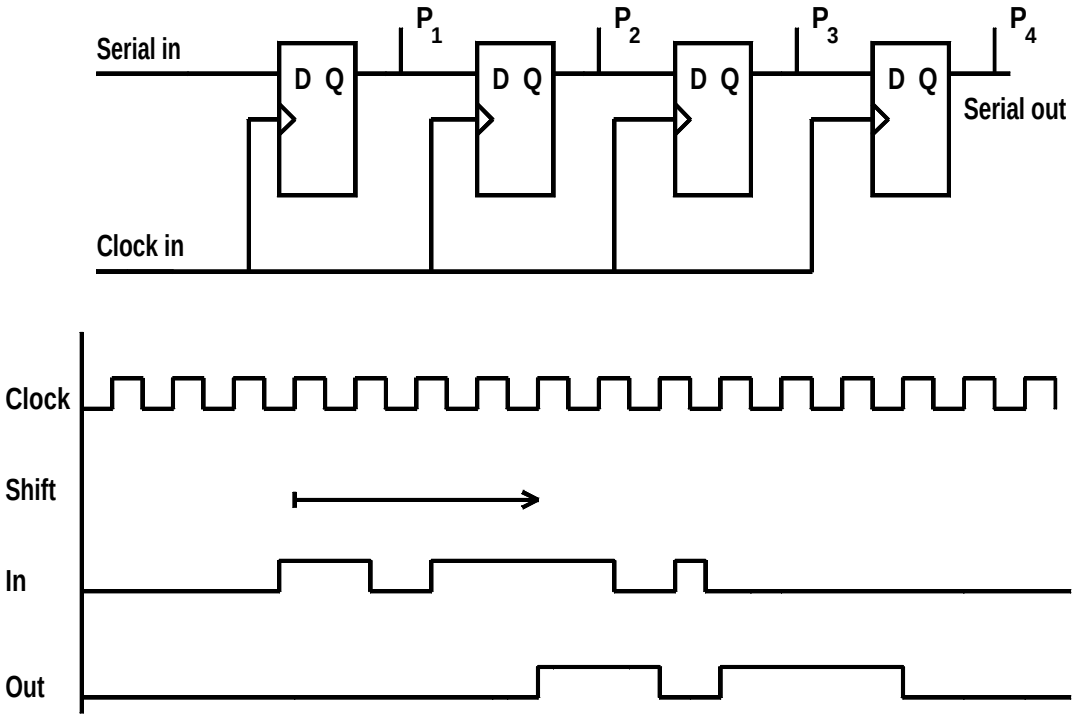
- A shift register is a line of single bit memory cells which are connected so that the output of one provides the input to the next in line.

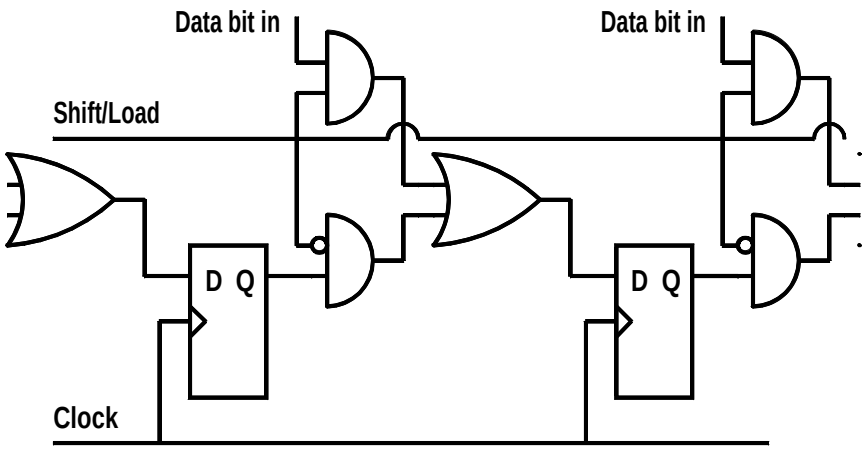
- An alternative name is a bucket brigade.

- A shift register moves the contents of each memory cell one bit to the left or right at each clock pulse.

- A shift register can operate with either a serial or parallel input and either a serial or parallel output.



SISO shift register and input and output waveforms.

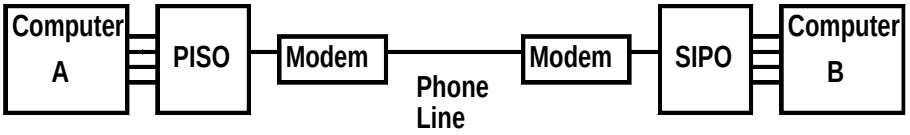


Single stage of a PISO shift register.

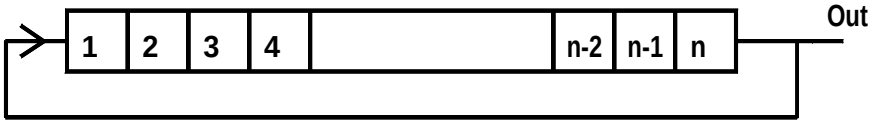
Inputs								
Mode Control	Clocks		Serial	Parallel				Q_A
	2(L)	1(R)		A	B	C	D	
H	H	X	X	X	X	X	X	Q_{A0}
H	↓	X	X	a	b	c	d	a
H	↓	X	X	Q_B	Q_C	Q_D	a	Q_{Bn}
L	L	H	X	X	X	X	X	Q_{A0}
L	X	↓	H	X	X	X	X	H
L	X	↓	L	X	X	X	X	H
↑	L	L	X	X	X	X	X	Q_{A0}
↓	L	L	X	X	X	X	X	Q_{A0}
↓	L	H	X	X	X	X	X	Q_{A0}
↑	H	L	X	X	X	X	X	Q_{A0}
↑	H	H	X	X	X	X	X	Q_{A0}

Function table for the 7495 4 bit shift register

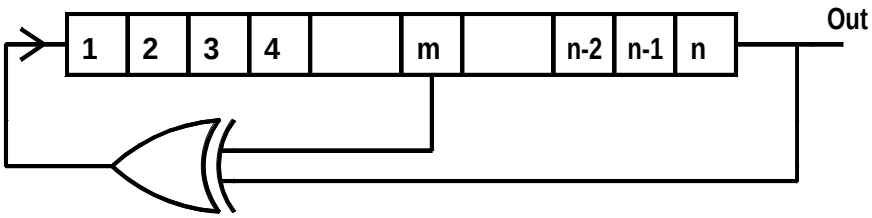
Unit 25 Shift Registers and pseudo random generators

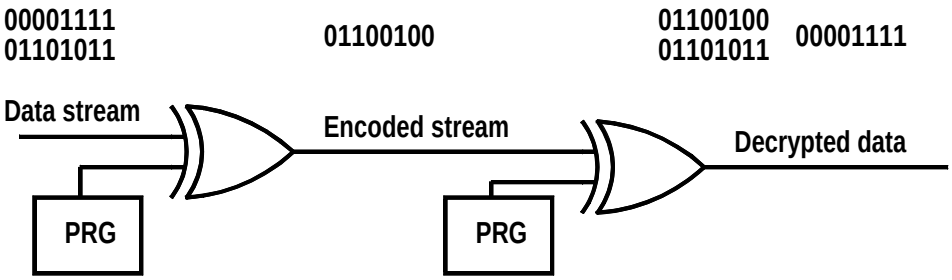


Unit 25 Shift Registers and pseudo random generators



Unit 25 Shift Registers and pseudo random generators





Encryption of data transmitted over a radio link.