



SLIIT ACADEMY

FCIT – Semester 1

REPETITION CONTROL STRUCTURES -II

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Counted Repetition

Counted Repetition occurs when the exact number of loop iterations is known in advance.

```
FOR loop_index = initial_value to final_value  
    statement block  
ENDFOR
```



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Counted Repetition

The FOR loop does more than just repeat the statement block. It will:

1. Initialize the loop_index to the required initial_value
2. Test the value of loop_index at the beginning of each loop to ensure that it is within the stated range of values
3. Increment the loop_index by 1 for each pass through the loop
4. Terminate the loop when the loop_index has exceeded the specified final_value.



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Example : Display 'Hello World' 5 times

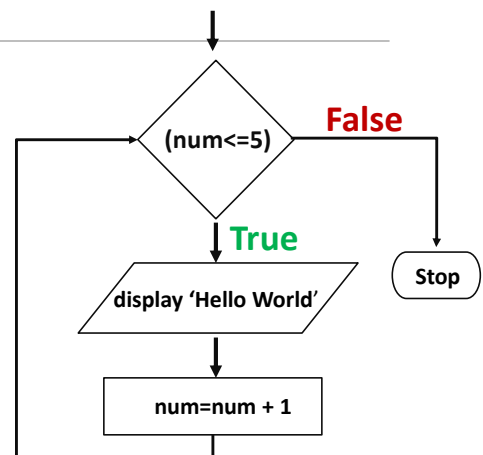
INT num

FOR num =1 to 5

 DISPLAY 'Hello World'

 num = num +1

ENDFOR



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Example : Display 'Hello World' 5 times

num	num <= 5	output	num = num + 1

```

INT num
FOR num =1 to 5
    DISPLAY 'Hello
World'
    num = num +1
ENDFOR

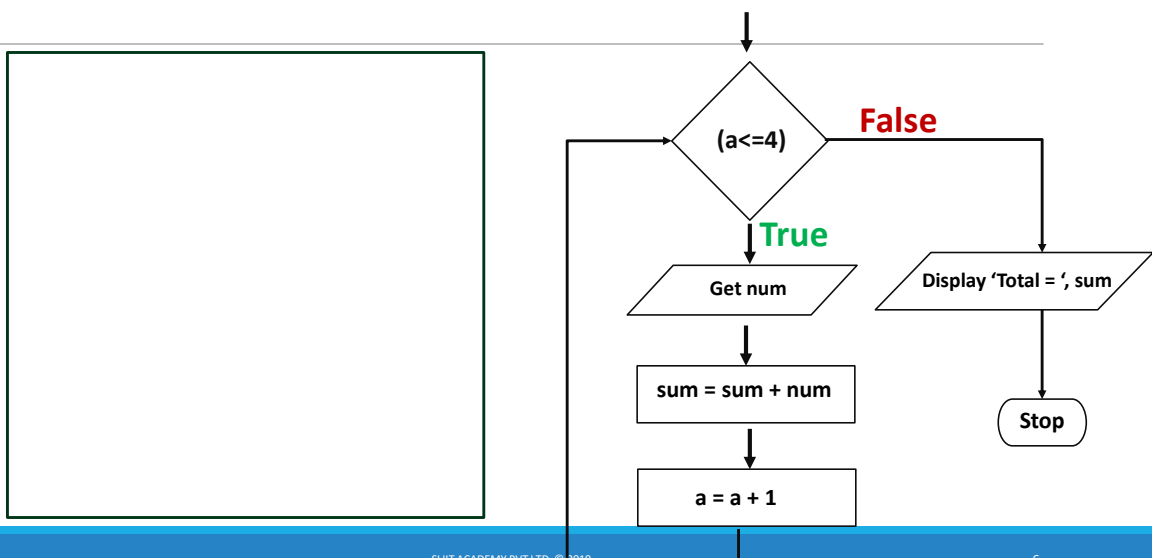
```

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Example: Accept 4 numbers from the user and calculate sum of them

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Example: Accept 4 numbers from the user and calculate sum of them

a <= 4	num(user entered value)	sum = sum+ num	a = a + 1	output



Solution Algorithm using FOR



Solution Algorithm using WHILE

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Example 4: 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.

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Solution Algorithm using FOR

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Difference among repetition control structures

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

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

```
INT num
FOR num =1 to 5
    DISPLAY 'Hello
World'
    num = num +1
ENDFOR
```

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Summary

- ❑ Repetition using the **WHILE** structure
- ❑ The **REPEAT...UNTIL** structure
- ❑ Counted Repetition

