

LAB 02

Summary

Items	Description
Course Title	Programming Fundamentals
Lab Title	Algorithms and Scratch
Duration	3 Hours
Operating System/Tool/Language	Ubuntu/ Scratch/ C++
Objective	To get familiar with Scratch

1. ALGORITHM

The word **Algorithm** means "a process or set of rules to be followed in problem-solving operations". Therefore, Algorithm refers to a set of rules or instructions that step-by-step define how a work is to be executed upon in-order to get the expected results.

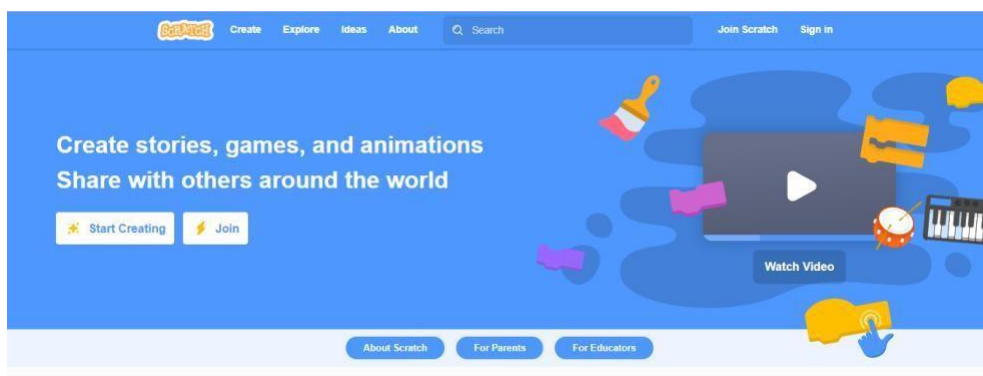
PRACTICE PROBLEMS

1. Write a pseudo code that calculates the average of 3 numbers.
2. Write a pseudo code that display all the multiples of 5 between 1 and 100.
3. Write a pseudo code that takes number from user and checks whether the number is even or odd.

2. INTRODUCTION TO SCRATCH

Scratch is a programming language that lets you create your stories, animations, games, music and art.

Go to the URL: <https://scratch.mit.edu/>

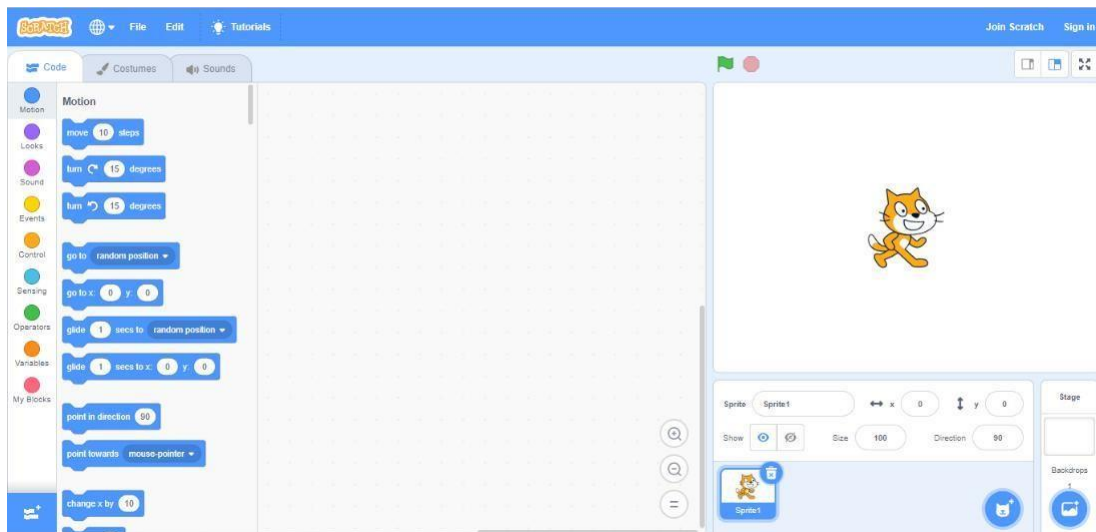


Perform the following steps

Step1: Make a new project by clicking on **Create** at top left



This would launch the following window



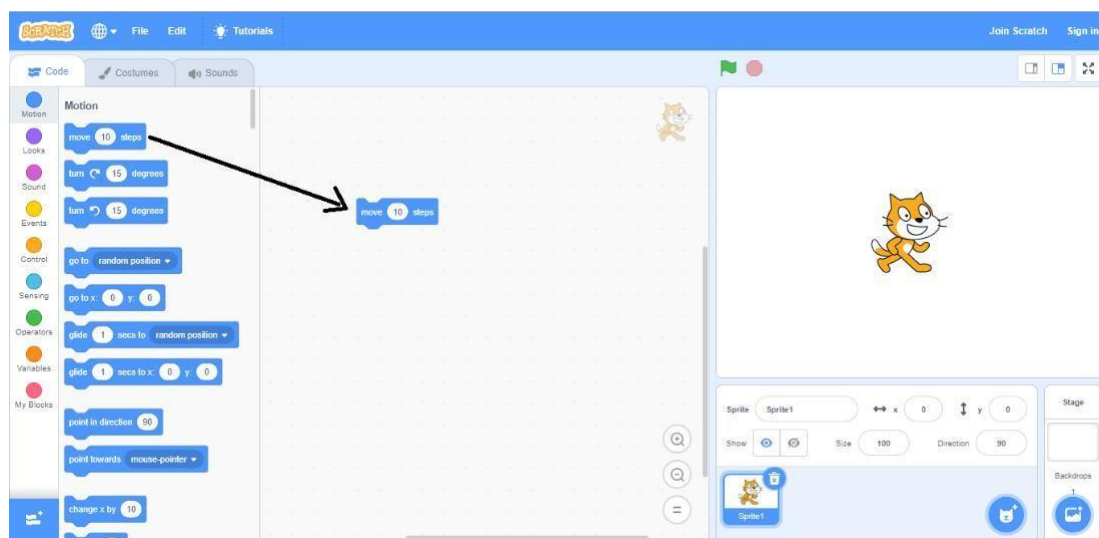
You can change the **Backdrop** from bottom right



Change the character **Sprite** by clicking on cat face logo

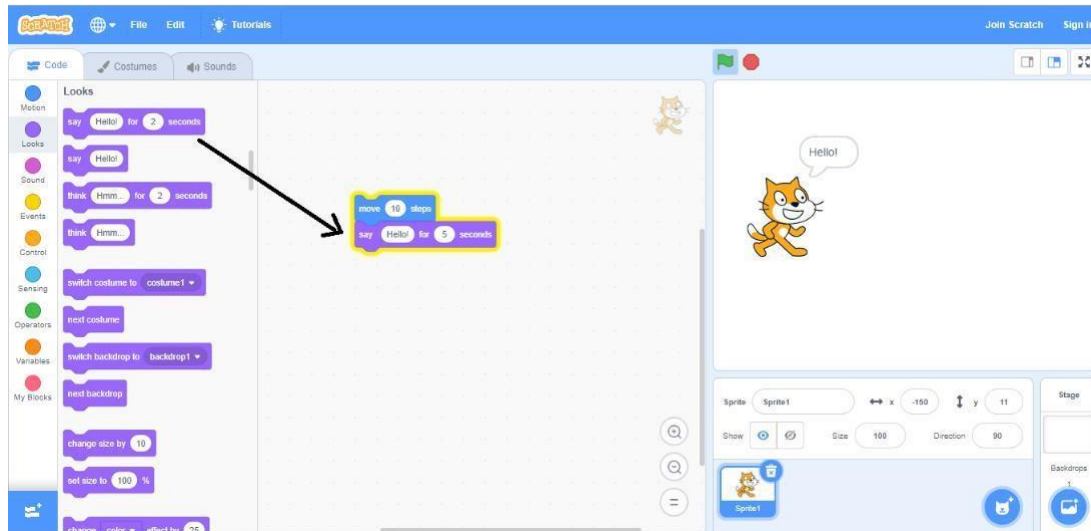


Step2: Drag the **Move** block in script area



Step3: Click on the **Move** block to make the cat move.

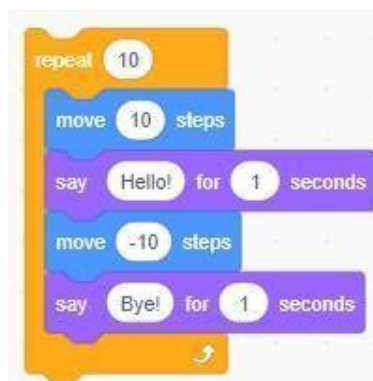
Step4: Click on the **Looks**. Drag out the **Say** block and snap it on the **Move** block.



Step5: Add another **Move** block. Click inside the block and type in a **minus** sign. Add another **Say** block. Click on any of the blocks to run the stack.

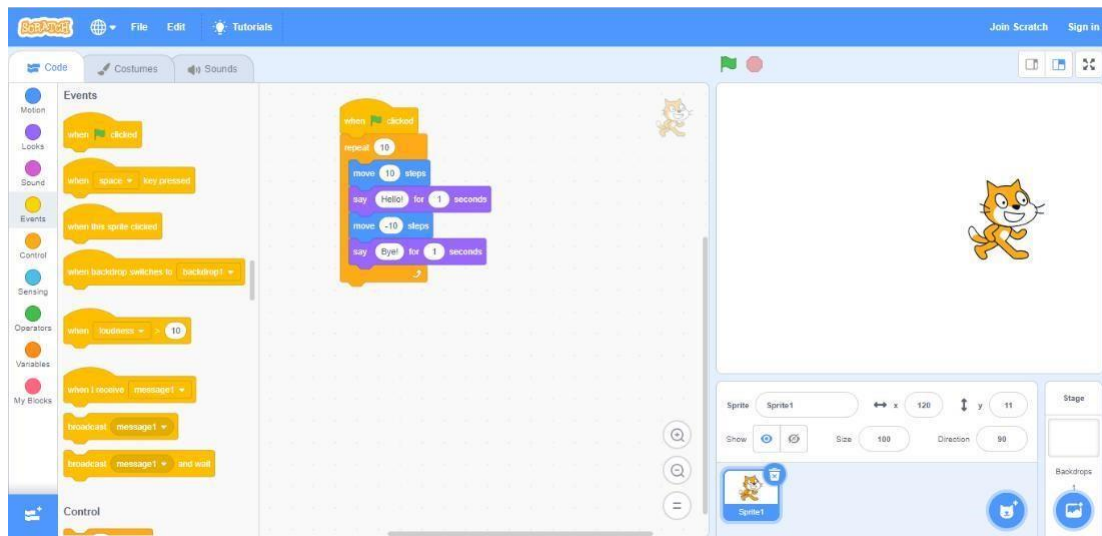


Step6: From **Controls**, drag out a **Repeat** block and drop it on top of the stack. You want the mouth of the **Repeat** to wrap around the other blocks.

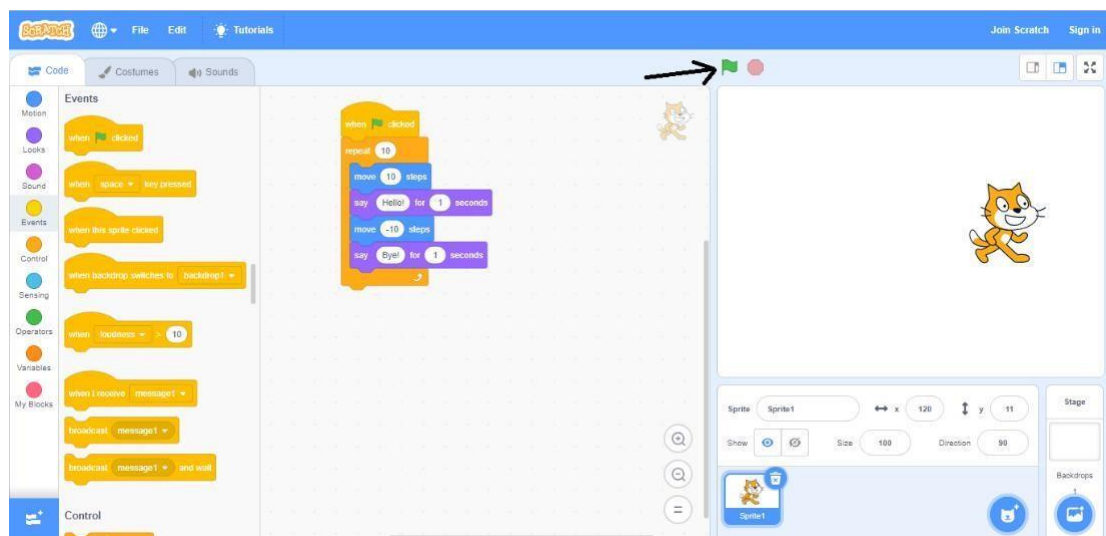


You may change the number of times it repeats.

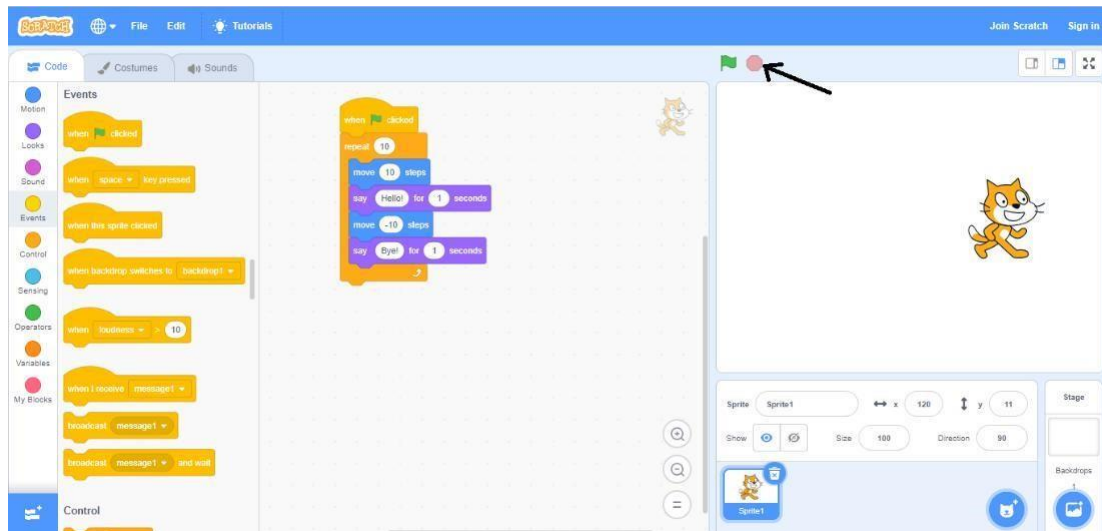
Step7: Click on **Events**, drag out a **Green Flag** block and drop it on top of the stack. Whenever you click the green flag, your script will start. To stop, click the stop button.



Click on the **Green Flag** to start the script.



Click on the **Red Button** to stop the script.



Practice

Task#01

Create a program that makes your character move around and draw continuously. You can use **pen down** block to draw something.

Reference figure is given below for your help.

