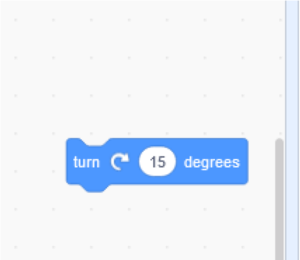
What is a script

July 24, 2022

Effects

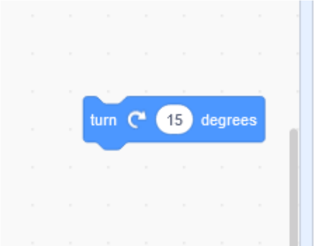
- You have seen commands

A command



turn ↻ 15 degrees

A command



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Effects

- *Commands*

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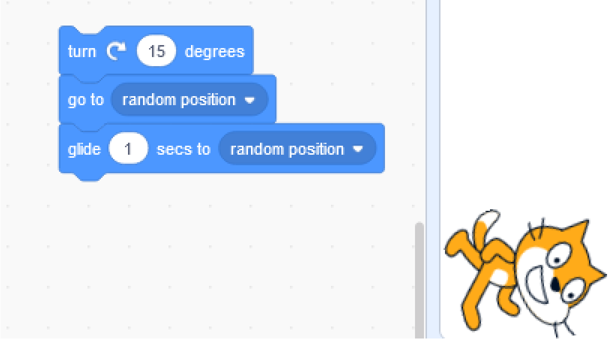
- *Scripts* are (at a basic level) lists of commands

A script



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go to random position ▾
glide 1 secs to random position ▾
```

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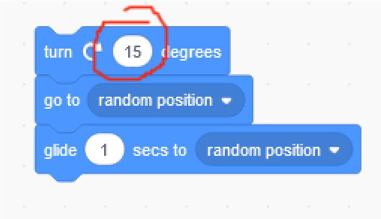

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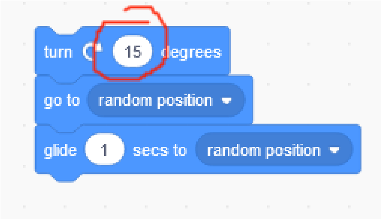

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- Such an input is called a *parameter*

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- Strings are simply text (lists of characters)
- Integers indicate quantities
  - How much, how far, how often?
- Booleans indicate truth or success
  - Is $1 + 2 == 3$, is the password correct, should this command be run?

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- Math: $\wedge$, $\vee$. Python: `and`, `or`. Java: `&&`, `||`.

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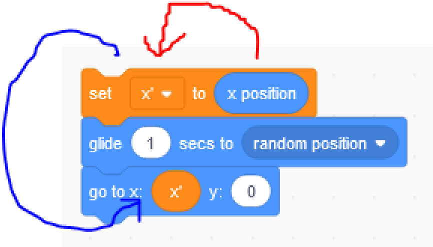

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set x' to x position
glide 1 secs to random position
go to x: x' y: 0
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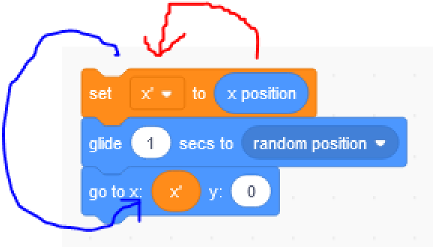

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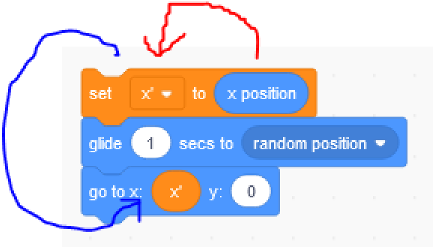

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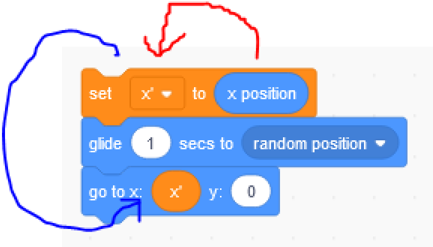

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- What does `x := 0; x := x + 1` do?

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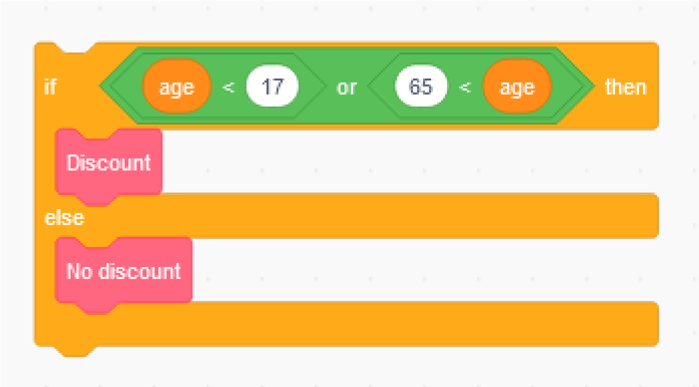
- alternative: *conditional*

A conditional



```
if age < 17 or 65 < age then
  Discount
else
  No discount
```

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- A program needs to *interact* with something external
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  - Generate a random number
  - Get the measurements of the screen

Practical

- You are now ready to
  - test codewords (insecurely)
  - use bounding boxes
- in Scratch

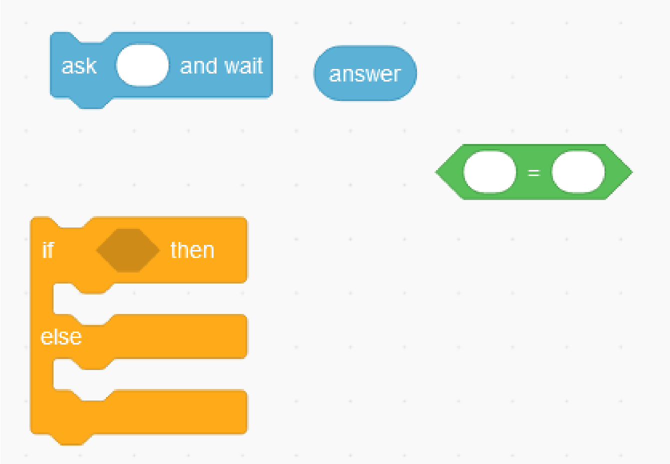
Codewords

Think of a (not very) secret word

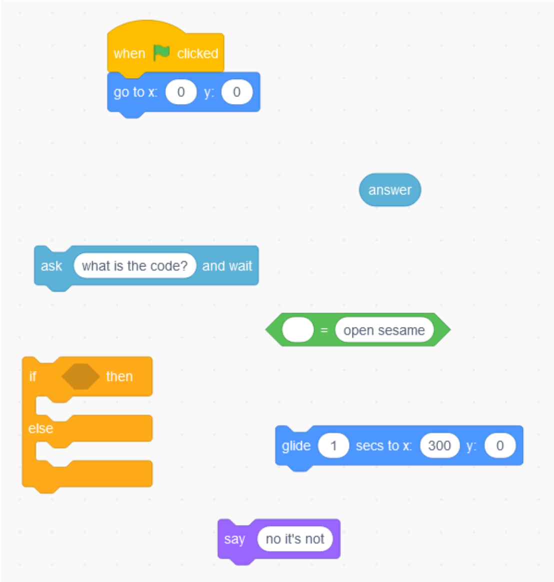
Write a program that

- asks the user for the codeword (“what is the codeword?”)
- tests if the input is equal to the the secret word
- if it is
  - perform an effect to indicate success
- otherwise
  - perform an effect to indicate failure

Hint 1



Hint 2



when 🏁 clicked

go to x: 0 y: 0

answer

ask what is the code? and wait

( ) = open sesame

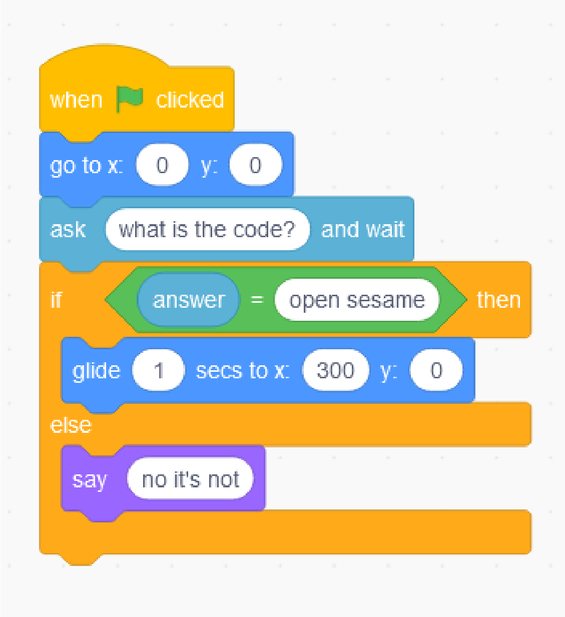
if ◆ then

else

glide 1 secs to x: 300 y: 0

say no it's not

Sample solution



```
when 🏁 clicked
go to x: 0 y: 0
ask what is the code? and wait
if answer = open sesame then
    glide 1 secs to x: 300 y: 0
else
    say no it's not
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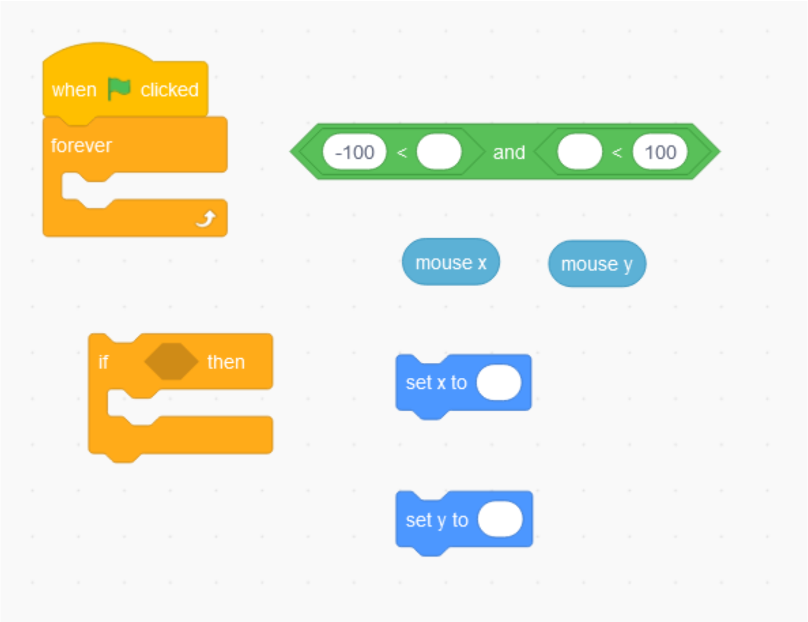
Why should you never do this with an actual secret?

Bounding boxes

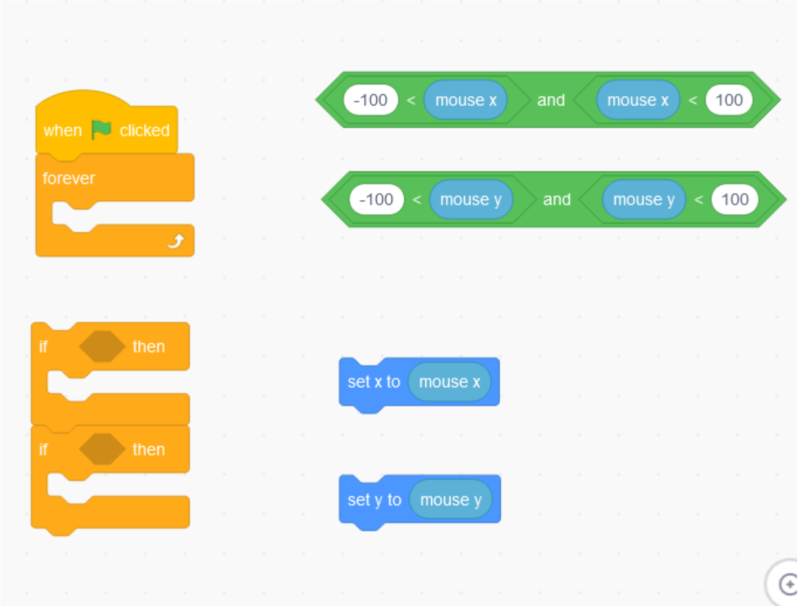
Write a program that

- moves the sprite to the mouse of the user
- except if the mouse is outside of a smaller rectangle on the screen

Hint 1


when clicked
forever
-100 < and < 100
mouse x
mouse y
if then
set x to
set y to

Hint 2



```
when ⚑ clicked
forever

if  then

if  then

-100 < mouse x and mouse x < 100

-100 < mouse y and mouse y < 100

set x to mouse x

set y to mouse y
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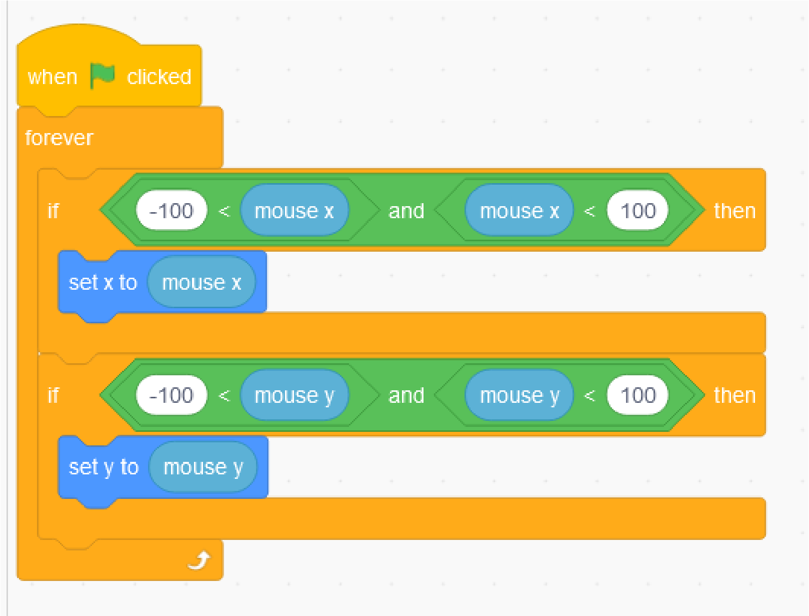

```
when 🏁 clicked
forever
    if (-100) < (mouse x) and (mouse x) < (100) then
        set x to (mouse x)
    if (-100) < (mouse y) and (mouse y) < (100) then
        set y to (mouse y)
    ↺
```

A bug

Can you find the “bug”?