LOOPS IN PYTHON

**Loops in Python: A Deep Dive**

Welcome to our journey into the heart of Python loops. This presentation will explore the different types of loops, their syntax and best practices. Join us to master the art of looping in Python!

**What are Loops?**

LOOP STATEMENTS are also called as ITERATIVE STATEMENTS

Loops in programming are a way to make the computer do the same thing multiple times without

writing the same code again and again. They are useful for tasks that repeat, like going through a list,

**How many types of loops?**

**For loop**

Used when you know how many times you want to repeat something.

Example: "Print

numbers from 1 to 10."

**While loop**

Used when you want to repeat something as long as a condition is true.

Example: "Keep asking

for the password until

it’s correct."

**EXAMPLES FOR FOR LOOP**

**#1 numbers = [1, 2, 3, 4, 5]**

**for number in numbers:**

**print(number)**

**OUTPUT**

**1**

**2**

**3**

**4**

**5**

**#2 for i in range(5): # Iterates from 0 to 4**

**print(f"Iteration {i}")**

**Iteration 0**

**Iteration 1**

**Iteration 2**

**Iteration 3**

**Iteration 4**

**# Loop from 1 to 5 (i value immutable)  
for i in range(1, 6):  
 print(i)  
  
  
  
#for loop with list  
fruits = ["apple", "banana", "cherry"]  
for fruit in fruits:  
 print(fruit)  
  
  
#for loop with tuple  
x='ammu'  
for i in x:  
 print(i)  
  
#loop from 11 to 20  
for i in range(11,21,3):  
 print(i)  
  
  
#for to get values reverse  
for i in range(21,11,-1):  
 print(i)  
  
  
#for loop to get only divisible with 5  
for i in range(10,21):  
 if i%5==0:  
 print(i)  
  
  
#for loop not divisible by 5  
for i in range(10,21):  
 if i%5!=0:  
 print(i)  
  
  
#sum of elements in list  
numbers = [1, 2, 3, 4, 5]  
s=0  
for i in numbers:  
 s+=i  
print("Total with for loop:", s)  
total =sum(numbers)  
print('Total sum with sum function:', total)  
  
  
#nested for loop to mutlipy table  
for i in range(1, 4):  
 for j in range(1, 4):  
 print(i \* j, end=" ")  
 print()**

**WHILE LOOP EXAMPLES**

**#print numbers  
i = 1  
while i <= 10:  
 print(i)#This code will result in an infinite loop because the value of i is never updated  
  
  
#2  
i=1  
while i<=10:  
 print(i)  
 i=i+1  
  
  
  
# Sum of numbers 1 to 10 using a while loop  
i = 1  
total = 0  
while i <= 10:  
 total += i  
 i += 1  
print("Total sum:", total)  
  
  
  
#count down from 10 to 1  
i = 10  
while i >= 1:  
 print(i)  
 i -= 1  
  
#infinite loop with break condition  
i = 1  
while True:  
 print(i)  
 if i == 5:  
 break  
 i += 1  
  
  
  
#continues statement  
i = 0  
while i < 5:  
 i += 1  
 if i == 3: # Skip when i is 3  
 continue  
 print(i)  
  
#nested while loop  
i = 1  
while i <= 3:  
 j = 1  
 while j <= 3:  
 print(f"i = {i}, j = {j}")  
 j += 1  
 i += 1**