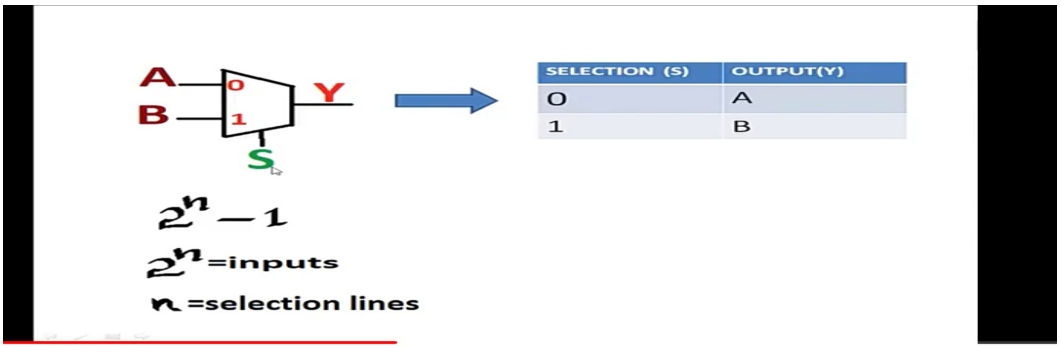
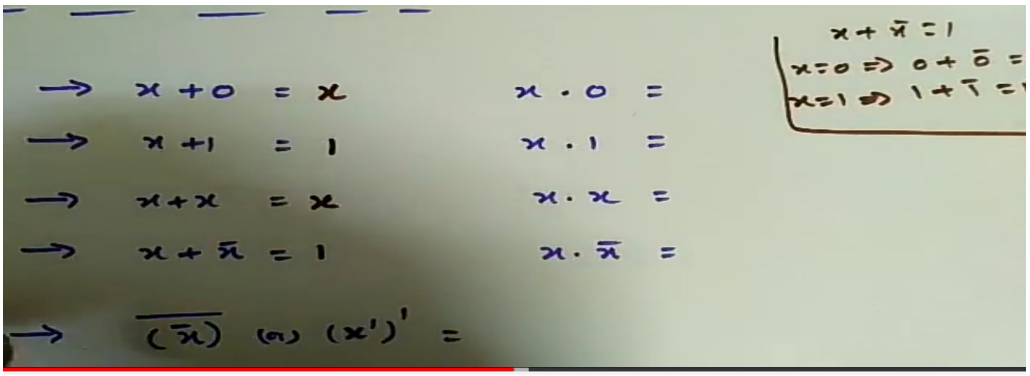
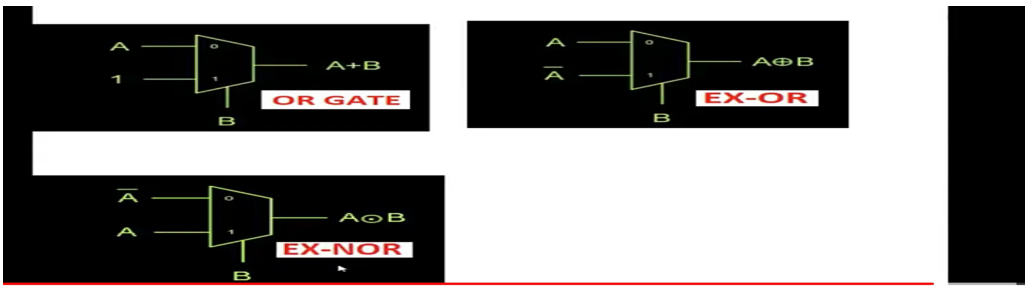
Date:	28-05-2020	Name:	Rajeshwari Gadagi
Course:	Logic design	USN:	4AL17EC076
Topic:	Boolean algebra,MUX.BCD to 7segment display	Semester and section	6th sem and B sec

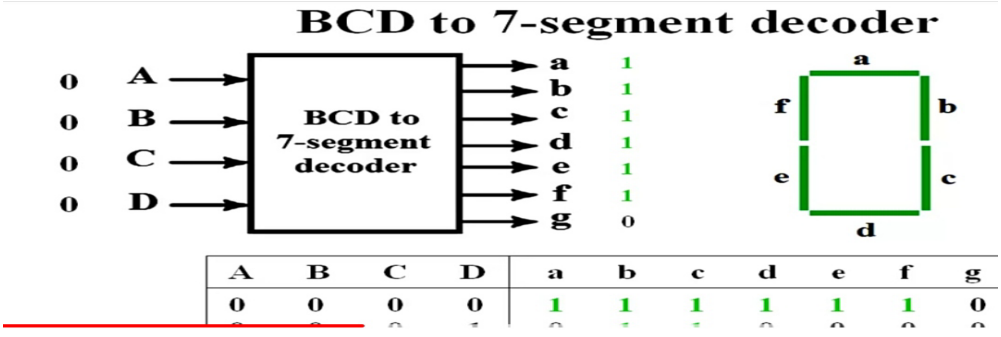


MUX to LOGIC gateS conversion





MUX to LOGIC gateS conversion



BCD to 7 segment decoder

Logic Gates

→ '0' or '1'

→ cost of the circuit & simple realization of a circuit

→ Boolean algebra is a system of mathematical logic

→ Two Binary Operators – OR (+) & AND (·)

→ Unary Operator – NOT

→ Boolean algebra –

$A+A=A$ $\quad A\cdot A=A$

$1+1=1$ $\quad 1\cdot 1=1$

→ $x+0=x$ $\quad x\cdot 0=0$

$x+1=1$ $\quad x\cdot 1=x$

$x+x=x$ $\quad x\cdot x=x$

$x+\bar{x}=1$ $\quad x\cdot\bar{x}=0$

→ $(\bar{\bar{x}})$ or $(x')'=x$

→ Identity Element –

The additive identity = '0'

The Multiplicative identity = '1'

→ Laws of Boolean Algebra :-

1. Commutative law :

$x+y=y+x$ $\quad x\cdot y=y\cdot x$

$A+B=B+A$ $\quad A\cdot B=B\cdot A$

2. Associative law :

$x+(y+z)=(x+y)+z$ $\quad x\cdot(y\cdot z)=(x\cdot y)\cdot z$

$A+(B+C)=(A+B)+C$ $\quad A\cdot(B\cdot C)=(A\cdot B)C$

3. Distributive law

$x(y+z)=xy+xz$

$A(B+C)=AB+AC$

$x+yz=(x+y)(x+z)$

$=xx+xz+xy+yz$

$=x+xz+xy+yz$

$=x(1+z+y)+yz=x+yz$

→ Theorems of Boolean Algebra

1. Absorption Theorem.

(a) $x+xy=x$ $\quad [A+AB=A]$

$x(1+y)$

$=x\cdot 1=x$

(b) $x+\bar{x}y=x+y$

$(x+\bar{x})(x+y)$

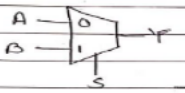
$=x+y$

$[A+\bar{A}B=A+B]$

MUX to logic gates

→ NAND, NOR – Universal gates

→ MUX and Decoders are called 'Universal logic'.



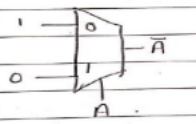
2^n-1 $\quad n$ – Selection lines

2^n – inputs

S	O/P
0	A
1	B

$Y=A\bar{S}+BS$

→ Inverter design

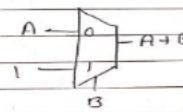


$Y=A\bar{S}+BS$

$Y=1\cdot\bar{A}+0\cdot A$

$Y=\bar{A}$

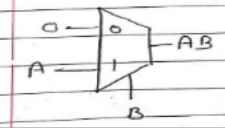
→ OR GATE



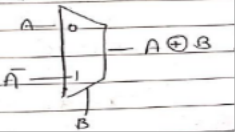
→ AND gate

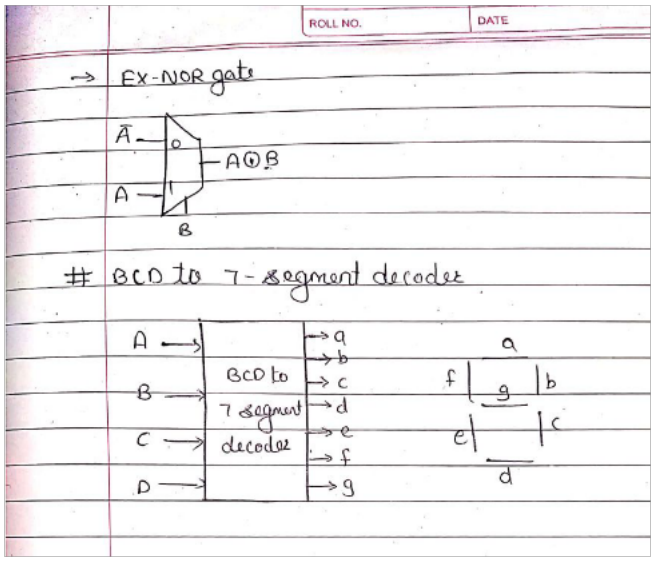
$Y=0\cdot\bar{B}+A\cdot B$

$Y=AB$



→ EX-OR gate





Date:	28-05-2020	Name:	Rajeshwari Gadagi
Course:	Python programming	USN:	4AL17EC076
Topic:	Application 5:build a desktop database application	Semester and section	6th sem and B sec

Day 9:-

★ Application 5 : Build a Desktop Database Application

→

```
from tkinter import *
window = Tk()
l1 = Label(window, text="Title")
l1.grid(row=0, column=0)

l2 = Label(window, text="Author")
l2.grid(row=0, column=2)

l3 = Label(window, text="year")
l3.grid(row=1, column=0)

l4 = Label(window, text="ISBN")
l4.grid(row=1, column=2)

title_text = StringVar()
e1 = Entry(window, textvariable=title_text)
e1.grid(row=0, column=1)

author_text = StringVar()
e2 = Entry(window, textvariable=author_text)
e2.grid(row=0, colum=3)

year_text = StringVar()
e3 = Entry(window, textvariable=year_text)
e3.grid(row=1, column=1)

isbn_text = StringVar()
e4 = Entry(window, textvariable=isbn_text)
e4.grid(row=1, colum=3)
```

```
list1 = Listbox(window, height=6, width=35)
list1.grid(row=2, column=0, rowspan=6, columnspan=2)

sb1 = Scrollbar(window)
sb1.grid(row=2, column=2, rowspan=6)

list1.configure(yscrollcommand=sb1.set)
sb1.configure(command=list1.yview)

b1 = Button(window, text="View all", width=12)
b1.grid(row=2, column=3)

b2 = Button(window, text="Search by entry", width=12)
b2.grid(row=3, column=3)

b3 = Button(window, text="Add Entry", width=12)
b3.grid(row=4, column=3)

b4 = Button(window, text="Update selected", width=12)
b4.grid(row=5, column=3)

b5 = Button(window, text="Delete selected", width=12)
b5.grid(row=6, column=3)

b6 = Button(window, text="close", width=12)
b6.grid(row=7, column=3)
window.mainloop()
```