CL-1002 Programming Fundamentals

LAB - 02

Problem solving with Decision and iterative structure using Scratch

NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES
Fall 2022

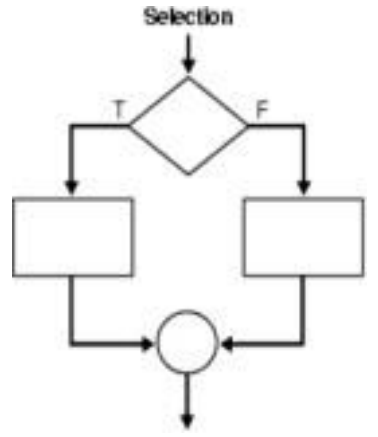
Introduction to Decision and Iterative Structures

Decision Structure: A statement or a set of statements that is executed when a particular condition is "True" and ignored when the condition is "False".

In scratch, we use the following control diagrams for decision structure.

In scratch, we use the following control diagrams for decision structure.

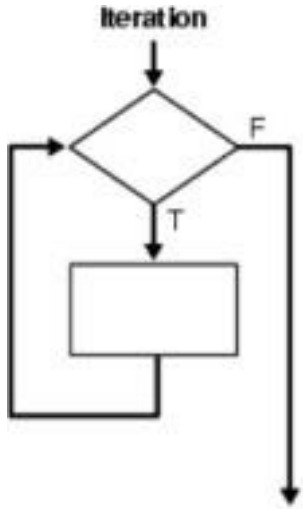
Example 01: Given a number as an input by a user, check if the number is a negative number or a positive number.

Flowchart of Decision Structure	Scratch Diagram	Output
		

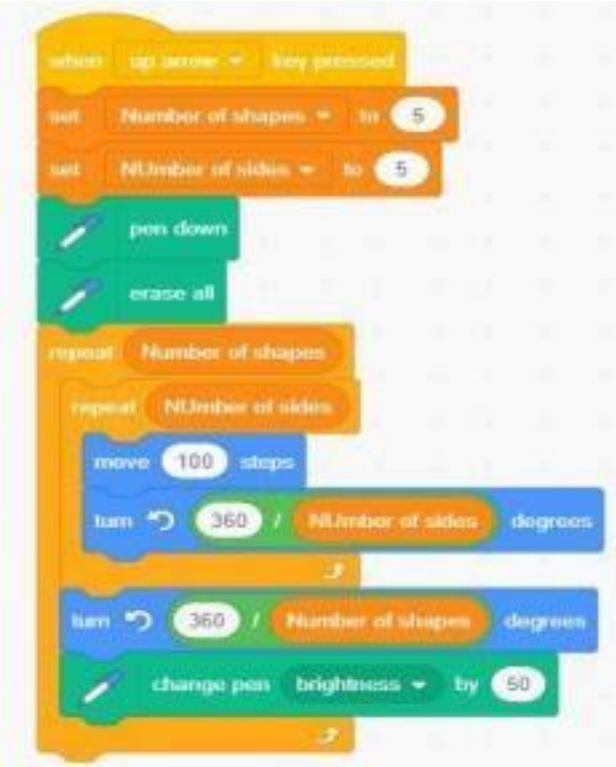
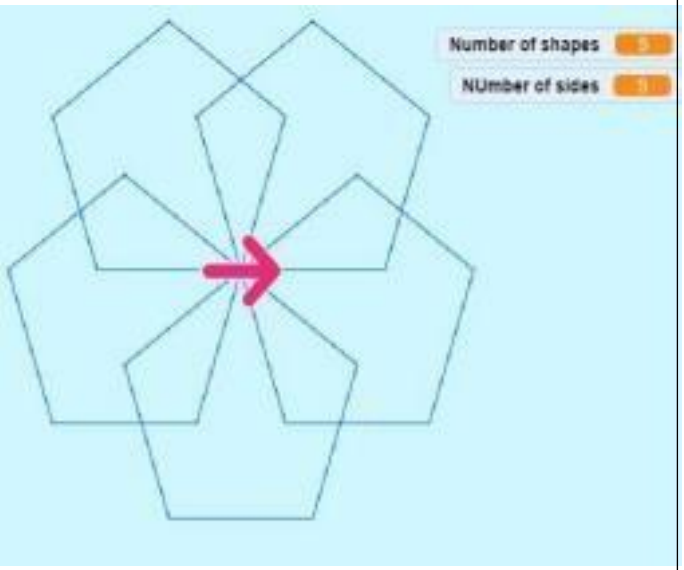
Iterative Structure: The statements that cause a set of statements to be executed repeatedly either for a specific number of times or until some condition is satisfied are known as iteration statements.

In scratch, we use the following control diagrams for iterative structures:

Example 02: Set a counter to 1 and repeat until the given condition is satisfied. In this case, the given condition is counter =10.

Flowchart of Iterative Structure	Scratch Diagram	Output
		

<u>Example 03:</u> Draw a pentagon with the help of repeat and pen diagrams. Repeat the shape for five times.

Scratch Diagram	Output
	

EXERCISE

Task 01
Write a program to find maximum between two numbers.

Task 02
Write a program to check whether a number is even or odd.

Task 03
Write a program to input any alphabet and check whether it is vowel or consonant.

Task 04
Write a program to input any character and check whether it is alphabet or digit.

Task 05
Write a program to input month number and print number of days in that month.

Task 06
Write a program to print all natural numbers in reverse order from n -1. Where n is number provided by the user.

Task 07
Write a program to print all odd number between 1 to 10.

Task 08
Write a program to print multiplication table of 2.

Task 09
Write a program to find sum of all numbers between 1 to 10.

LAB#02: DECISION AND ITERATIVE STRUCTURE