



Hello,
World!

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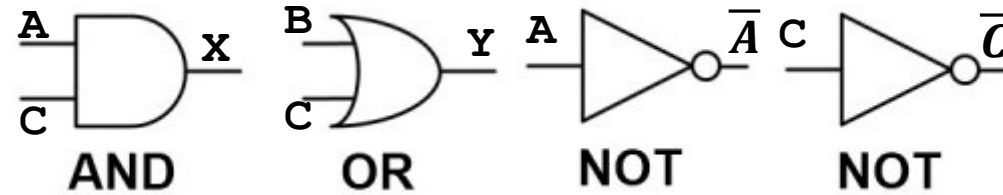
EMT1111: Logic and Problem Solving | Spring 2016 | Dr. Mendoza

LESSON 14: Boolean expression and Logic Gates (Labs)

FROM SOFTWARE TO PHYSICAL COMPUTING



Lab 1 (truth table)



A	B	C	X	Y	\bar{A}	\bar{C}
0	0	0				
0	0	1				
0	1	0				
0	1	1				
1	0	0				
1	0	1				
1	1	0				
1	1	1				

How are logic gates used

Imagine that you have **switch that turns an alarm on and off**.

You also have a **sensor that turns a switch on when a door is open**.

During the **night**, you want to turn the **alarm switch on** and **make the alarm sound if the door is open**.

During the **day**, the **alarm is off** and the **alarm does not sound even if the door is open**.

<http://www.neuroproductions.be/logic-lab/>

How about if we have a front and a back door?

Imagine that you have **switch that turns an alarm on and off**.

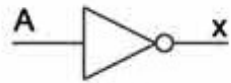






You also have a **sensor in each door that turns a switch on when a door is open**.

During the **night**, you want to turn the **alarm switch on** and **make the alarm sound if any of the doors are open**.

During the **day**, the **alarm is off** and the **alarm does not sound even if a door is open**.

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More logic gates

Name	NOT	AND	NAND	OR	NOR	XOR	XNOR																																																																																																
Alg. Expr.	\bar{A}	AB	\overline{AB}	$A+B$	$\overline{A+B}$	$A \oplus B$	$\overline{A \oplus B}$																																																																																																
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Exam review

```
1 def printinfo(name, age):
2     """This prints a passed info into this function"""
3     print("Name: ", name)
4     print("Age: ", age)
5     old = False
6     if age > 35:
7         print("You are old", name)
8         old = True
9     else:
10        print("You are still young", name)
11    return old
12
13 myname = "miki"
14 myage = 40
15 i_am_old = printinfo(myname, myage)
16
17 yourname = "mary" #This is the other person
18 yourage = 30
19 you_are_old = printinfo(yourname, yourage)
20
21 if i_am_old == you_are_old and myname != yourname:
22     print("This guys are a good match:", myname, "and", yourname)
23 else:
24     print("This guys are not a good match:", myname, "and", yourname)
25
26 print("Thanks for using this service.")
```