

G. H. RAISONI COLLEGE OF ENGG., NAGPUR
(An Autonomous Institute under UGC Act 1956)
Department of Artificial Intelligence

Date: 29/01/2021

Practical Subject: Statistics and Probability using R
Session: 2020-21

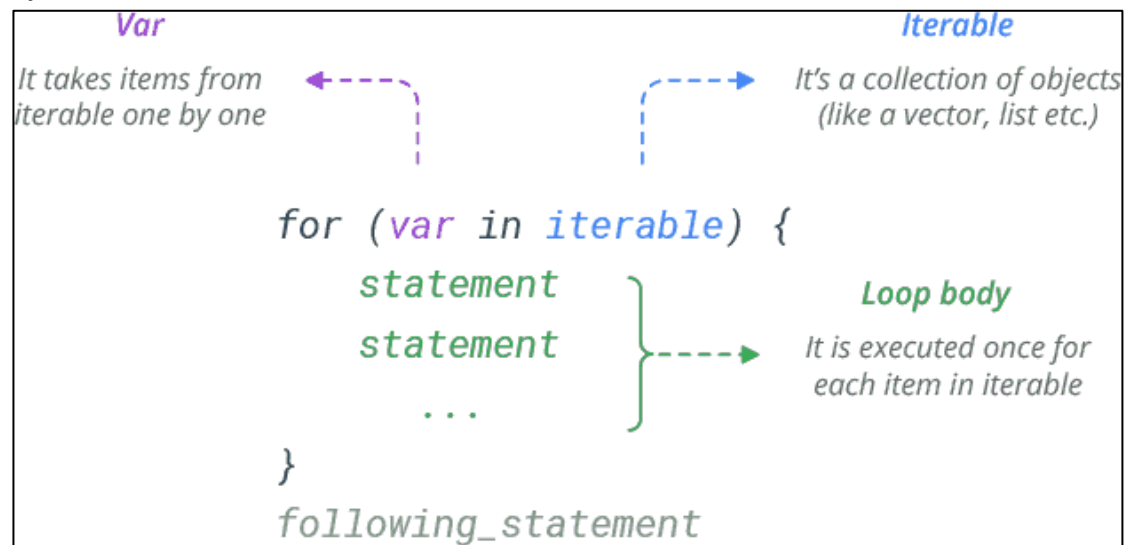
Student Details:

Roll Number	58
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Semester	4
Section	A
Branch	Artificial Intelligence

Practical Details: Practical Number- 2

Practical Aim	Write a program in R for implementing various loops.
Theory & Algorithm	<p>Decision Statements:</p> <p><i>Theory:</i> A loop statement allows us to execute a statement or group of statements multiple times</p> <p>For loops: The syntax of for-loop is: for (val in sequence) { statement } Here, sequence is a vector and val takes on each of its value during the loop. In each iteration, statement is evaluated.</p>

Syntax:



While loops:

Syntax of while loop:

```
while (test_expression)  
{  
    statement  
}
```

Here, `test_expression` is evaluated and the body of the loop is entered if the result is `TRUE`.

The statements inside the loop are executed and the flow returns to evaluate the `test_expression` again.

This is repeated each time until `test_expression` evaluates to `FALSE`, in which case, the loop exits.

Syntax:

	<div> <p>Condition Any expression that evaluates to true or false</p> <pre>while (condition) { statement statement ... }</pre> <p>Loop body It is executed as long as the condition is true</p> <p>following_statement</p> </div> <p>Repeat loop: A repeat loop is used to iterate over a block of code multiple number of times. There is no condition check in repeat loop to exit the loop.</p> <div> <pre>repeat { statement statement ... }</pre> <p>Loop body Repeat this block of code indefinitely</p> <p>following_statement</p> </div>
Program	

	<div> <pre> main.r 1 # Practical-2 2 # Shivam Tawari 3 4 #For Loop 5 6 X <- c(2,5,3,9,8,11,6) 7 count <- 0 8 for (val in X) { 9 if(val %% 2 == 0) count = count+1 10 } 11 print(count) 12 13 #While Loop 14 i <- 1 15 while (i < 6) { 16 print (i) 17 i = i+1 18 } 19 #Repeat Loop 20 X <- 1 21 repeat { 22 print(X) 23 X = X+1 24 if (X == 6){ 25 break 26 } 27 } 28 } </pre> </div>
Output	<div> <pre> input > # Practical-2 > # Shivam Tawari > > #For Loop > > X <- c(2,5,3,9,8,11,6) > count <- 0 > for (val in X) { + if(val %% 2 == 0) count = count+1 + } > print(count) [1] 3 > > #While loop > i <- 1 > while (i < 6) { + print (i) + i = i+1 + } > #Repeat Loop > X <- 1 > repeat { + print(X) + X = X+1 + if (X == 6){ + break + } + } + } </pre> </div>

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