

Slide 1

ECE/CE 3720: Embedded System Design
(ECE 6960/2 and CS 6968)

Chris J. Myers
Lecture 2: I/O Ports

Slide 3

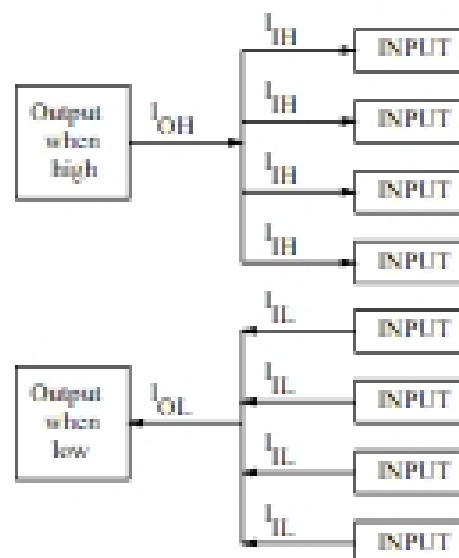
I/O Currents

Family	I_{OH}	I_{OL}	I_{IH}	I_{IL}
Standard TTL	0.4mA	16mA	40 μ A	1.6mA
Schottky TTL	1mA	20mA	50 μ A	2mA
Low-power Schottky TTL	0.4mA	4mA	20 μ A	0.4mA
High-speed CMOS	4mA	4mA	1 μ A	1 μ A
68HC11	0.8mA	1.6mA	1 μ A	1 μ A

• fan-out – $\min(I_{OH}/I_{IH}, I_{OL}/I_{IL})$

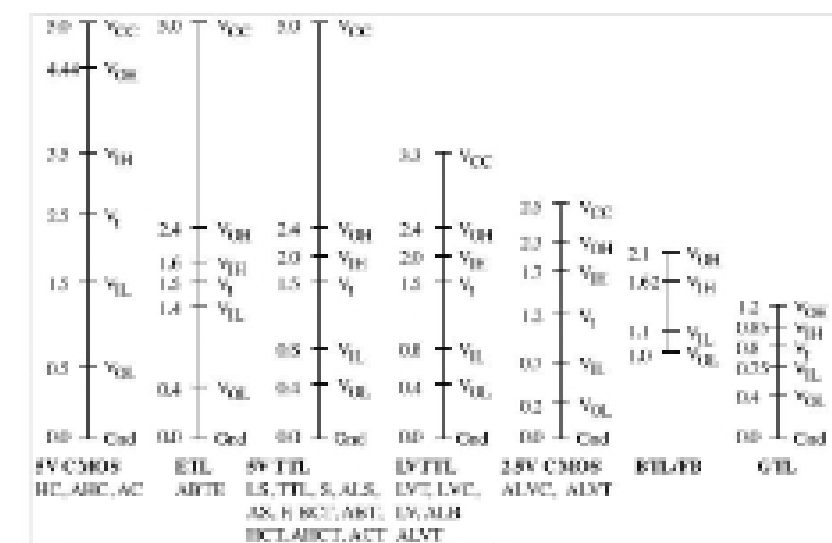
Slide 2

Fanout Requirements

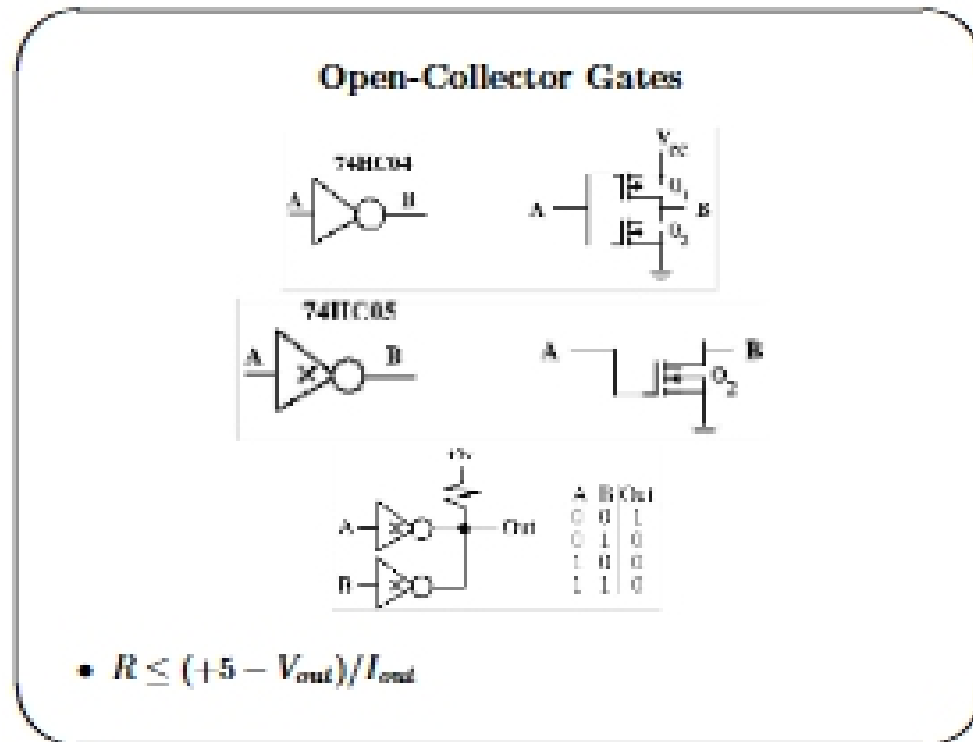


Slide 4

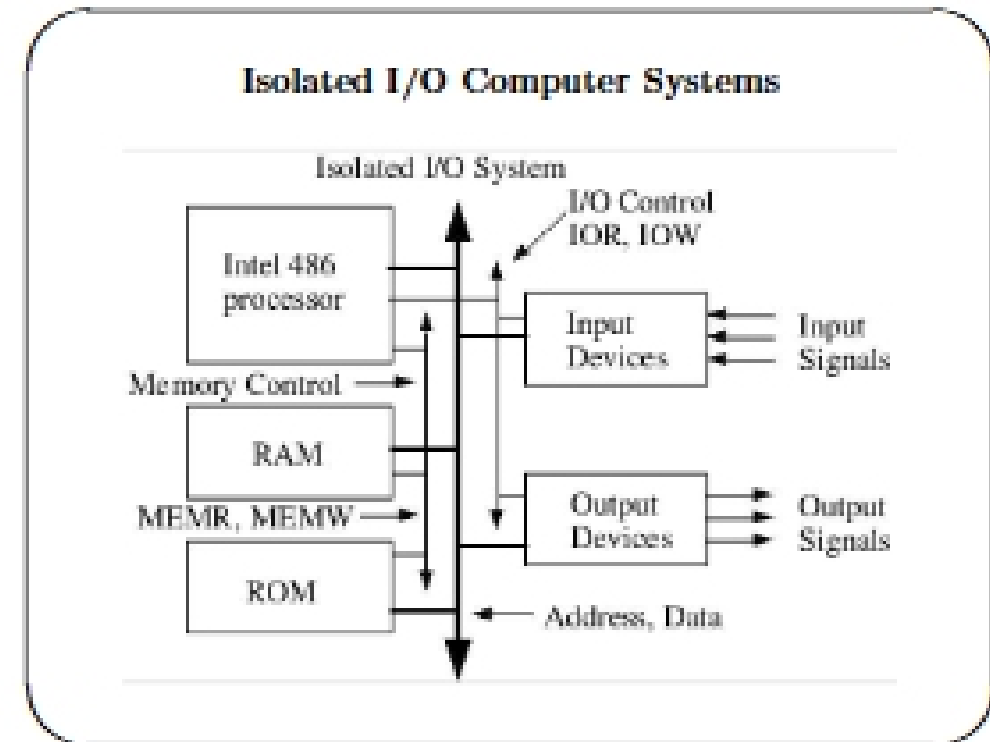
Voltage Thresholds



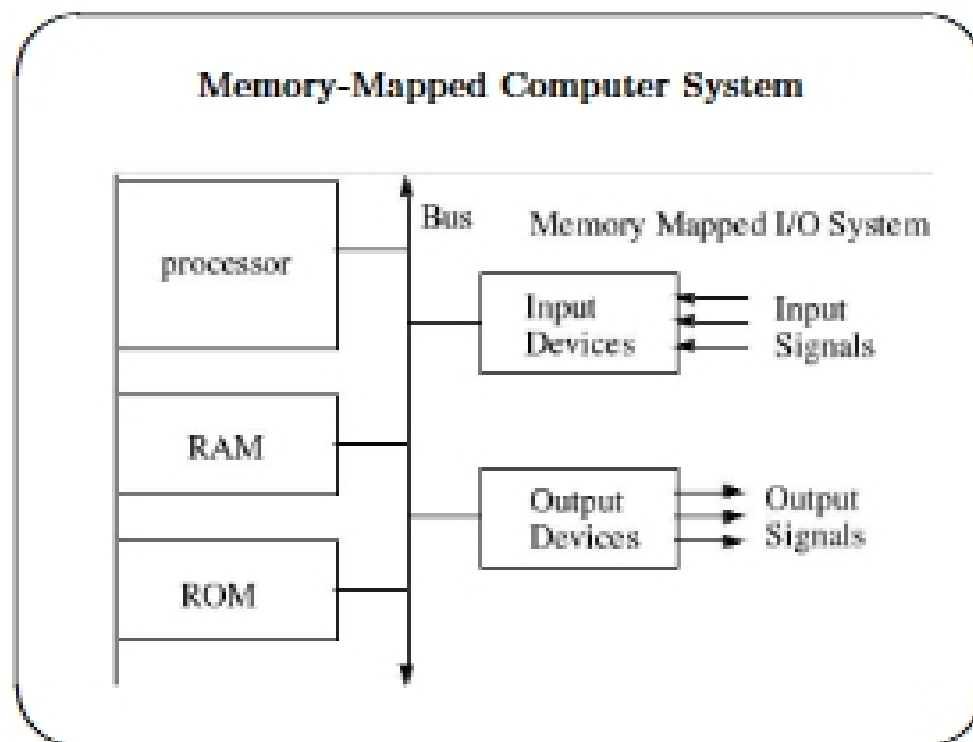
Slide 5



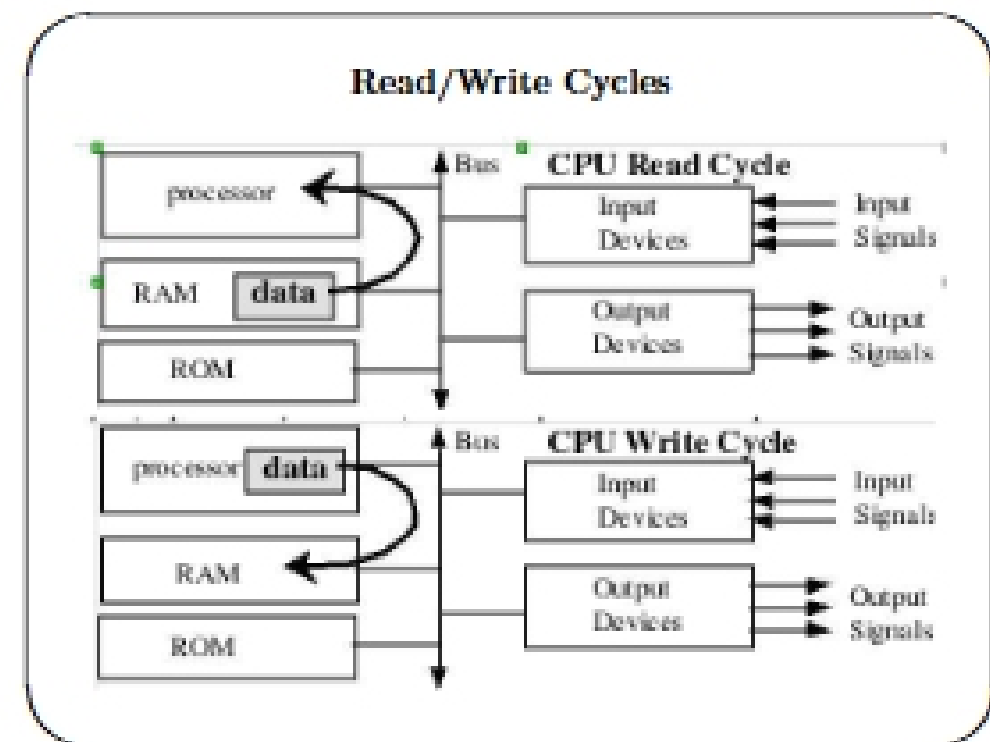
Slide 7



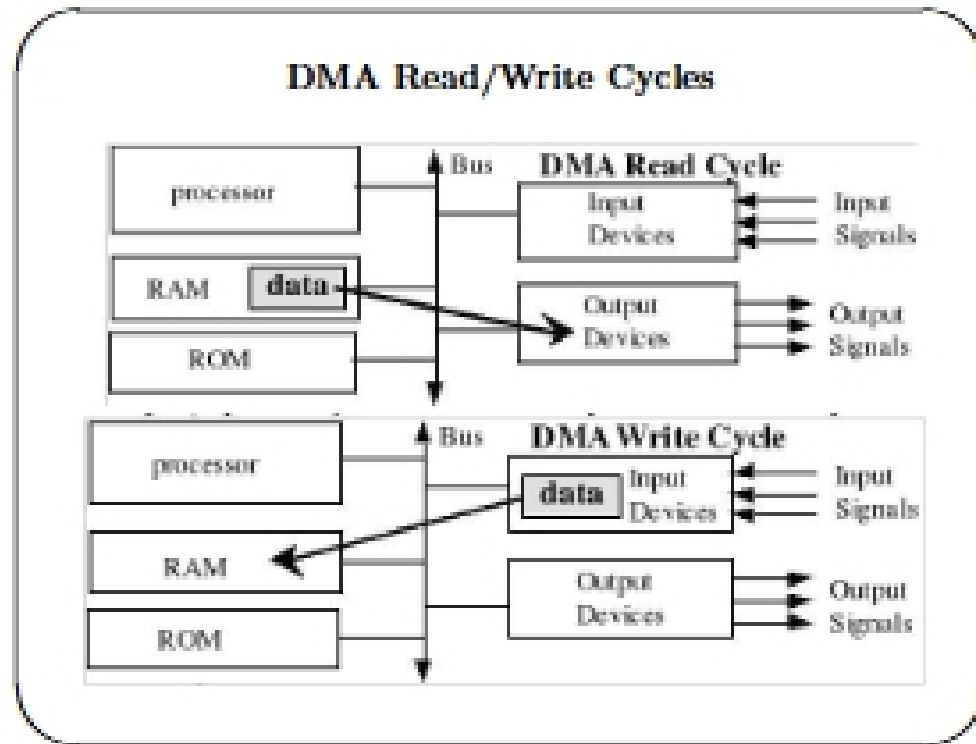
Slide 6



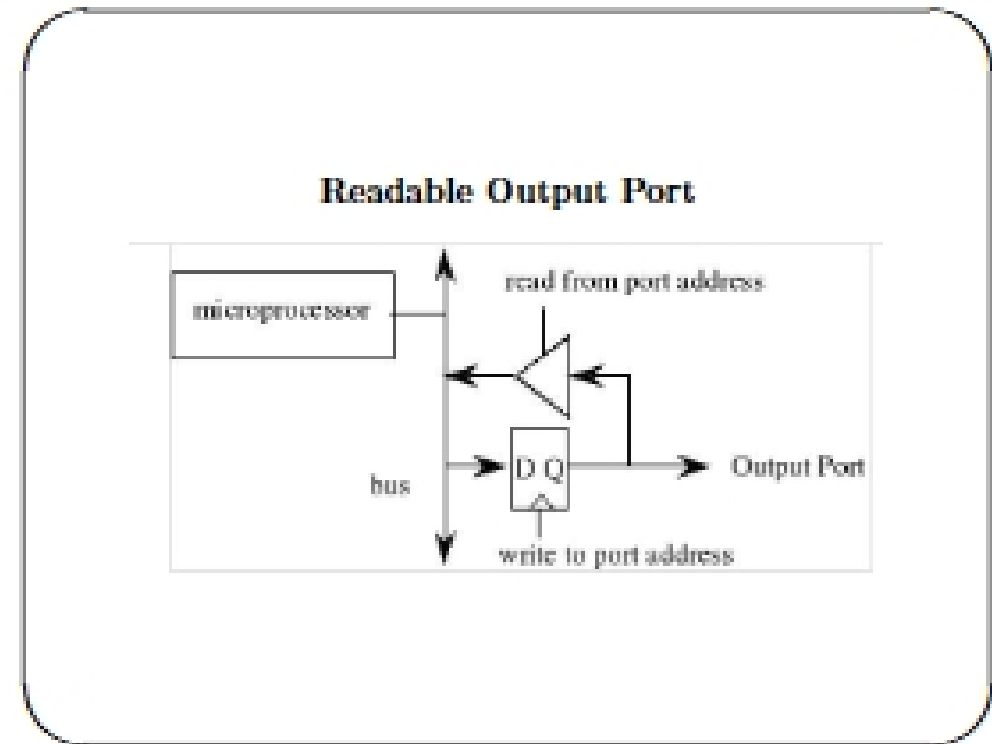
Slide 8



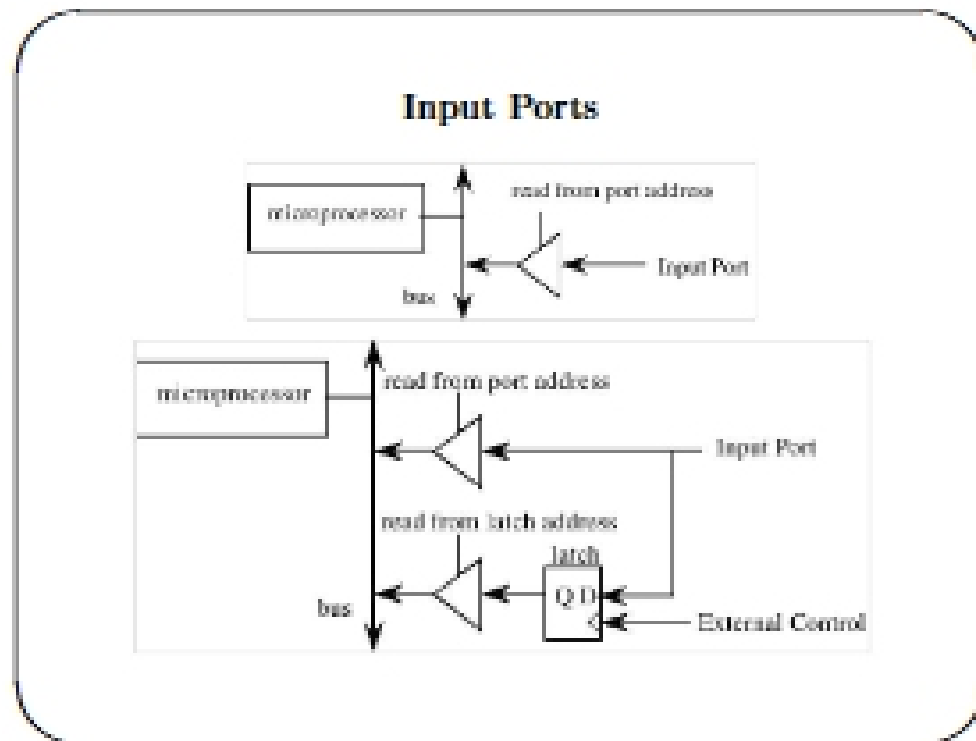
Slide 9



Slide 11



Slide 10



Slide 12

