

The Scratch logo is rendered in a stylized, bubbly font. The letters are orange with a white fill and a thick blue outline. The background is a gradient of blue, with a decorative circuit board pattern of white lines and circles on the left side.

SCRATCH

05. CONDITIONAL STATEMENTS

M1U1P5 COMPUTER SCIENCE

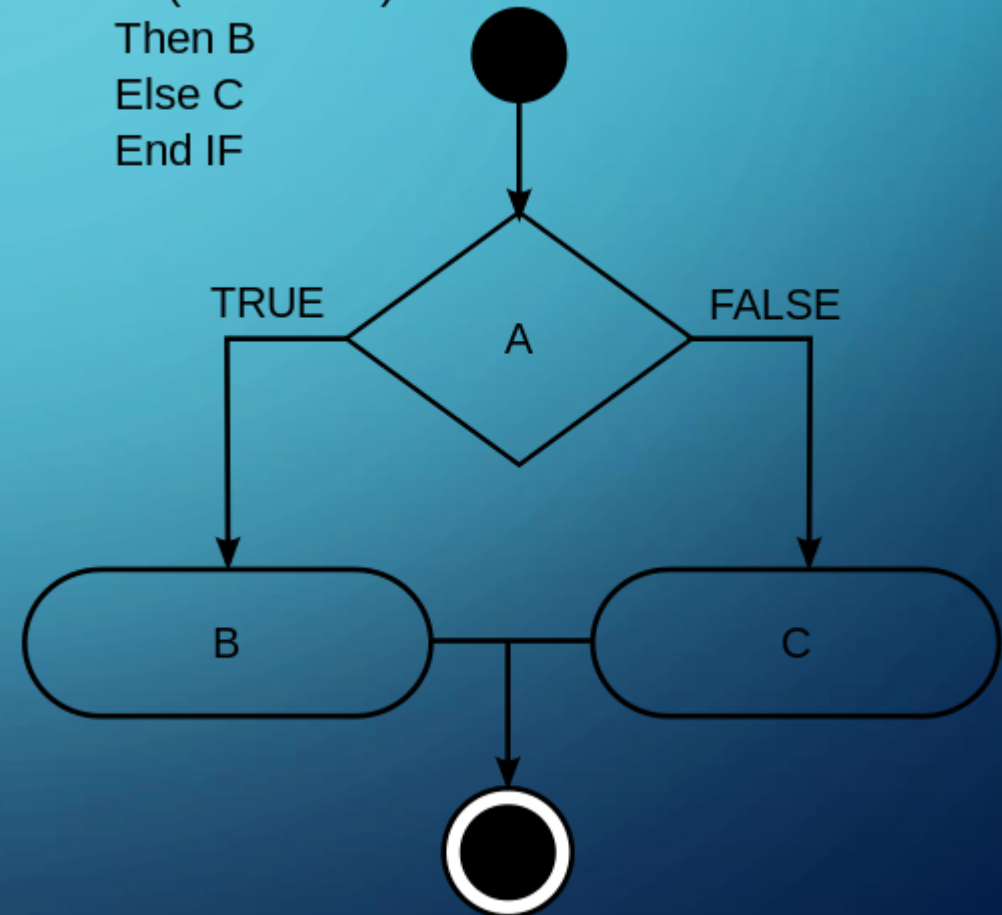
The background is a dark blue gradient. In the corners, there are white line-art illustrations of circuit boards or neural networks, consisting of lines and small circles.

WHAT ARE CONDITIONAL STATEMENTS?

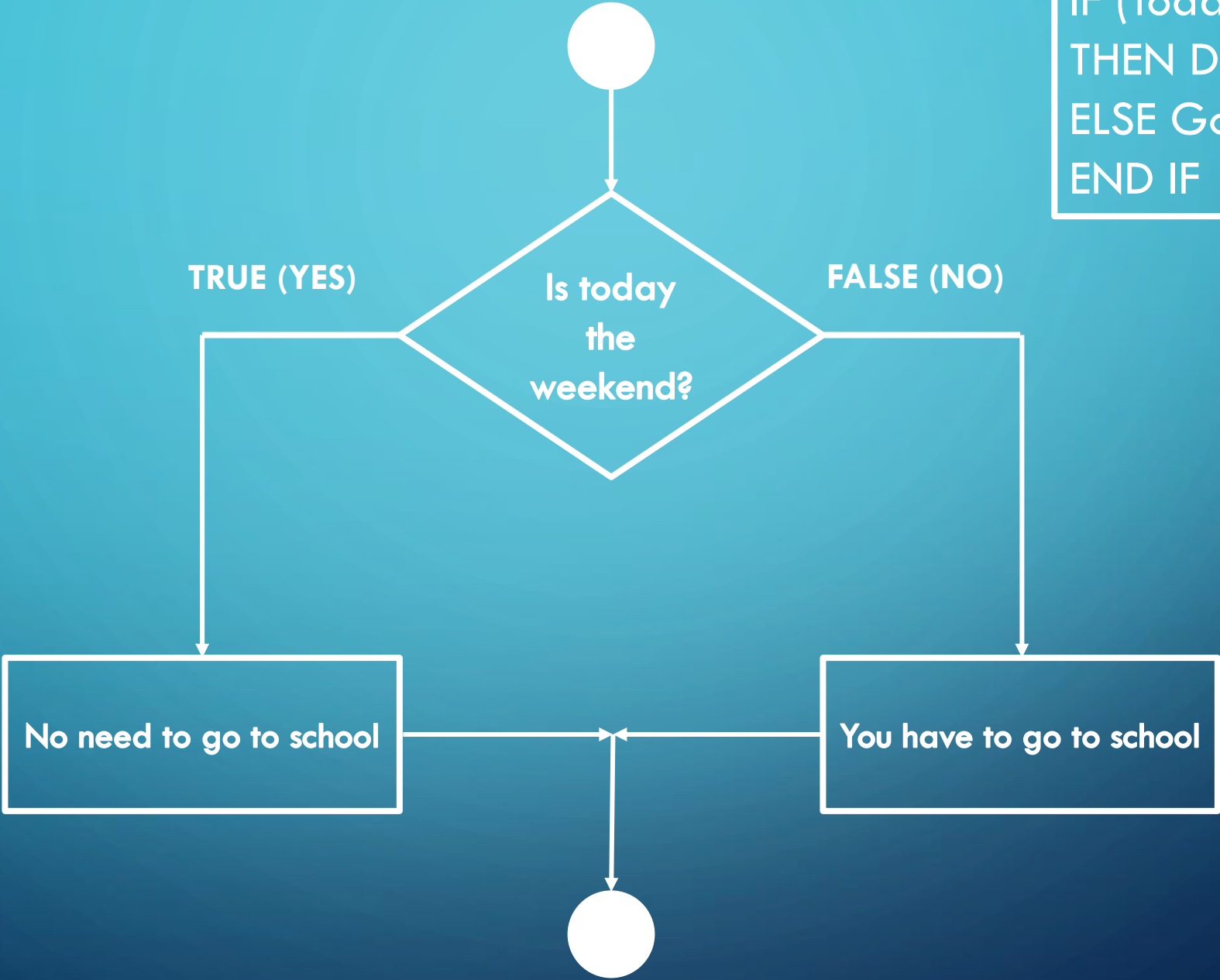
CONDITIONAL STATEMENTS

- A conditional statement is a feature of a programming language, which performs different actions depending on whether the specified condition is true or false

```
IF (A = TRUE)  
Then B  
Else C  
End IF
```

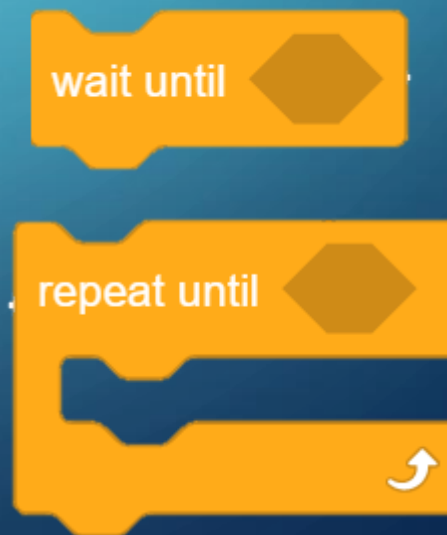


```
IF (Today is weekend)
THEN Don't go to school
ELSE Go to school
END IF
```



CONDITIONS

- These blocks are used for conditions



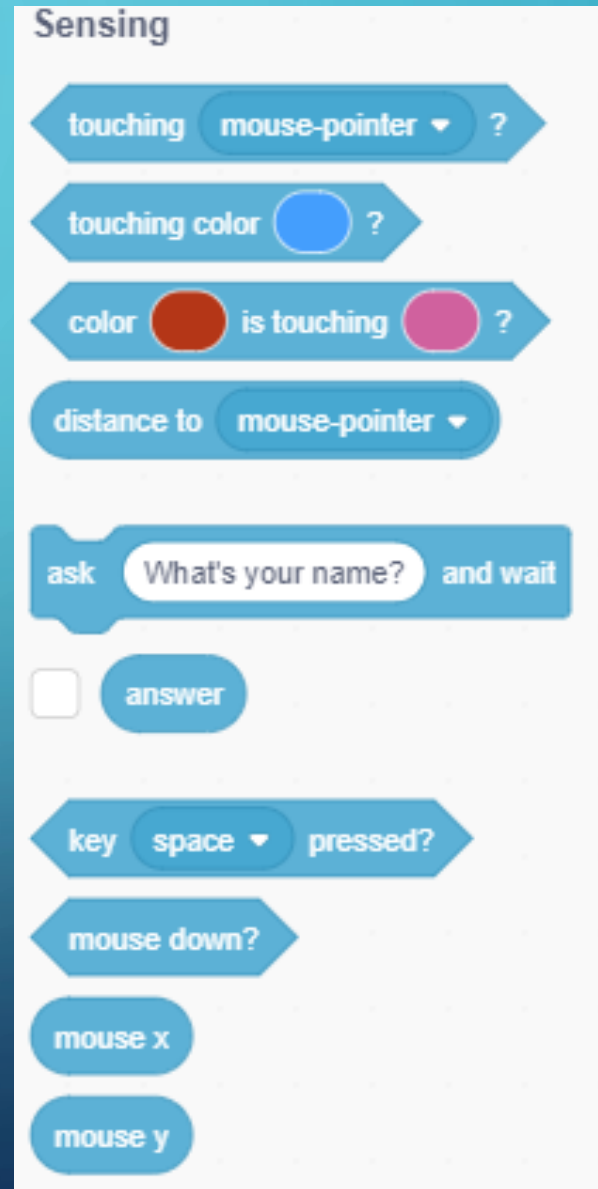
IF STATEMENTS

- **If statements** are used to check IF a condition is true or not, if it is true then we will do an action



SENSING CATEGORY

- Sensing category has blocks that detect things
- We use sensing category with conditional statements
- They are represented by a blue color
- There are 21 sensing blocks

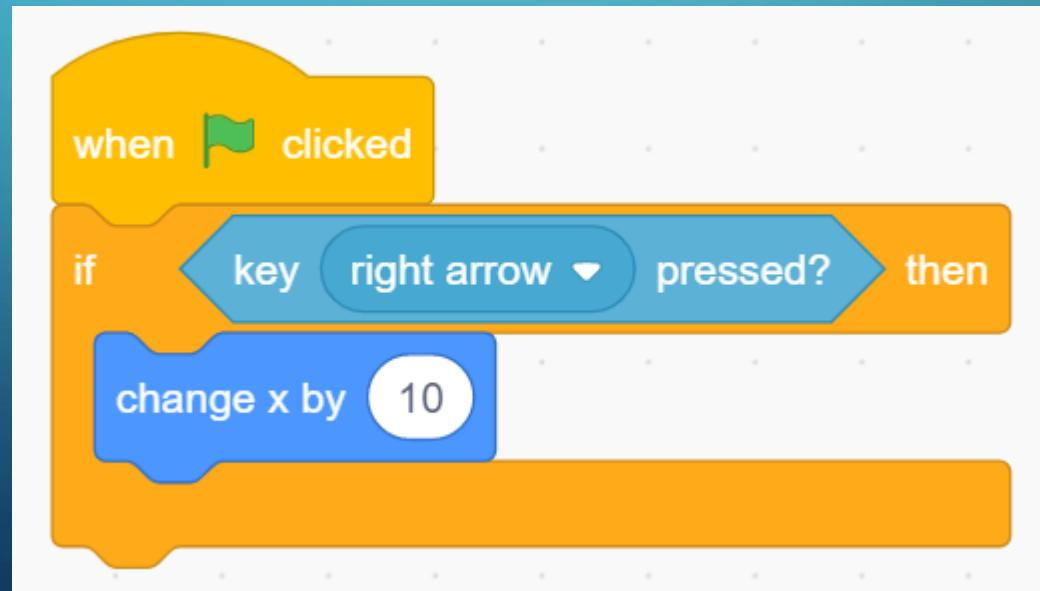


TASK 1: MAKE THE CHARACTER MOVE TO THE RIGHT



TASK 1: MAKE THE CHARACTER MOVE TO THE RIGHT

DOES IT WORK?



TASK 1: MAKE THE CHARACTER MOVE TO THE RIGHT

NOT REALLY



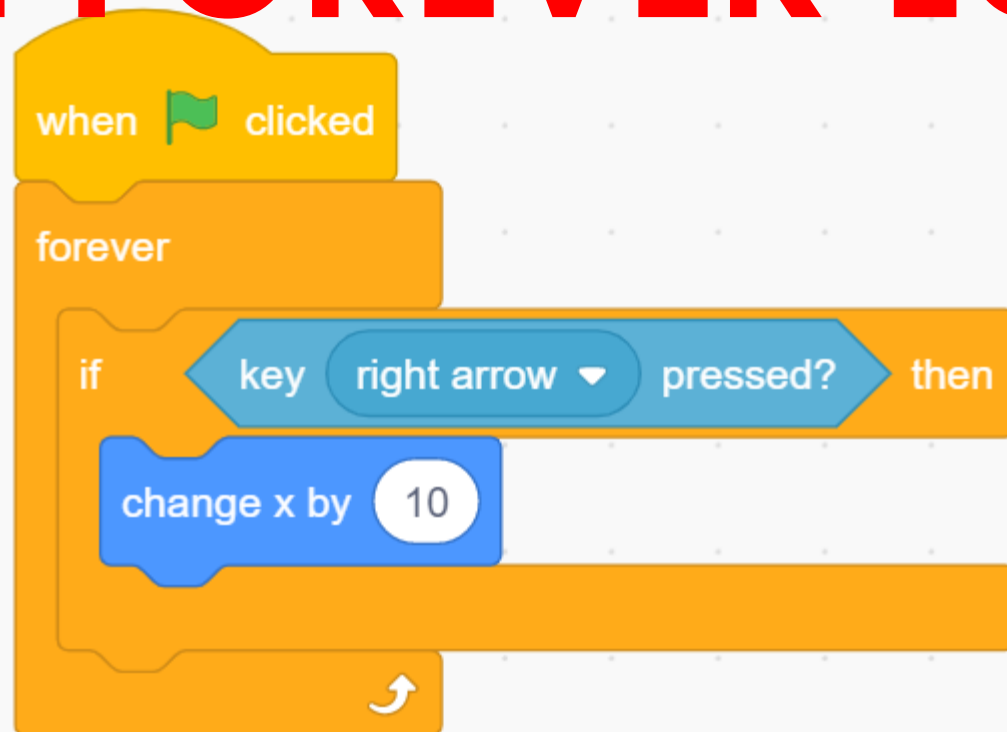
TASK 1: MAKE THE CHARACTER MOVE TO THE RIGHT

- As soon as the script activates, the conditional statement will check the condition, if it is not True at that moment it will skip it
- We have to make it check all the time
- **HOW CAN WE DO THAT?**



TASK 1: MAKE THE CHARACTER MOVE TO THE RIGHT

USE FOREVER LOOP




TASK 2: MAKE THE CHARACTER MOVE UP, DOWN, LEFT, RIGHT BY USING CONDITIONAL STATEMENT



TASK 2: LEFT, RIGHT

```
when green flag clicked
  forever loop
    if key right arrow pressed? then
      change x by 10
```



```
when green flag clicked
  forever loop
    if key left arrow pressed? then
      change x by -10
```

```
when green flag clicked
  forever loop
    if key up arrow pressed? then
      change y by 10
```

```
when green flag clicked
  forever loop
    if key down arrow pressed? then
      change y by -10
```



TASK 2: MAKE LEFT, RIGHT

THIS LOOKS MESSY

```
when green flag clicked
  forever loop
    if key right arrow pressed?
      change x by 10
```

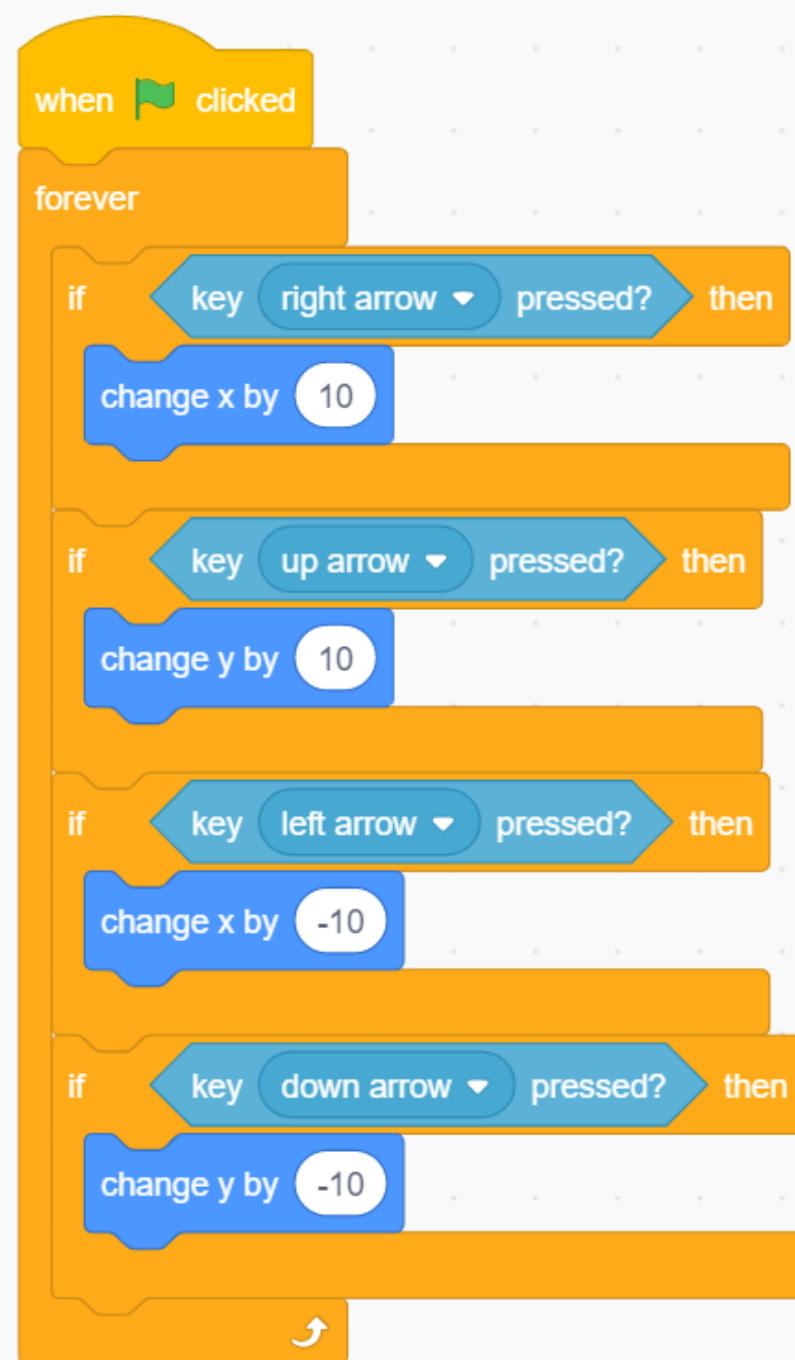
```
when green flag clicked
  forever loop
    if key left arrow pressed?
      change x by -10
```

```
when green flag clicked
  forever loop
    if key up arrow pressed?
      change y by 10
```

```
when green flag clicked
  forever loop
    if key down arrow pressed?
      change y by -10
```

TASK 2: MAKE THE CHARACTER MOVE LEFT, RIGHT BY USING CODE

**COMBINE
EVERYTHING
TOGETHER**



```
when green flag clicked
  forever loop
    if key right arrow pressed? then
      change x by 10
    if key up arrow pressed? then
      change y by 10
    if key left arrow pressed? then
      change x by -10
    if key down arrow pressed? then
      change y by -10
```

The image shows a Scratch script starting with a 'when green flag clicked' event block. This is followed by a 'forever' loop containing four conditional 'if' blocks. Each 'if' block checks for a specific arrow key being pressed: 'right arrow', 'up arrow', 'left arrow', and 'down arrow'. If a key is pressed, a corresponding 'change' block is executed: 'change x by 10' for the right arrow, 'change y by 10' for the up arrow, 'change x by -10' for the left arrow, and 'change y by -10' for the down arrow. The 'forever' loop block has a circular arrow icon at the bottom right, indicating it repeats indefinitely.

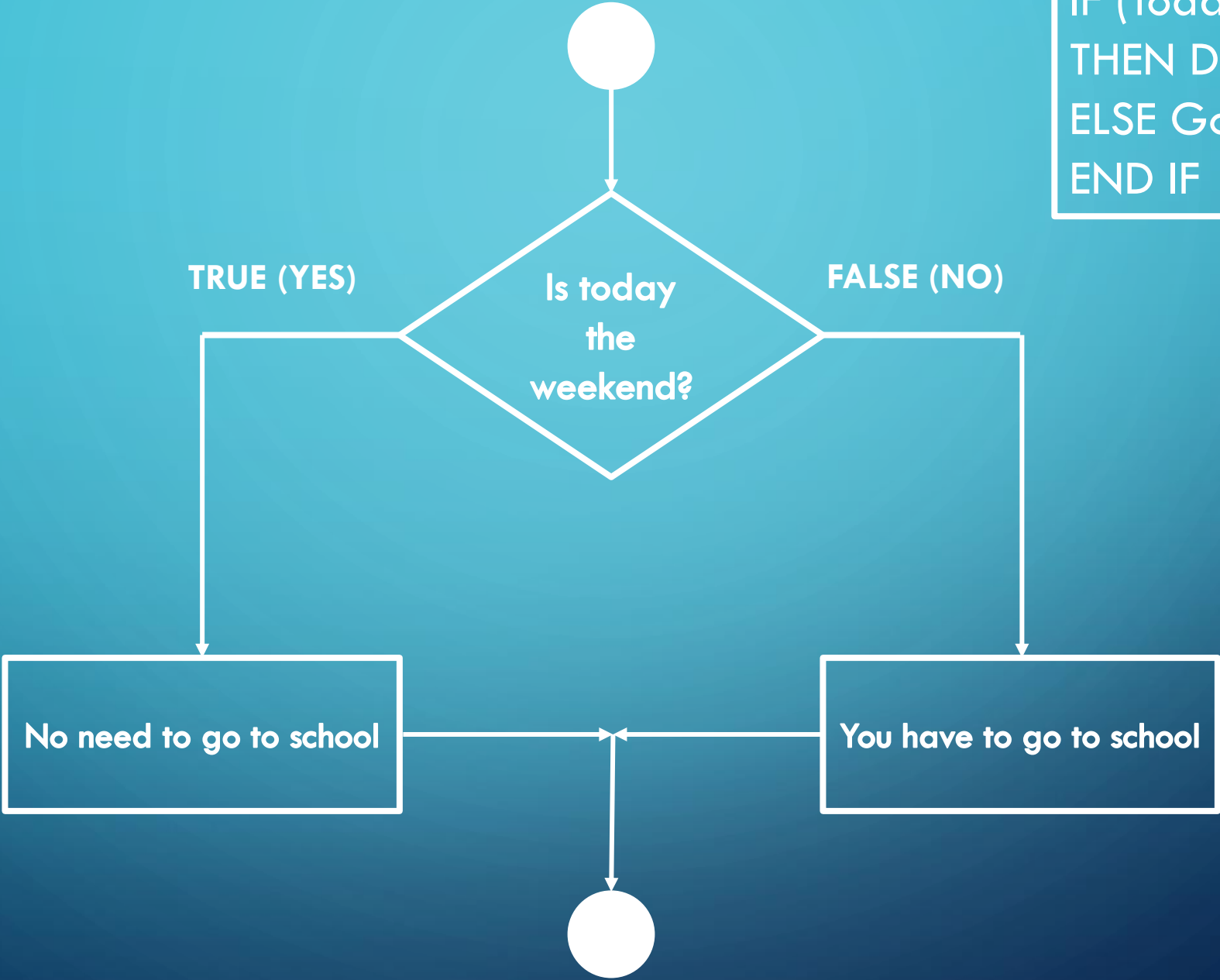
2/2

IF-ELSE STATEMENTS

- **IF-ELSE statements** are used to check IF a condition is true or not, if it is true then we will do an action and if it is FALSE it will do something else

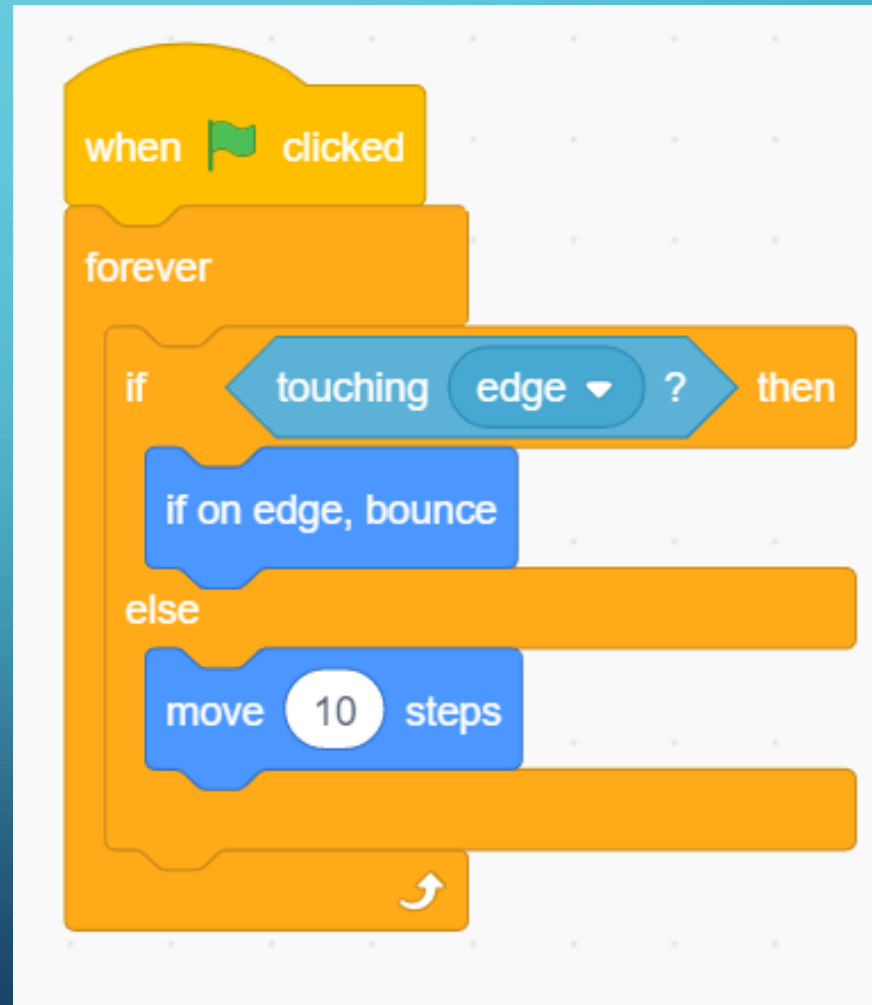


```
IF (Today is weekend)
THEN Don't go to school
ELSE Go to school
END IF
```

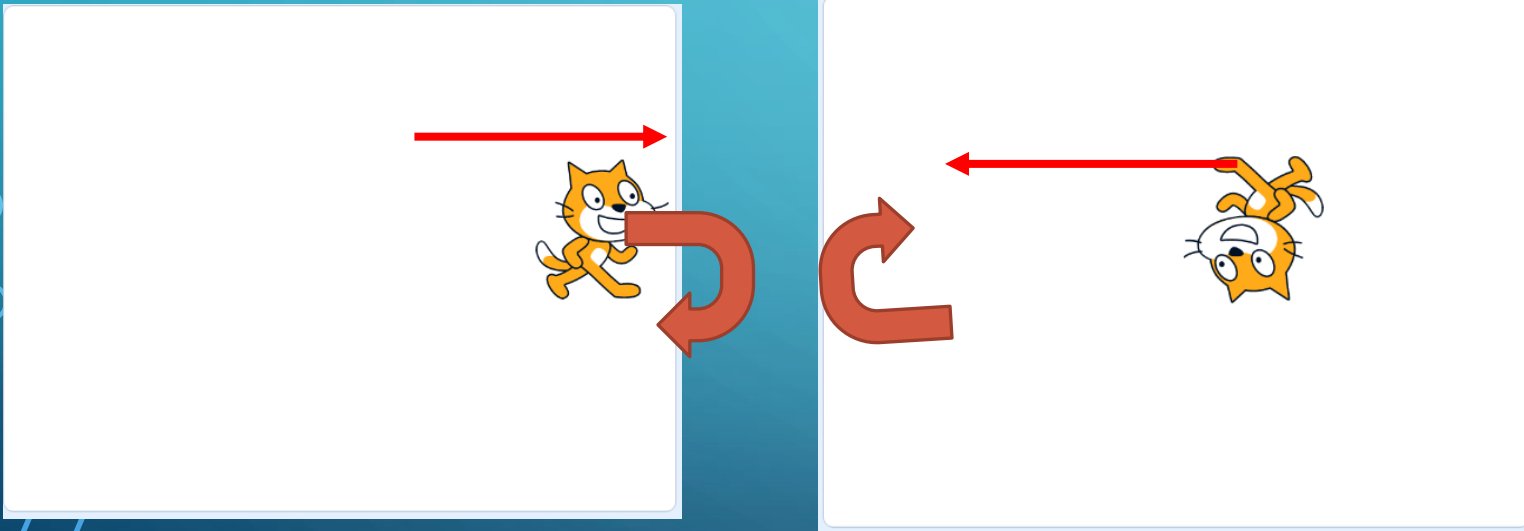


TASK 3: BOUNCING ON FROM THE EDGE

**DO NOT
DELETE THE
CODE FROM
BEFORE**



TASK 3: BOUNCING ON FROM THE EDGE



```
when green flag clicked
  forever loop
    if touching edge ? then
      if on edge, bounce
    else
      move 10 steps
```

The code is written in Scratch blocks. It starts with a yellow 'when green flag clicked' block. Below it is an orange 'forever' loop block. Inside the loop, there is an orange 'if touching edge ? then' block. The 'edge' dropdown menu is set to 'right'. Inside the 'then' block is a blue 'if on edge, bounce' block. Below the 'if' block is an orange 'else' block containing a blue 'move 10 steps' block. The 'forever' loop block has a white arrow at the bottom right indicating it repeats.

TASK 4: RED MAKES ME BIGGER

- Create a RED circle in the game
- Make the following code
 - IF the cat touches RED color,
it will increase the size by 10
 - ELSE it will decrease the size by 10

TO MAKE A
CIRCLE PRESS
HERE



Sprite Sprite1

x -92

y 21

Show



Size

100

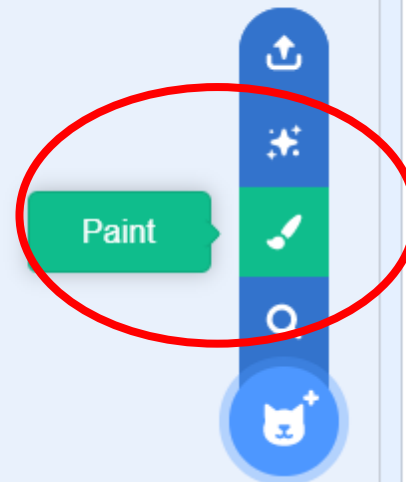
Direction

90

Stage

Backdrops

1



Code

Costumes

Sounds



Costume costume1



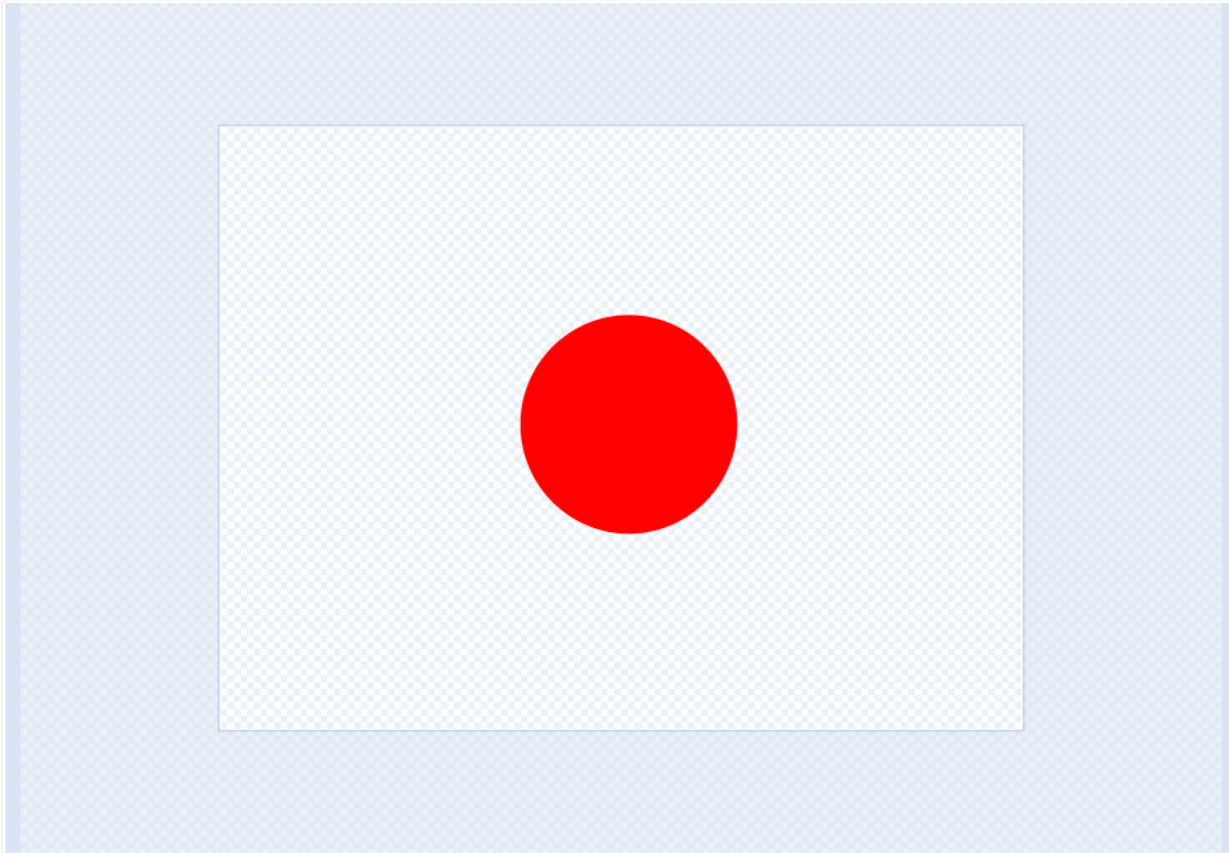
Fill



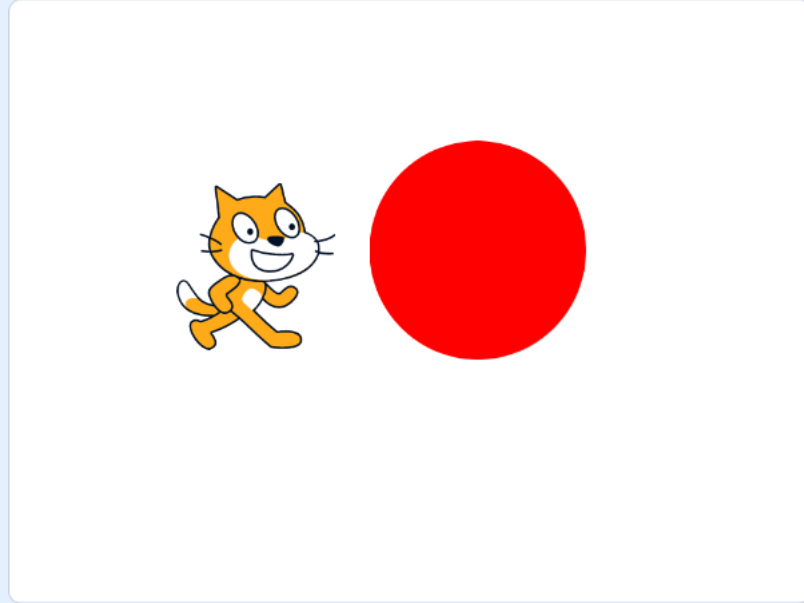
Outline



0



Convert to Bitmap



Sprite Sprite2

x 36

y 28

Show



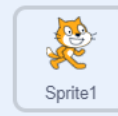
Size 100

Direction 90

Stage

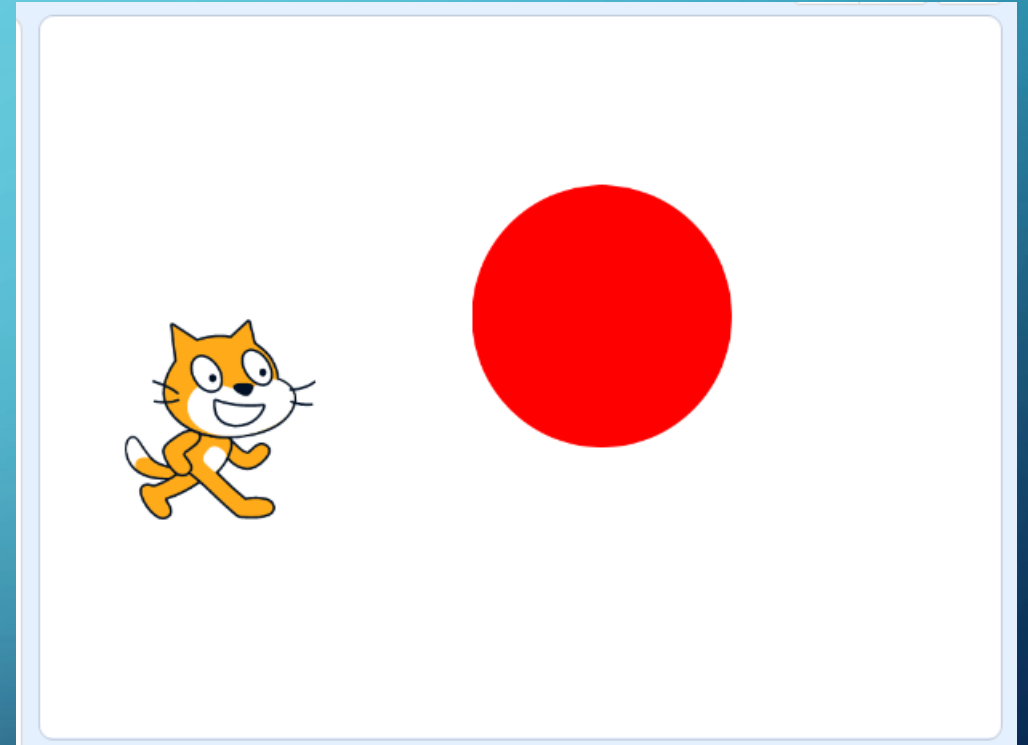


Backdrops 1



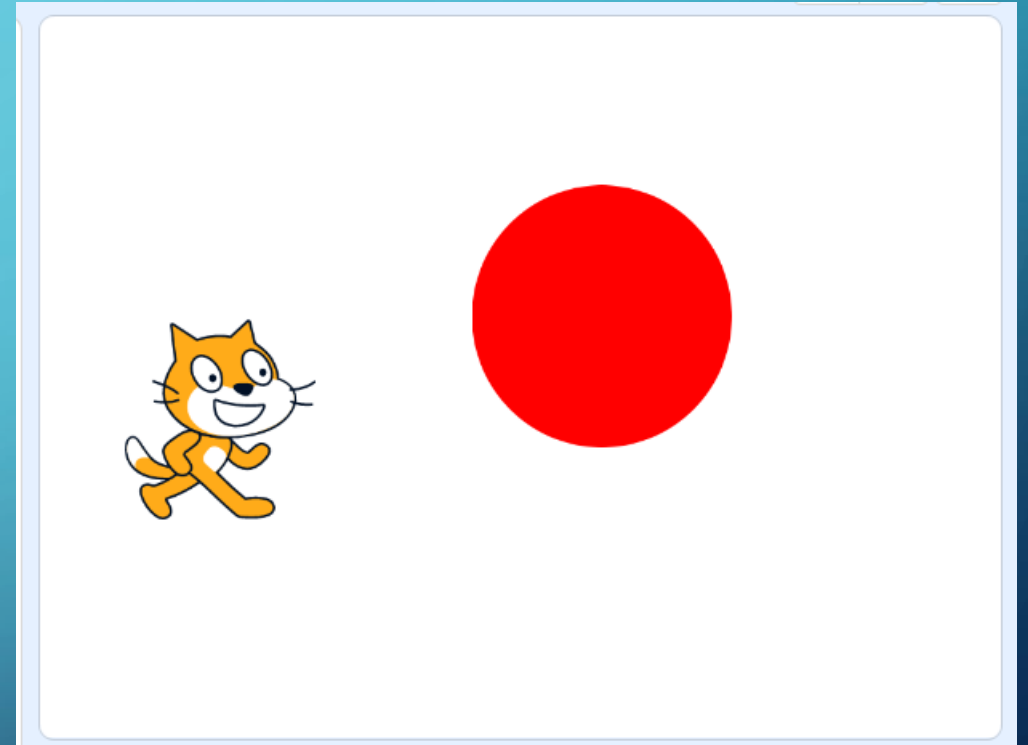
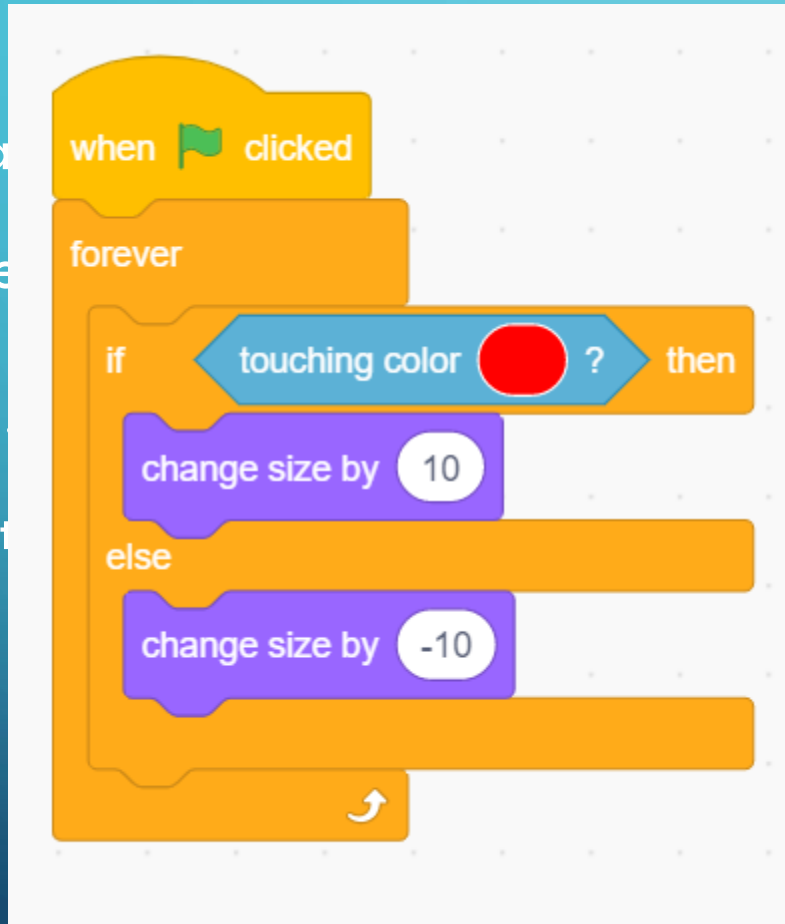
TASK 4: RED MAKES ME BIGGER

- Create a RED circle in the game
- Make the following code
 - IF the cat touches RED color,
it will increase the size by 10
 - ELSE it will decrease the size by 10



TASK 4: RED MAKES ME BIGGER

- Create a script
- Make the cat's size change when it touches the red circle
- IF the cat touches the red circle, it will increase its size by 10
- ELSE if it does not touch the red circle, it will decrease its size by 10





ANY QUESTIONS?



THE END