National University of Sciences and Technology (NUST), Balochistan Campus (NBC).

Assignment # 4

Department:
Computer Science

Course Title:
Fundamental of ICT

Course Code:
CS-100

ASSIGNMENT TOPICS:

- Flowcharts
- Algorithms
- Pseudocode

And their examples.

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Student sign

Instructor sign

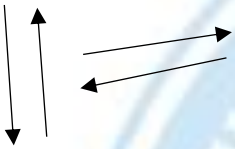
INTRODUCTION:

These are set of instruction step by step to solve a particular problem in computer programming. Flowcharts, algorithms and pseudocode are used to help programmers plan and describe their proposed program. These are used in assessments to determine if learners can follow the underlying algorithm or describe a system in terms of an algorithm.

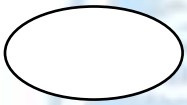
Flowcharts:

According to google dictionary, it is a diagram of the sequence of movements or actions of people or things involved in a complex system or activity to show sequential process.

The following are the main flowcharts with theirs particular functions.



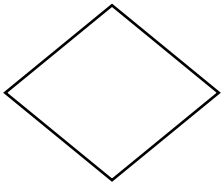
Flow Lines: These are used to indicate the flow of process.



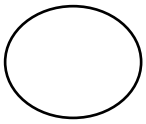
Terminal (start/End): It is used to represent the start and end of flowcharts.

Input/Output: This is used to get input and put output on the screen.

Processing: It used to refer processing in a flowchart problem system.



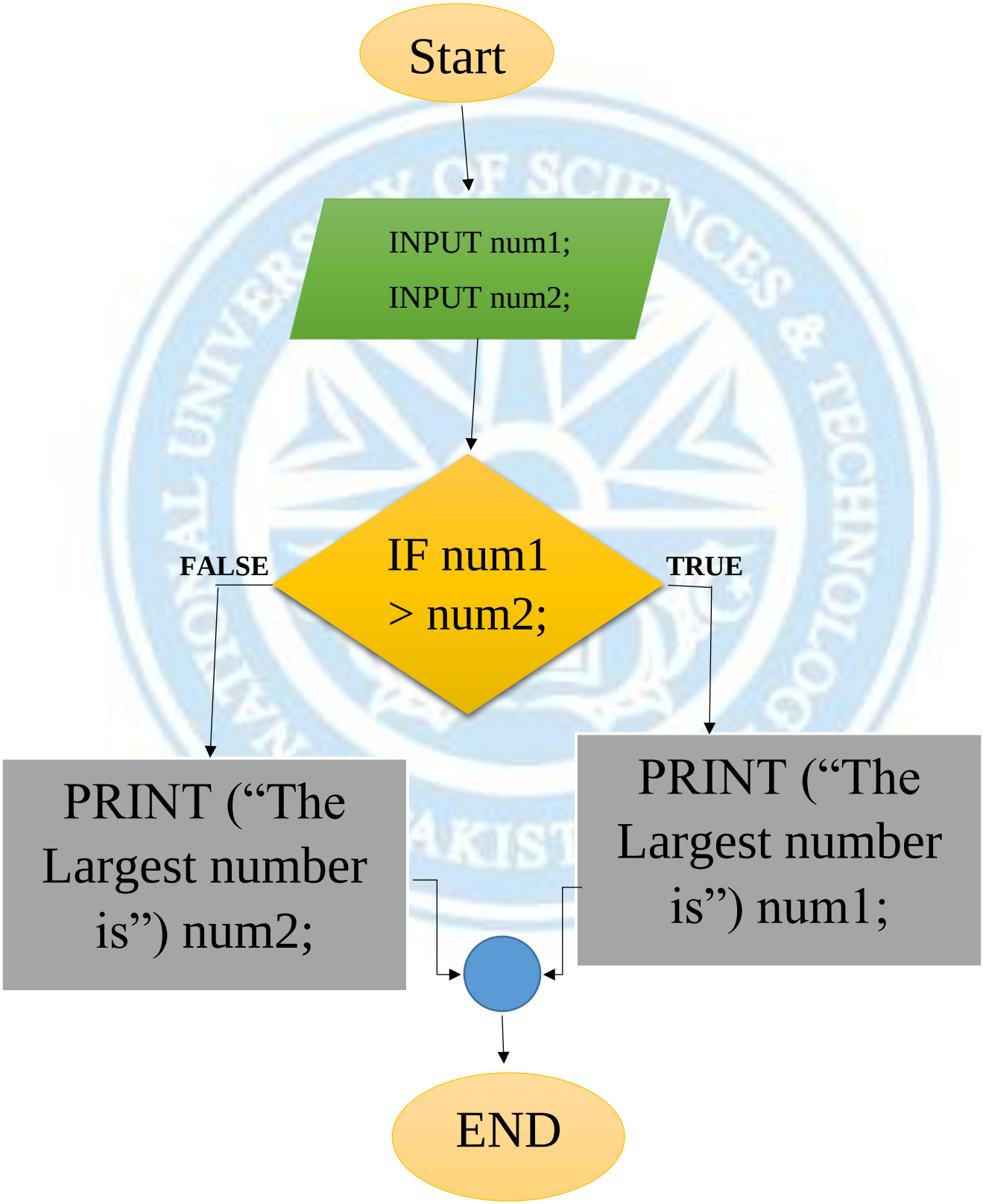
Decision: This is used to make decision between the flows in a flowchart.



Connector: It is used to provide connection in a flowchart.

Example:

A flowchart of two numbers from user and display the larger of two numbers.



Algorithm:

In basic terms, an algorithm is a set of well-defined steps or rules that you need to follow to obtain a pre-determined result. For instance, when we talk about algorithms in computer programming, we already have our input and we know the expected output.

Example:

The sum of 5 numbers.

1. Initialize sum = 0 and counter = 0 (processing)
2. Enter n (Input/Output)
3. Find sum + n and assign it to sum and then increment counter by 1 (processing)
4. Is counter < 5 (Decision)
   If yes go to step 2
   else
   Print sum (Input/Output)

Pseudocode:

Pseudo code, as the name suggests, is a false code or a representation of code which can be understood by even a layman with some school level programming knowledge. . It uses short phrases to write code for programs before you actually create it in a specific language. Once you know what the program is about and how it will function, then you can use pseudocode to create statements to achieve the required results for your program.

Example:

The following example gets two numbers from the user and display the larger of two numbers

BEGIN

INTEGER num1, num2;

OUTPUT ("Enter the first number: ")

INPUT num1;

OUTPUT ("Enter the second number: ")

INPUT num2;

IF num1>num2

OUTPUT (“The largest number is num1”)

ELSE

OUTPUT (“The largest number is num2”)

END

“First, solve the problem. Then, write the code.” – John Johnson

THE END