Hasan Mutlu – 1801042673 – CSE 232 HW 4

1.) Determine MUX size

3 operations: load, swap, clear

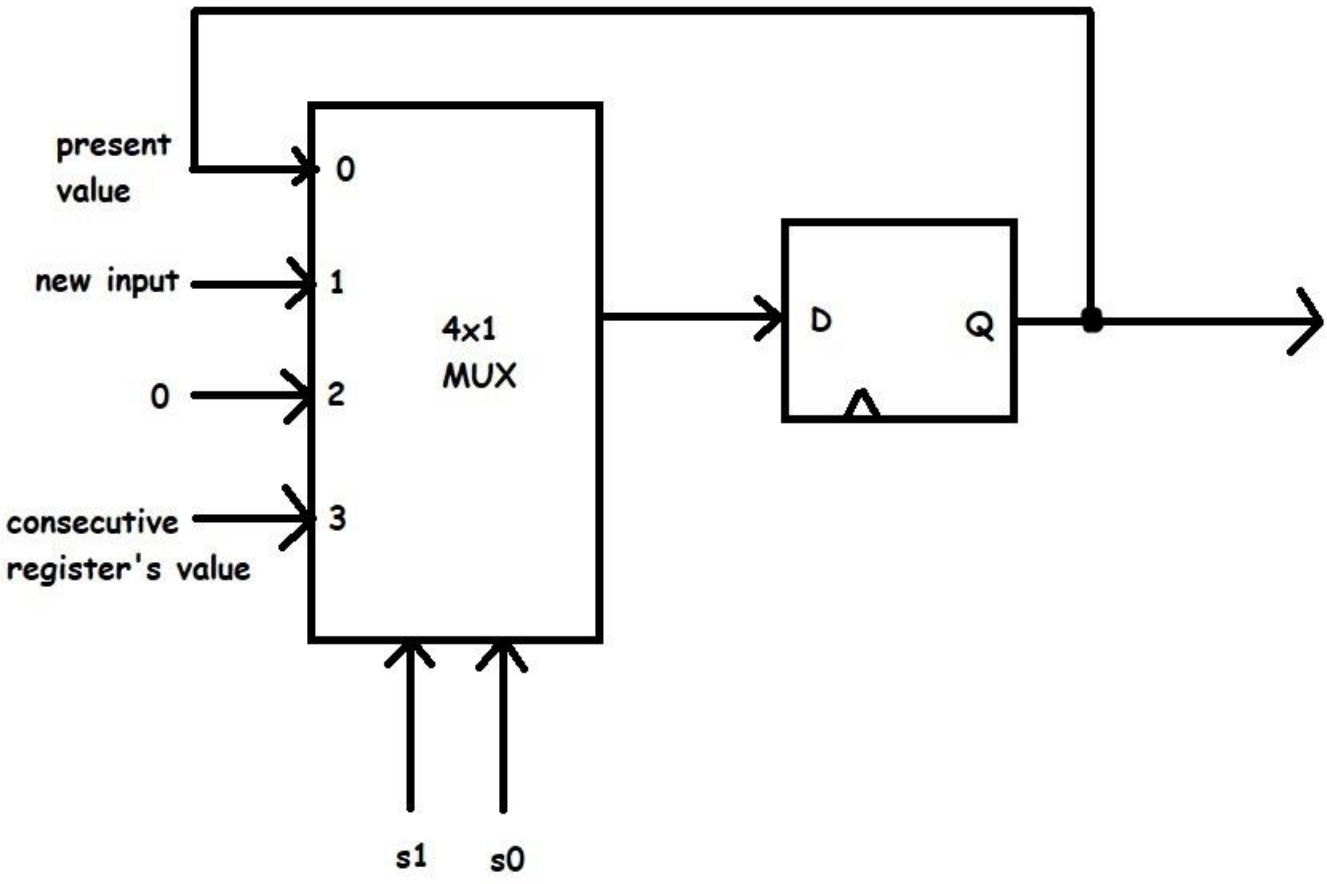
present value

->**Use 4x1 MUX**

2.) Create MUX Operation Table

S1	S0	Operation
0	**0**	Maintain Present Value
0	**1**	*Load* data to register
1	**0**	*Clear* Registers
1	**1**	*Swap* consecutive bits

3.) Connect MUX Inputs



4.) Map Control Lines

Inputs			Outputs		
cl	**ld**	**sw**	**S1**	**S0**	**Operation**
0	**0**	**0**	**0**	**0**	Maintain Present Value
0	**0**	**1**	**1**	**1**	*Swap* consecutive bits
0	**1**	**X**	**0**	**1**	*Load* data to register
1	**X**	**X**	**1**	**0**	*Clear* Registers

S0 = cl'.ld'.sw + cl'.ld

S1 = cl'.ld'.sw + cl

Entire Register Circuit with 6 Inputs: