# EXPERIMENT NO : 1C

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## Python programs to implement Looping in Python

**(while loop ,for loop, nested loop)**

**Aim:-To implement Looping in Python : (while loop , for loop, nested loop )**

### THEORY:

***OUTPUT:***

*Python 3.11.0a4 (main, Jan 17 2022, 12:57:32) [MSC v.1929 32 bit (Intel)] on win32*

*Type "help", "copyright", "credits" or "license()" for more information. #AKASH YADAV ID.NO:VU4F2122016 EXP:1C DATE:23/1/2023*

***# Python program to illustrate***

### # while loop

#### A]

a=0

while a<3:

a=a+1

print("HELLOW AKASH!")

HELLOW AKASH! HELLOW AKASH! HELLOW AKASH!

#### B]

# checks if list still # contains any element

A=[1,2,3,45,6,7,8,]

while a:

print(A.pop())

8

7

6

45

3

2

1

***#For loop***

1. ***simple for loop programme***

A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).

*Friends = ["akash", "viram", "suraj"] for x in Friends:*

*print(x)*

*akash viram suraj*

# Looping Through a String

**Even strings are iterable objects, they contain a sequence of characters:**

*for x in "akash": print(x)*

*a k a s h*

1. **The break Statement:**

With the break statement we can stop the loop before it has looped through all the items:

*Friends = ["akash", "viram", "suraj"]*

*for x in Friends: print(x)*

*if x == "viram": break*

*akash viram*

## The range() Function

To loop through a set of code a specified number of times, we can use the range() function,

The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.

1. *for x in range(5): print(x)*

*0*

*1*

*2*

*3*

*4*

1. *for x in range(2,5): print(x)*

*2*

*3*

*4*

1. Else in For Loop

The else keyword in a for loop specifies a block of code to be executed when the loop is finished

for x in range(7):

print(x) else:

print("Finally finished!")

0

1

2

3

4

5

6

Finally finished!

1. The pass Statement

for loops cannot be empty, but if you for some reason have a for loop with no content, put in the pass statement to avoid getting an error.

*for x in [0, 2, 3]: pass*

# #Nested Loops

A nested loop is a loop inside a loop.

The "inner loop" will be executed one time for each iteration of the "outer loop":

#### A]

NAME = ["AKASH", "VIRAM", "SURAJ"] SURNAME = ["YADAV", "YADVANSHI", "AHIR",]

for x in NAME:

for y in SURNAME: print(x, y)

AKASH YADAV AKASH YADVANSHI AKASH AHIR VIRAM YADAV VIRAM YADVANSHI VIRAM AHIR

SURAJ YADAV SURAJ YADVANSHI SURAJ AHIR

**B] Printing multiplication table using Python nested for loops :**

# Running outer loop from 2 to 3 for i in range(4, 6):

# Printing inside the outer loop

# Running inner loop from 1 to 10 for j in range(1, 11):

# Printing inside the inner loop print(i, "\*", j, "=", i\*j)

# Printing inside the outer loop print()

|  |  |
| --- | --- |
| 4 \* 1 = 4 | 5 \* 1 = 5 |
| 4 \* 2 = 8 | 5 \* 2 = 10 |
| 4 \* 3 = 12 | 5 \* 3 = 15 |
| 4 \* 4 = 16 | 5 \* 4 = 20 |
| 4 \* 5 = 20 | 5 \* 5 = 25 |
| 4 \* 6 = 24 | 5 \* 6 = 30 |
| 4 \* 7 = 28 | 5 \* 7 = 35 |
| 4 \* 8 = 32 | 5 \* 8 = 40 |
| 4 \* 9 = 36 | 5 \* 9 = 45 |
| 4 \* 10 = 40 | 5 \* 10 = 50 |