SLIIT ACADEMY

FCIT – Semester 1

REPETITION CONTROL STRUCTURES - I

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Learning Outcomes

End of this lecture you will be able to learn ,

LO1:Undestand how to use the repetition control structures for solve the problems.

LO2:Undestand difference among difference looping structures.

Repetition control structure

- Some programs require the same logic to be repeated for several sets of data.
- The most efficient way – A looping structure that will cause the processing logic to be repeated a number of times.
- There are three different ways in which a set of instructions can be repeated, and each way is determined by **where the decision to repeat is placed**:

Repetition using the WHILE structure

Syntax :

```
WHILE (condition p)DO

    statement block

ENDWHILE
```
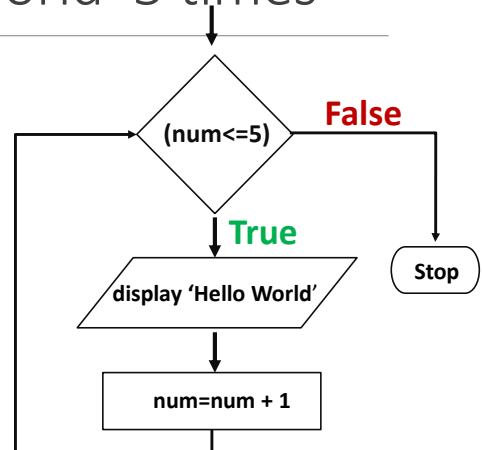
Example : Display 'Hello World' 5 times

Example : Display 'Hello World' 5 times

num	num <= 5	output	num = num + 1

INT num = 1
WHILE (num<=5) DO
    DISPLAY 'Hello World'
    num = num +1
ENDWHILE

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Example 1: Fahrenheit–Celsius conversion

Every day, a weather station receives 15 temperatures expressed in degrees Fahrenheit.

A program is to be written that will accept each Fahrenheit temperature, convert it to Celsius and display the converted temperature to the screen.

After 15 temperatures have been processed, the words 'All temperatures processed' are to be displayed on the screen.

A Defining Diagram

Input	Processing	Output

The REPEAT…UNTIL structure

❑ REPEAT…UNTIL structure **tests the condition** at the **end of the loop**.

❑The **statements within the loop** will be **executed once before the condition is tested**.

❑

```
REPEAT
    Statement 1
    Statement 2
    ………………………
    ………………………
    ………………………
UNTIL (condition P)
```
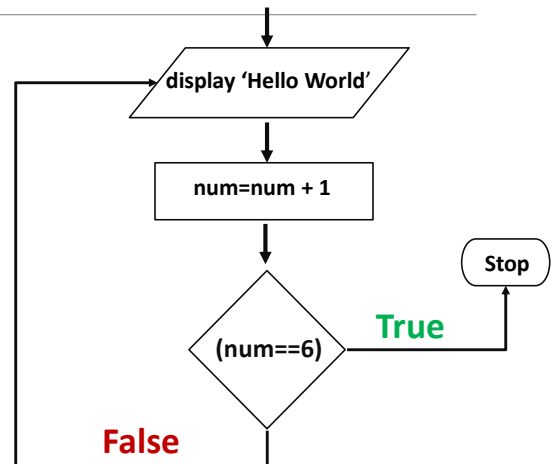
Example : Display 'Hello World' 5 times

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Example : Display 'Hello World' 5 times

num	output	num = num + 1	num == 6

```
INT num=1
REPEAT
    DISPLAY 'Hello World'
    num=num+1
UNTIL(num==6)
```

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Example 2: Print examination scores

A program is required to read and print a series of names and exam scores for students enrolled in a mathematics course.

The class average is to be calculated and printed at the end of the report. **The last record contains a score of 999 and is not to be included in the calculations.**

A Defining diagram

Input	Processing	Output

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Solution Algorithm : Using WHILE Structure

Using the REPEAT...UNTIL structure