8051 Microcontroller

Presented By,

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I/O Ports

(1). One of the major features of a microcontroller is the versatility built into the I/O circuits that connect the microcontroller to the outside world .

(2). To be commercially viable, the 8051 had to incorporate as many I/O functions as were technically and economically possible.

(3). One of the most useful features of the 8051 is four bidirectional I/O ports.

(4). Each port has an 8-bit latch in the SFR space as mentioned earlier.

PORT 0

(1). Port 0 is 8-bitbidirectional I/O port.

(2). Port 0 pins can be used as high-impedance inputs.

(3). Port 0 is also the multiplexed low-order address and data bus during accesses to external program and data memory.

(4). We r using pins no. from 32 to 39.

(5). When used as an output the pin latches are programmed to 0.

(5). When used as an input the pin latches are programmed to 1.

Timers and Counters

(4). These two up counters are name T0 and T1 and are provided for general use of the programmer.

(5). Each counter may be programmed to count internal clock pulses, act as a timer, or programmed to count external events as a counter.

(6). The counters are divided into two 8-bit registers called the timer low (TL0, TL1) and timer high (TH0, TH1) bytes.

Interrupts

- An interrupt is a special feature which Allows the 8051 to provide the illusion of "multitasking," although in reality the 8051 is only doing one thing at a time. The word "interrupt" can often be substituted with the word "event."

- An interrupt is triggered whenever corresponding event occurs. When the event occurs, the 8051 temporarily puts "on hold" the normal execution of the program and executes a special section of code referred to as an interrupt handler.

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