

BLOCK PROGRAMMING WITH SCRATCH PART 2

Programming Language I



Learning Outcome

- At the end of the lesson you should be able to:
 - Use pen in Scratch
 - Use data in Scratch
 - Use operators
 - Build a simple game with Scratch

Pen



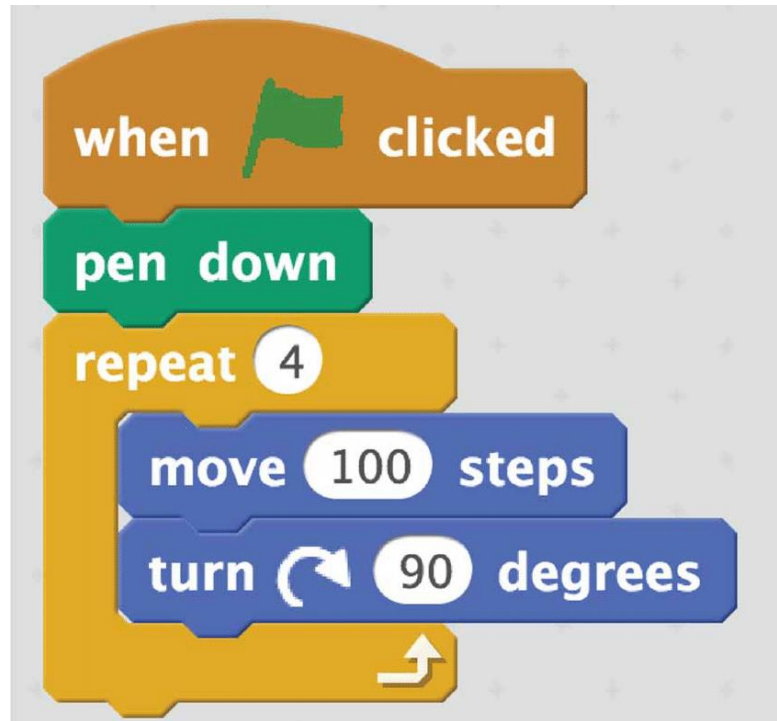
- **Pen blocks** are the blocks that control the pen.
- There are 11 Pen blocks in Scratch 2.0.
- Ex:-
 - ✓ Clear — Removes all pen marks put on the screen.



- ✓ Pen Up — Puts the sprite's pen up.

Exercise 1

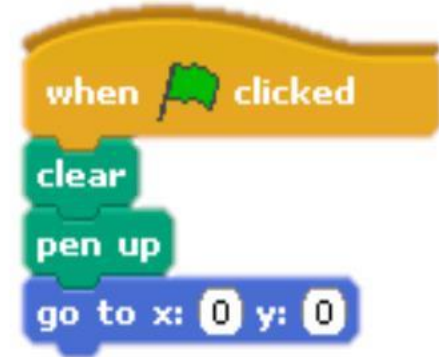
- Try the following program. What did you see?



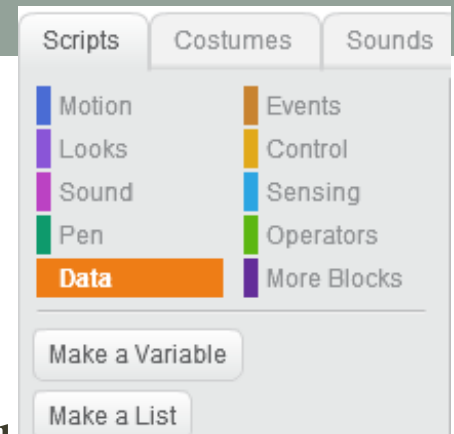
Pen game

- Open the **Pen** game.
- Complete the scripts so that when the other arrow keys are pressed they move the sprite in the correct direction.
- Test it out by clicking on the green flag and try to write your name.





Pen 



Data








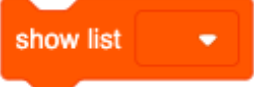

- Variables blocks are the blocks that hold values and strings.
- There are 5 Variables blocks in Scratch 2.0.

-  — Sets the specified variable to the amount.
-  — Changes the specified variable by the amount.
-  — Shows the variable's [Stage Monitor](#).
-  — Hides the variable's Stage Monitor.

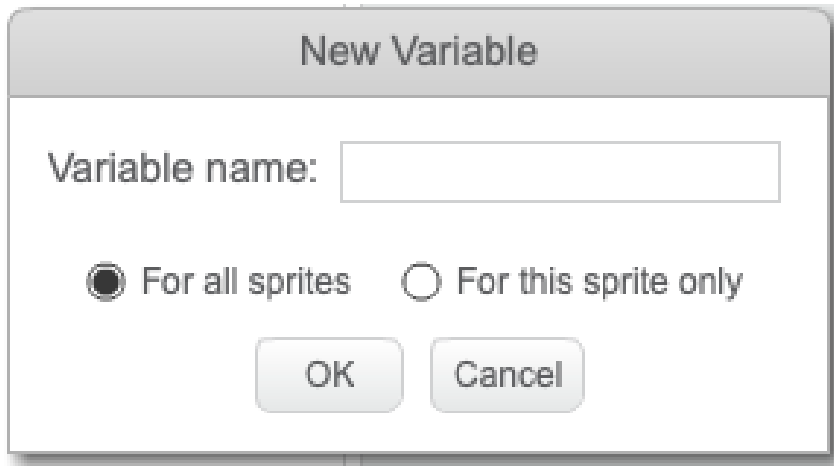
Data

■ **List blocks** are the blocks that manage [lists](#). They are stored in the Data category.

■ There are 10 List blocks in Scratch 2.0.

-  — Adds an item to the list (the item goes at the bottom of the list of items) with the specified content in it.
-  — Deletes the item of the list.
-  — Deletes all items of the list.
-  — Adds an item to the list (the item goes where you specify in the list of items) with the specified content in it.
-  — Replaces the item's content with the specified content.
-  — Shows a list.
-  — Hides a list.

Data



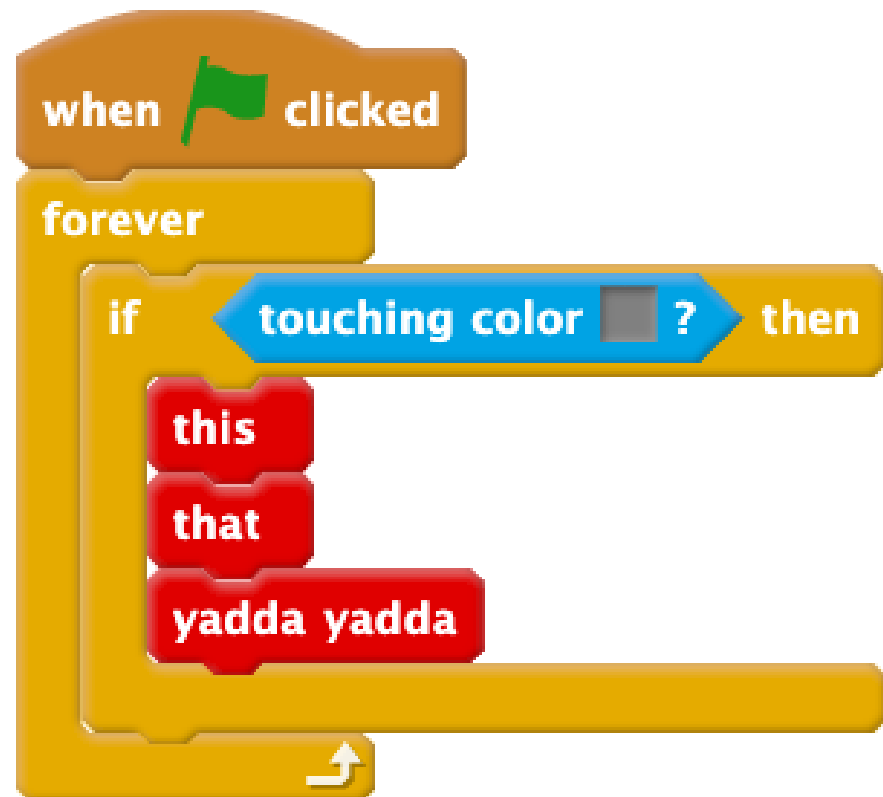
You can give any name to your variable to help you better understand your data. Click on MakeNew Variable.



My example variable is 'Lives'

Exercise 2

- Try to create the following script. What will you get?



Operators

- **Operators blocks** are the blocks that perform **math functions and string handling**.
- These are some of the examples

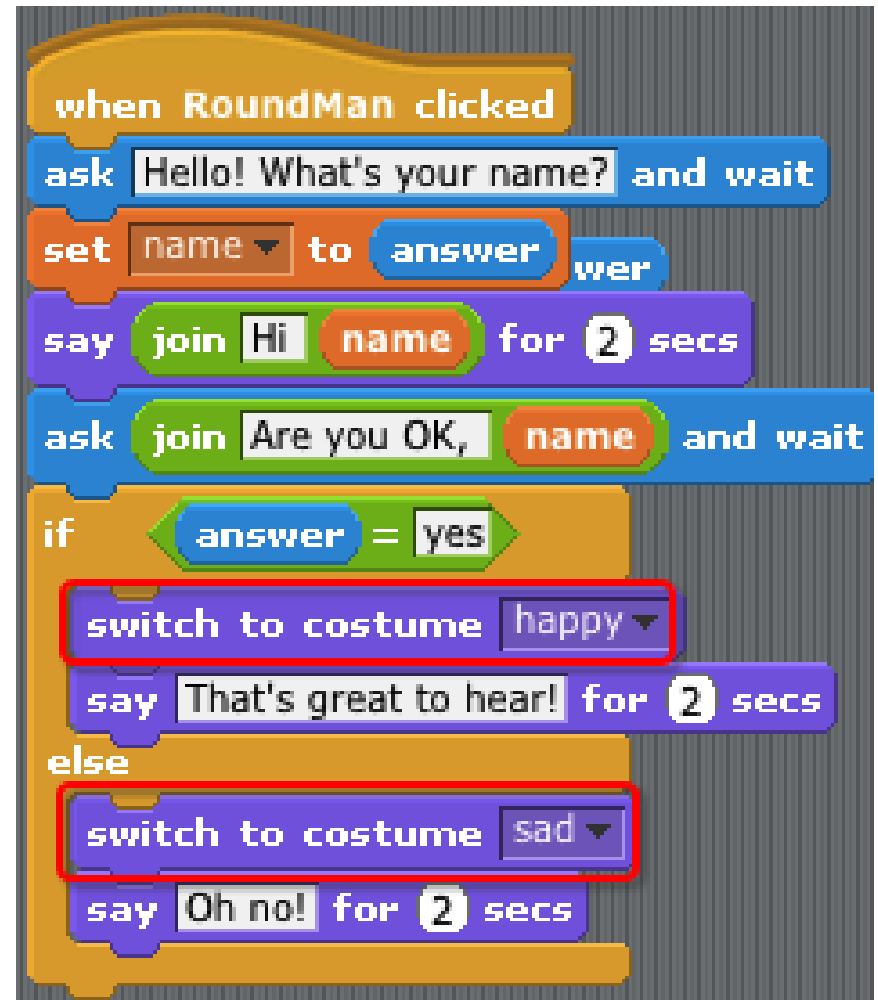


More Block

- **More blocks** are user-made custom blocks.
- There are 2 unique kinds of More blocks in Scratch 2.0.
- Ex:-
 - ✓ Define () — Defines a custom block.
 - ✓ () — A custom block.

Exercise 3

- Try the following.
- You can change the sprite into anything that you want.



Exercise 4

- Try another one.
- What did your program do?

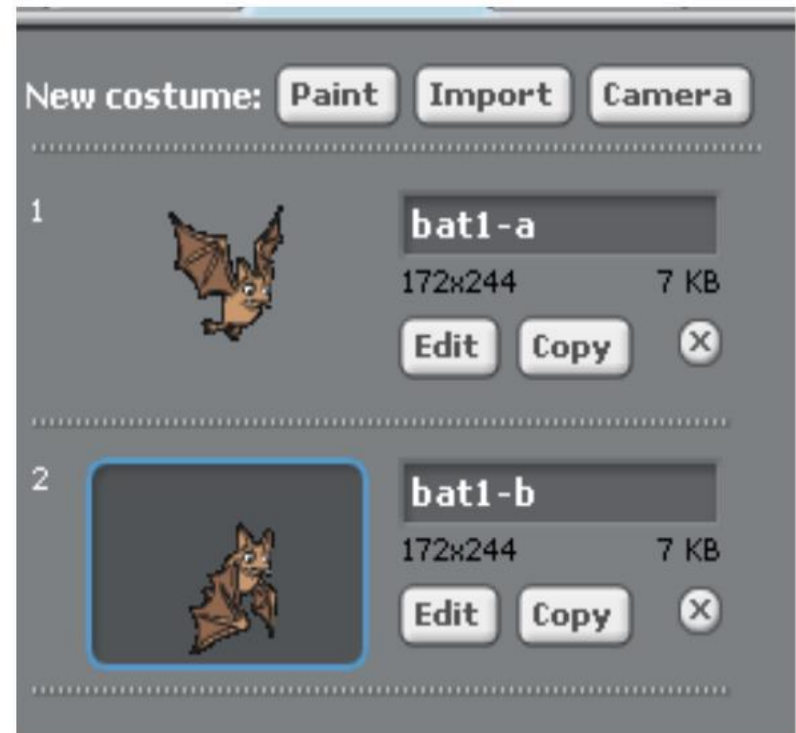


Maze Game

- Try the following game:
- <https://bit.ly/35nWvtR>

Bat game

- Create a new game; change the background and delete the cat sprite.
- Add the Bat sprite and import a second costume showing the bat with its wings in a different position.



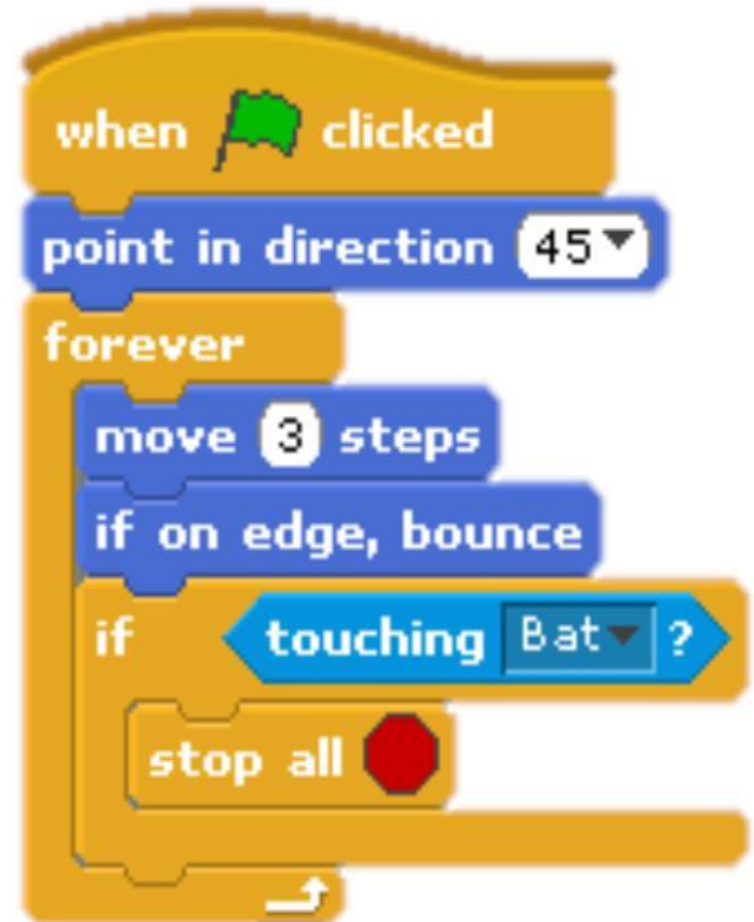
Add the script



- When the green flag is clicked, make the bat change costume every 0.25 seconds.
- When the arrow keys are pressed then make the bat move in that direction.

What will this script do?

- Add a sprite of your choice and the script as shown.
- Alter the script so that your new sprite will point towards the bat before it starts moving.



Exercise 4

- Try to think of different ways you could make your game exciting
- Try out each other's games and decide what makes a good game?
- Why are some games better than others?