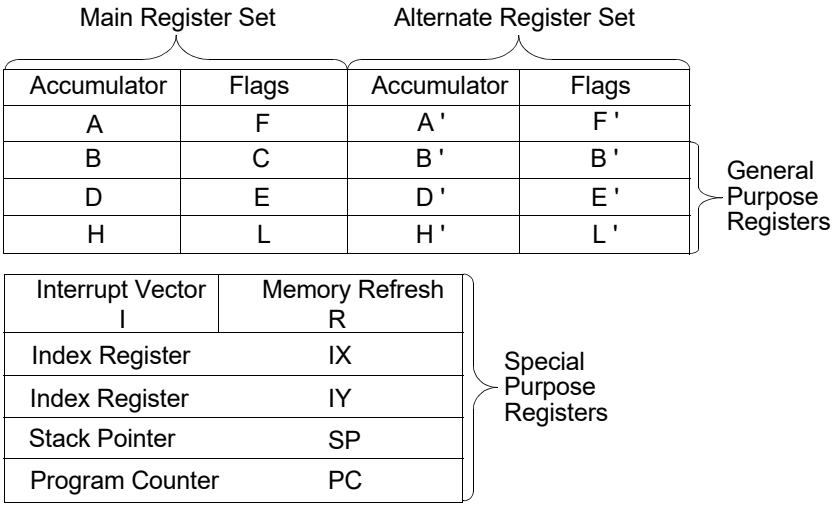

Figure 2. CPU Register Configuration

Special-Purpose Registers

Program Counter (PC). The program counter holds the 16-bit address of the current instruction being fetched from memory. The Program Counter is automatically incremented after its contents are transferred to the address lines. When a program jump occurs, the new value is automatically placed in the Program Counter, overriding the incrementer.

Stack Pointer (SP). The stack pointer holds the 16-bit address of the current top of a stack located anywhere in external system RAM memory. The external stack memory is organized as a last-in first-out (LIFO) file. Data can be pushed onto the stack from specific CPU registers or popped off of the stack to specific CPU registers through the execution of PUSH and POP instructions. The data popped from the stack is always the most recent data pushed onto it. The stack allows simple implementation of multiple level interrupts, unlimited subroutine nesting and simplification of many types of data manipulation.