Conditionals

Week 3 in Snap!

Predicates

- Report <u>boolean</u> values
  - Can only be either true or false
- Predicates are shaped like hexagons
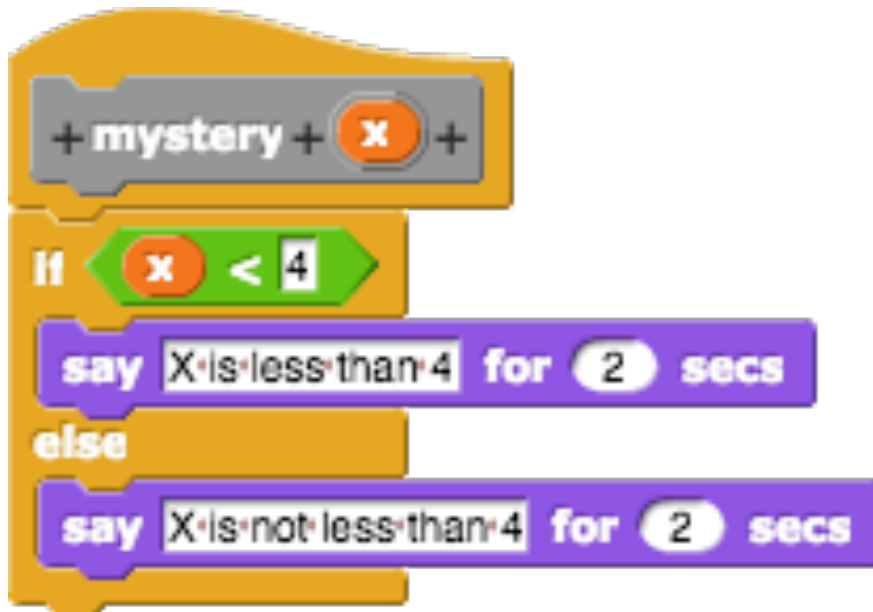
Reports true

Reports false

Predicates

- We use predicates as conditionals in if-else statements
  - "if" something is true, "then" do something
  - "else" do some other thing

Modulus

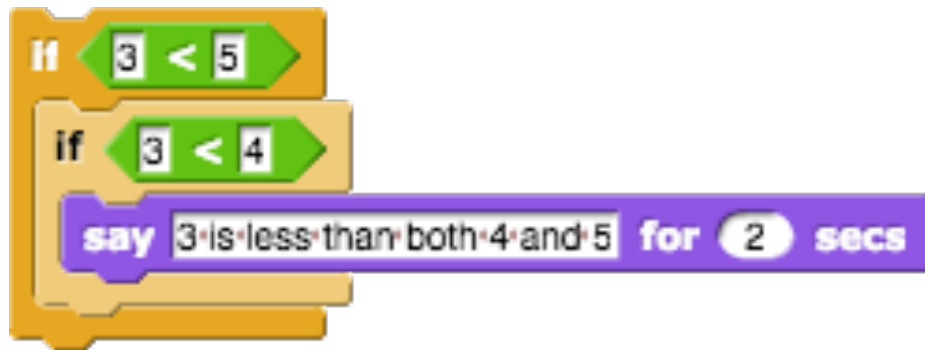- Operation that reports only the remainder of a division operation

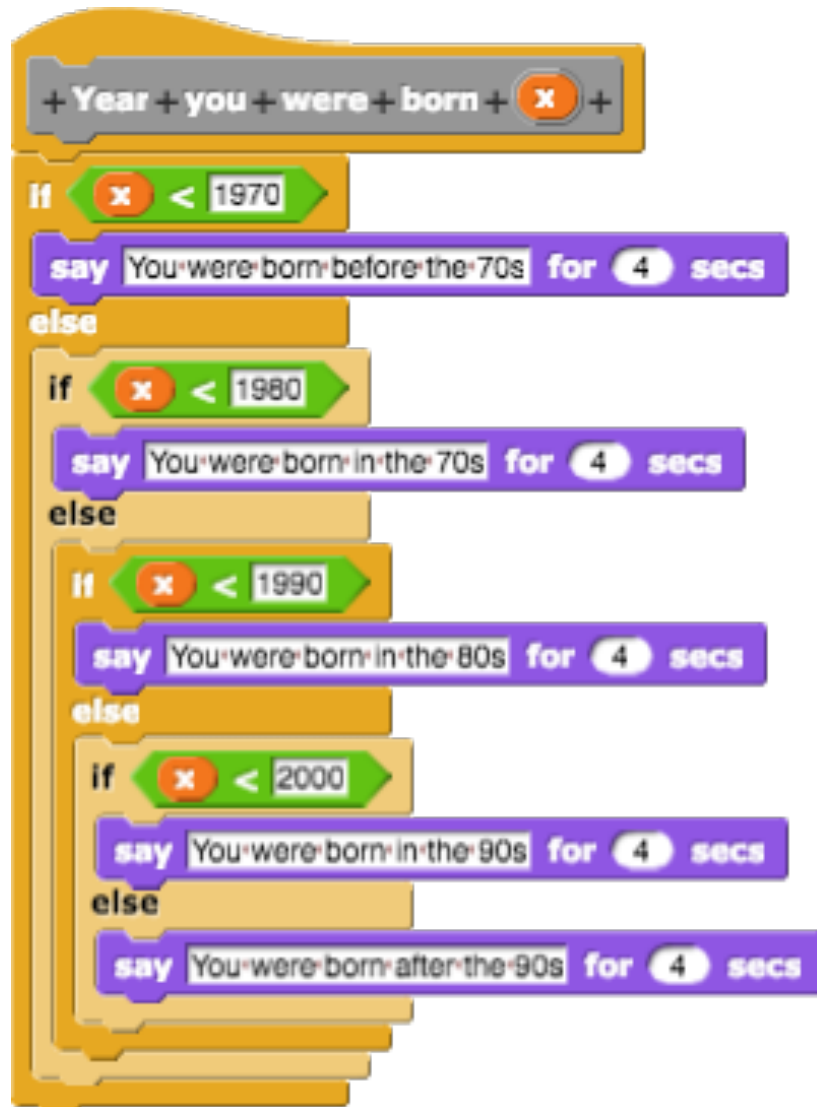Reports 1   `7 mod 3`

Reports 4   `10 mod 6`

Reports 0   `4 mod 2`   because 4 is divisible by 2

Nested If-Else Statements

- If statements can go inside of if statements

Another Example

A. "z is divisible by 2" is said

B. "z is divisible by 3" is said

C. "z is divisible by 4" is said

D. "z is not divisible by 2, 3, or 4" is said

Script Variables

- A variable is something that holds a value
  - In the previous example, "z" was a variable
- Suppose you want to add a variable to your script without it being a parameter
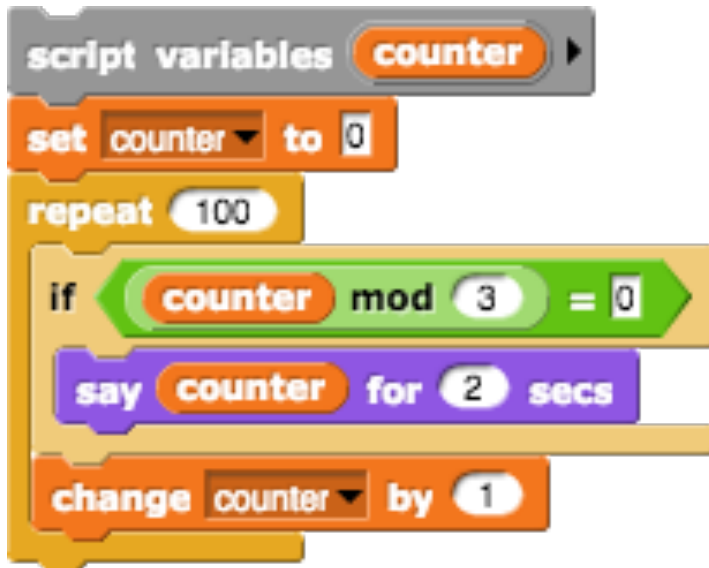
this script says all
multiples of 3 between 0 and
100

Another Example

Another Example

Truth Tables - Recap

A	B	A and B
F	F	F
F	T	F
T	F	F
T	T	T

A	B	A or B
F	F	F
F	T	T
T	F	T
T	T	T

A	not A
F	T
T	F

Boolean Expressions

- A boolean value is either true or false
- What if we want to evaluate many boolean expressions?

"and" reports true if <u>both</u> predicates are true

"or" reports true if <u>one</u> or <u>both</u> predicates are true

"not" reports the opposite value of its predicate

More Examples

A. True
B. False
C. Something else

A. True
B. False
C. Something else

Another Example

- This block says "a is divisible by 4 and 5 (a is divisible by 20)" if the condition is met
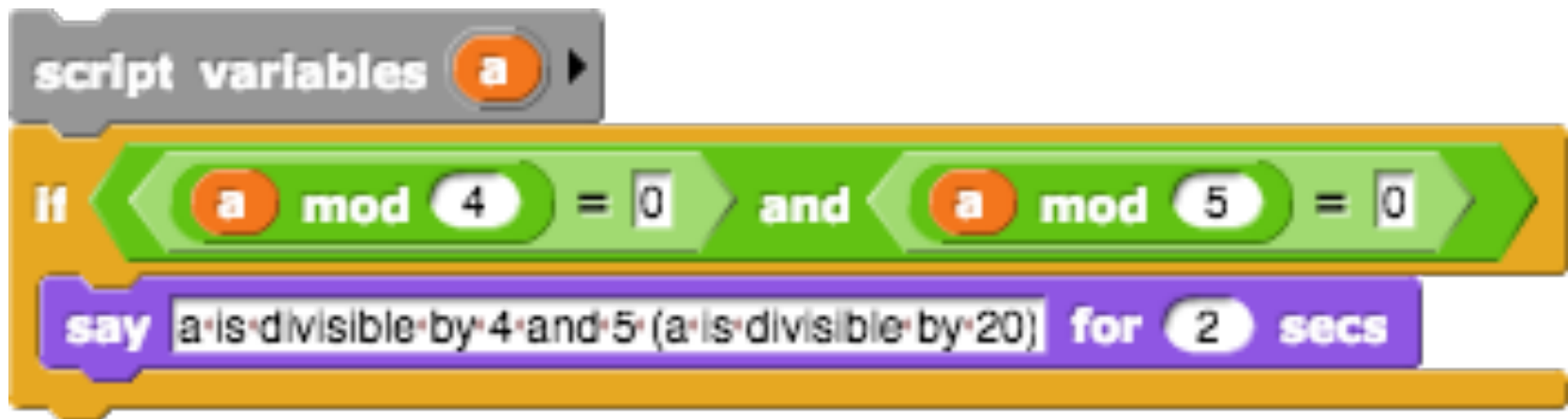
What does this script say?

A. true

B. false

C. inCalifornia

Custom Operators

- We may want a custom operator that reports a value, such as the square of 2 numbers

Lab 3 Tasks

- Traffic Signal block
- Letter Grade block
- State of Water block
- In Between block
- Greater Than/Equal block
- (You don't have to do weekend/weekday blocks)
- Number guessing game
  - 6 Challenges