MODULE FOUR: BOOLEAN LOGIC

1. Boolean variables ("boolean" in java), are variables that store a value of either 1 or 0, also denoted as True or False
2. Boolean operators: AND, OR, NOT, XOR.
   a. AND (&&)

P	Q	P AND Q
F	F	F
F	T	F
T	F	F
T	T	T

   b. OR (||)

P	Q	P OR Q
F	F	F
F	T	T
T	F	T
T	T	T

   c. NOT (!)

P	NOT P
F	T
T	F

   d. XOR (^)

P	Q	P XOR Q
F	F	F
F	T	T
T	F	T
T	T	F

CHALLENGE ONE:

1. What is **a AND 0**?
2. **a AND 1**?
3. **a OR 0**?
4. **a OR 1**?

let A be "it is summer"
let B be "it is sunny"

CHALLENGE TWO:

1. Suppose **NOT(a) AND NOT(b)** is true, then what is also true in terms of AND?
     NOT(a or b) is equivalent to NOT(a) AND NOT(b)
2. Suppose **a OR b** is true, then what is also true in terms of AND?
     A or B is equivalent to NOT((NOT(a) AND NOT(b))