



SNS COLLEGE OF ENGINEERING

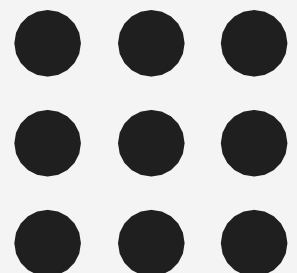
Kurumbapalayam(Po), Coimbatore – 641 107

An Autonomous Institution

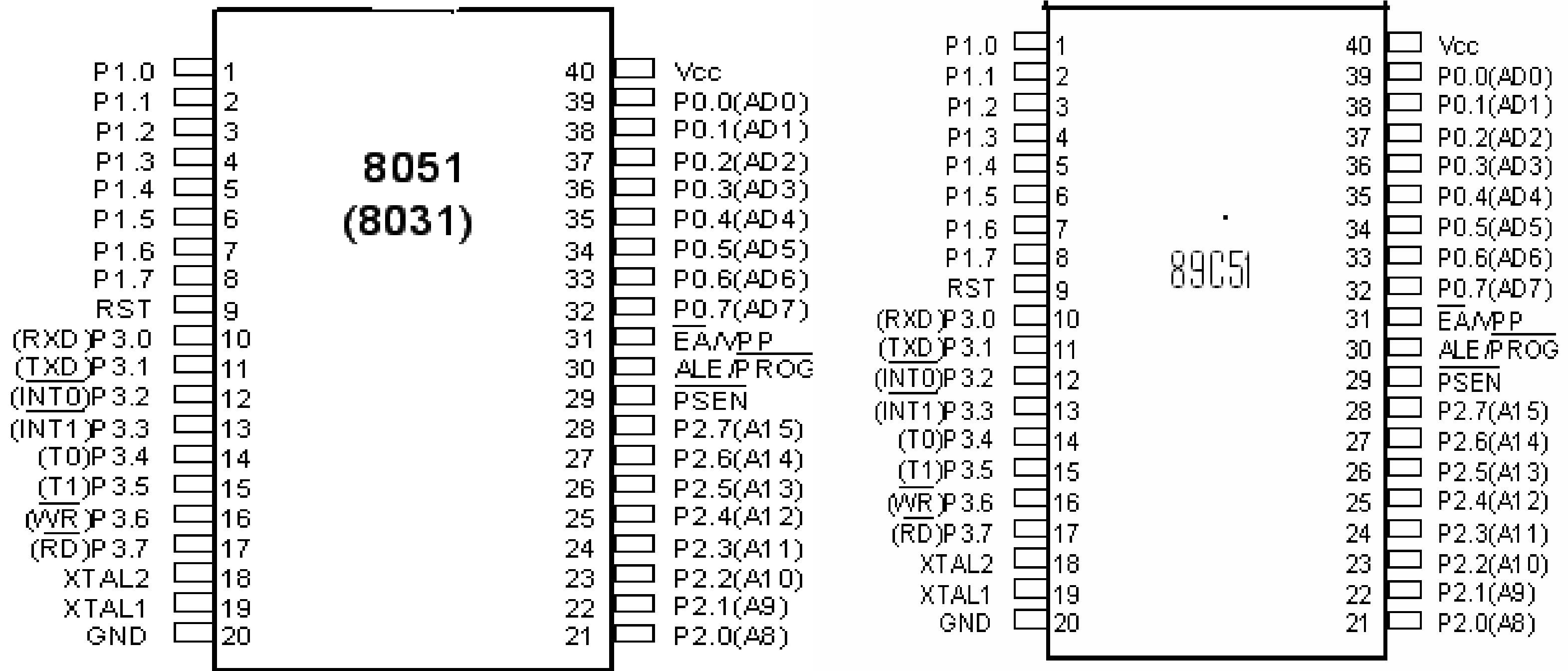
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89c51 BASIC INPUT OUTPUT PINS



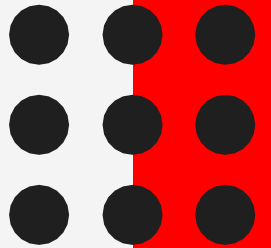
AT89c51 - PIN DIAGRAM





AT89c51 – Pin Description

- Port 0 :
 - 8-bit open-drain bi-directional I/O port.
 - As an output port -> each pin can sink eight TTL inputs.
When 1s are written to port 0 pins - used as high- impedance inputs.
 - can be configured to be the multiplexed low- order address/data bus during accesses to external pro-gram and data memory.
 - receives the code bytes during Flash program- ming, and outputs the code bytes during program verification.



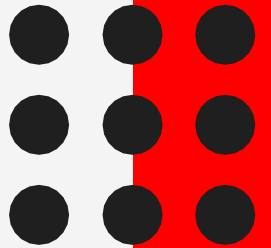


AT89c51 – Pin Description

- Port 1 :
 - 8-bit bi-directional I/O port with internal pullups.
 - Port 1 output buffers can sink/source four TTL inputs.

When 1s are written to Port 1 pins they are pulled high by the internal pullups and can be used as inputs.

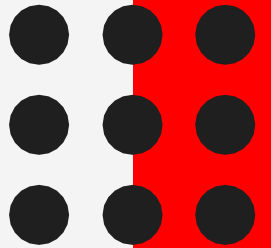
 - As inputs, Port 1 pins that are externally being pulled low will source current (IIL) because of the internal pullups.
 - Port 1 also receives the low-order address bytes during Flash programming and verification.





AT89c51 – Pin Description

- Port 2 :
 - 8-bit bi-directional I/O port .
 - The Port 2 output buffers can sink/source four TTL inputs. When 1s are written to Port 2 pins they are pulled high by the internal pullups and can be used as inputs.
 - As inputs Port 2 pins that are externally being pulled low will source current (IIL) because of the internal pullups.
 - Port 2 fetches from external program memory and during accesses to external data memory that use 16-bit addresses (MOVX @ DPTR).
 - During accesses to external data memory that use 8-bit addresses (MOVX @ RI),
 - Port 2 also receives the high-order address bits and some control signals during Flash programming and verification.



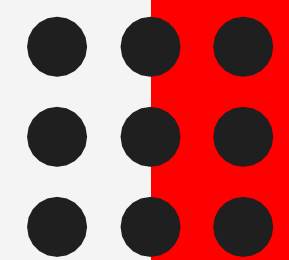


AT89c51 – Pin Description

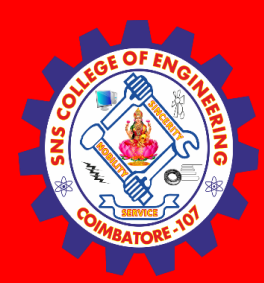
- Port 3 :
 - 8-bit bi-directional I/O port.
 - The Port 3 output buffers can sink/source four TTL inputs. When 1s are written to Port 3 pins they are pulled high by the internal pullups and can be used as inputs. As inputs, Port 3 pins that are externally being pulled low will source current (IIL) because of the pullups.
 - Port 3 also receives some control signals for Flash programming and verification.



AT89c51 – Pin Description



Port Pin	Alternate Functions
P3.0	RXD (serial input port)
P3.1	TXD (serial output port)
P3.2	$\overline{\text{INT0}}$ (external interrupt 0)
P3.3	$\overline{\text{INT1}}$ (external interrupt 1)
P3.4	T0 (timer 0 external input)
P3.5	T1 (timer 1 external input)
P3.6	$\overline{\text{WR}}$ (external data memory write strobe)
P3.7	$\overline{\text{RD}}$ (external data memory read strobe)



Assessment

Can you tell no of pins available in 89C51

40 pins

Can you recall the ports available in 89C51

Port 0 , Port 1 , Port 2, Port 3





THANK YOU