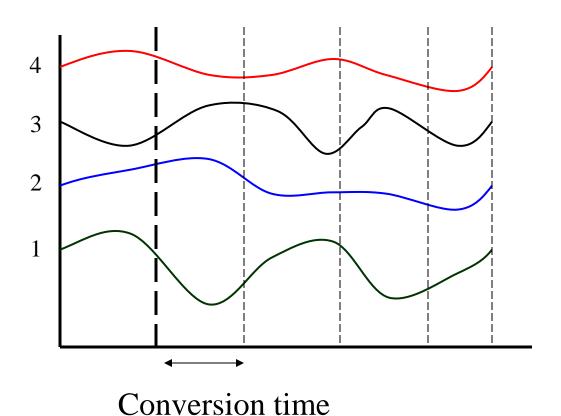
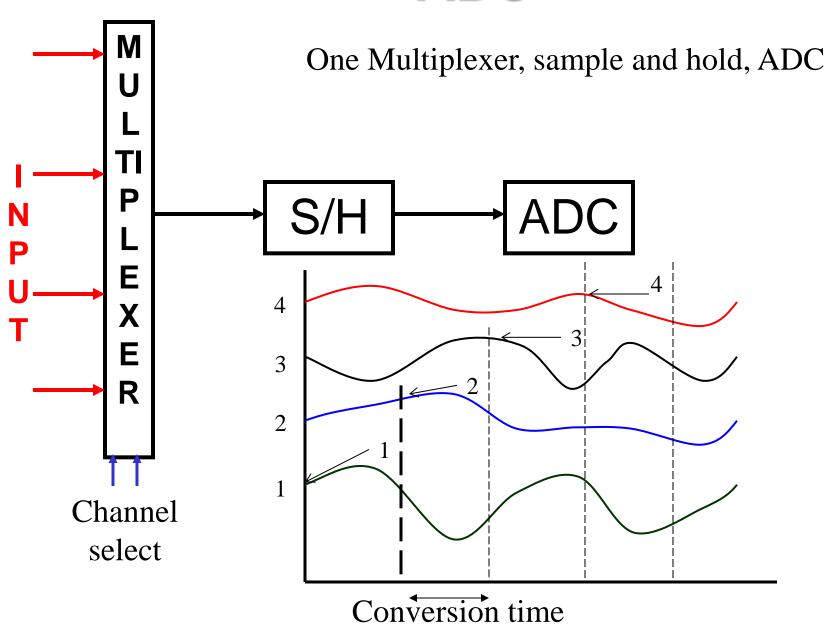
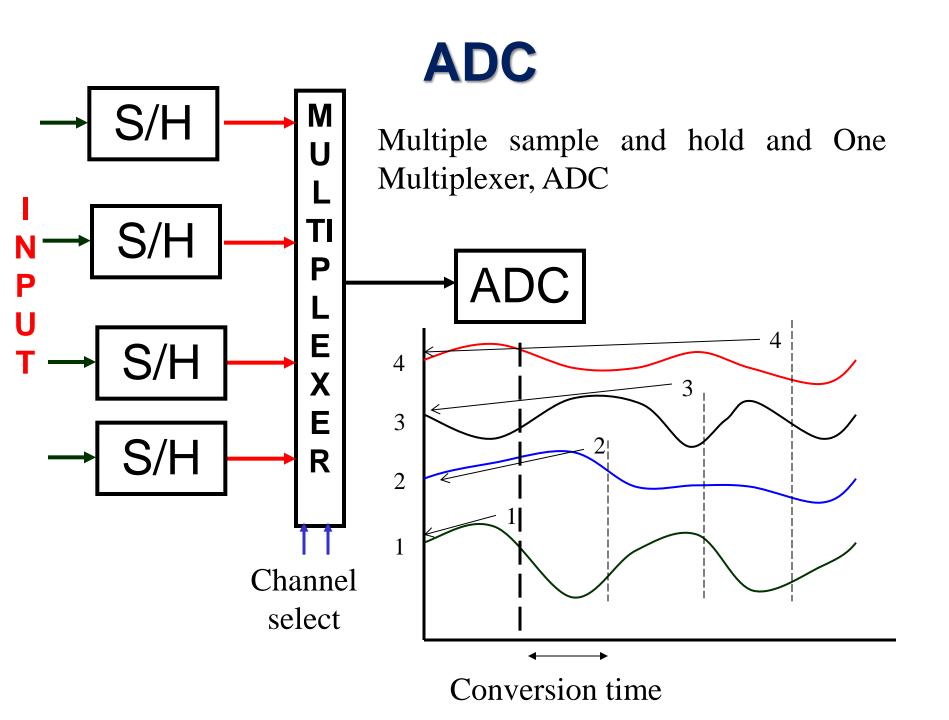
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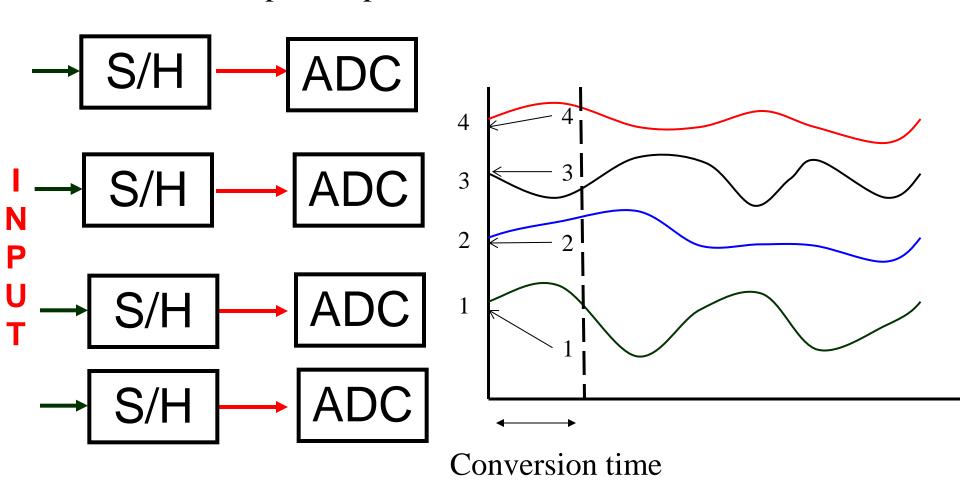
Timing for various ADCs



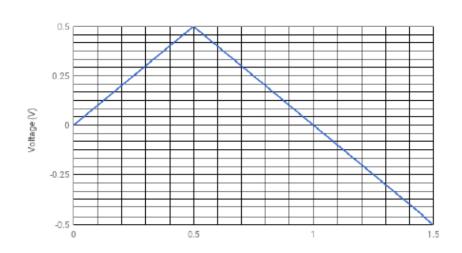




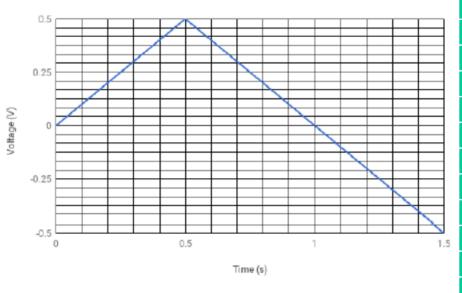
Multiple sample and hold and ADCs



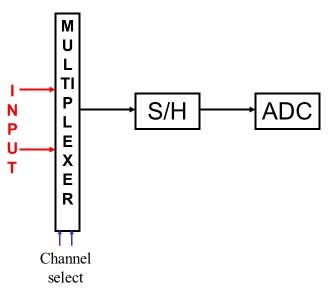
Q1) Figure given below shows a voltage changing with time. This voltage is given as input to a two channel analog to digital conversion system (at any given instant both input channel will same voltage. System a) one two channel multiplexer +One sample and hold + one ADC connected in series. System b) Two sample and hold + one two channel multiplexer + One ADC. Assume ADC conversion time as 0.1 sec , 0 digital value is for 0 volt and 500 digital value is equal to 0.5 V. Fill the values of ADC recorded at the given time instants. (6)

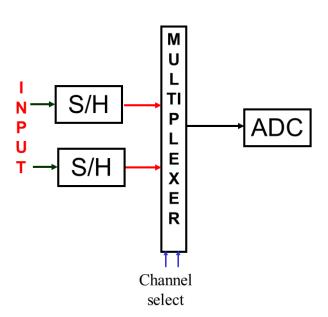


Time	Voltage	case-a		case-b	
		Channel1	Channel2	Channel1	Channel2
0	0				
0.1	0.1				
0.2	0.2				
0.3	0.3				
0.4	0.4				
0.5	0.5				
0.6	0.4				
0.7	0.3				
8.0	0.2				
0.9	0.1				
1	0				
1.1	-0.1				
1.2	-0.2				
1.3	-0.3				
1.4	-0.4				
1.5	-0.5				

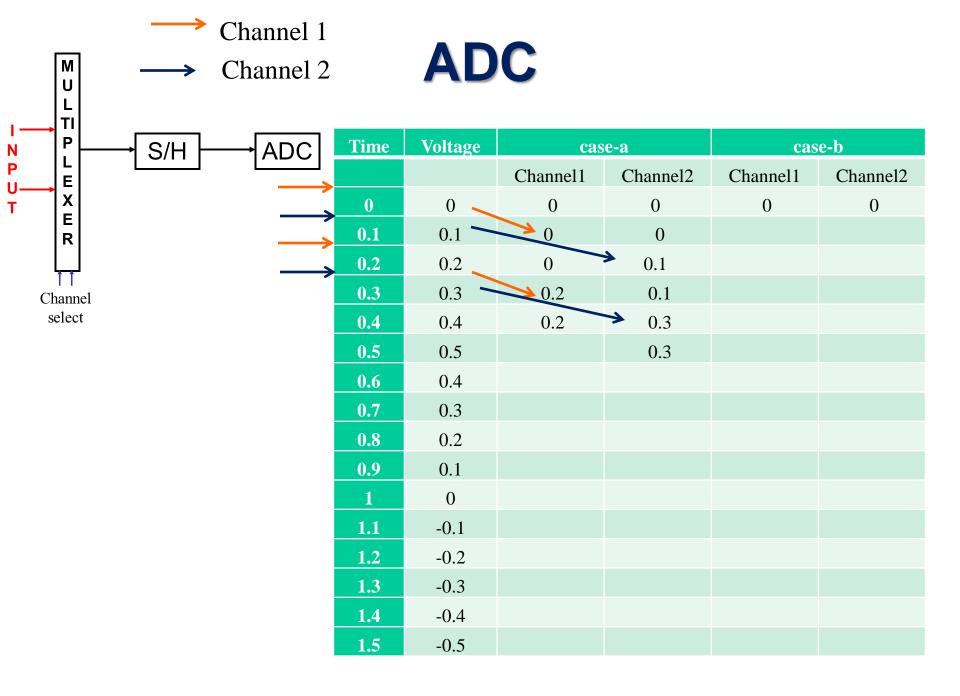


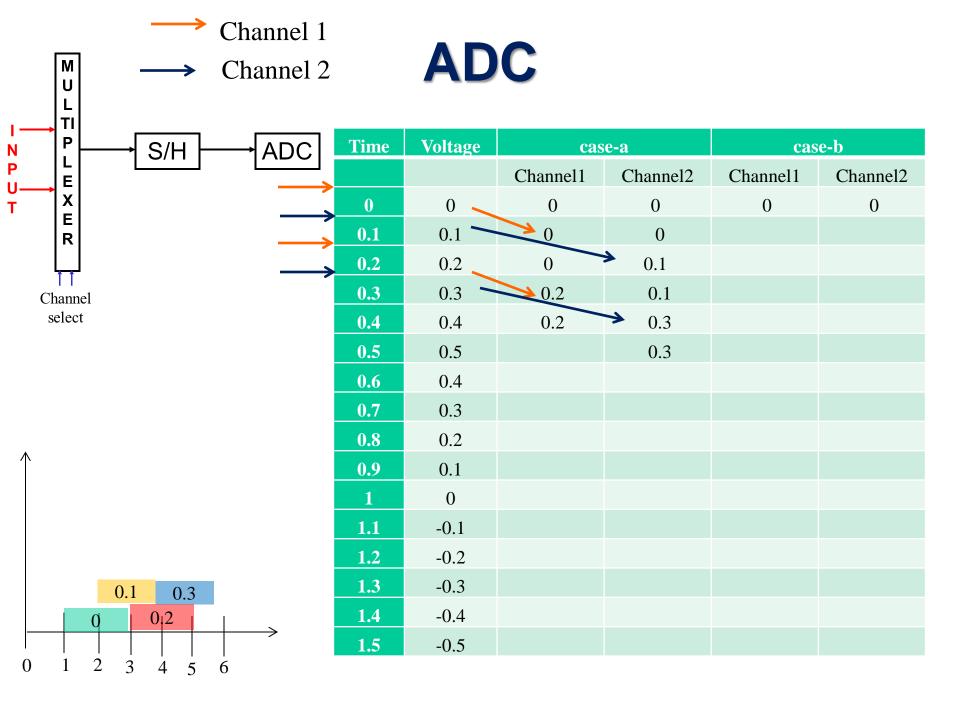
	X7.14				
	Volt				
Time	age	case-a		case-b	
		Channel1	Channel2	Channel1	Channel2
0	0				
0.1	0.1				
0.2	0.2				
0.3	0.3				
0.4	0.4				
0.5	0.5				
0.6	0.4				
0.7	0.3				
0.8	0.2				
0.9	0.1				
1	0				
1.1	-0.1				
1.2	-0.2				
1.3	-0.3				
1.4	-0.4				
1.5	-0.5				





Time	Voltage	case-a		case-b	
		Channel1	Channel2	Channel1	Channel2
0	0				
0.1	0.1				
0.2	0.2				
0.3	0.3				
0.4	0.4				
0.5	0.5				
0.6	0.4				
0.7	0.3				
0.8	0.2				
0.9	0.1				
1	0				
1.1	-0.1				
1.2	-0.2				
1.3	-0.3				
1.4	-0.4				
1.5	-0.5				





➤ S/H Channel 1 and Channel 2 М U ΤI S/H Ρ ADC Time Voltage case-b case-a E X Channel1 Channel2 Channel1 Channel2 S/H 0 0 0 0 0 0 E R 0.1 0 0.1 0.2 0.2 0 0 0.3 0 0.3 Channel select 0.2 0.4 0.4 0.2 0.4 0.2 0.5 0.5 0.4 0.4 0.4 0.6 0.3 0.7 0.4 0.2 0.8 0.9 0.1 0 1.1 -0.1 1.2 -0.2 1.3 -0.3 0 0.2 0.4 -0.4 1.4 0,2 0|4 0 1.5 -0.5 3