

Python

1. Arithmetic Operators

```
a=46
b=4
print("For a=",a," and b=",b,"\\n Calculate the following")
print('1. Addition of two numbers: a+b=',a+b)
print('2. Subtraction of two numbers: a-b=',a-b)
print('3. Multiplication of two numbers: a * b =', a * b)
print('4. Division of two numbers: a / b =', a / b)
print('5. Floor division of two numbers: a // b =',a // b)
print('6. Remainder of two numbers: a mod b =', a % b)
print('7. Exponent of two numbers: a ^ b =',a ** b)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
For a= 46 and b= 4
Calculate the following
1. Addition of two numbers: a+b= 50
2. Subtraction of two numbers: a-b= 42
3. Multiplication of two numbers: a * b = 184
4. Division of two numbers: a / b = 11.5
5. Floor division of two numbers: a // b = 11
6. Remainder of two numbers: a mod b = 2
7. Exponent of two numbers: a ^ b = 4477456

Process finished with exit code 0
```

2. Comparison Operator

```
a = 46
b = 4
print("For a =", a, "and b =", b,"\\nCheck the following:")
print('1. Two numbers are equal or not:', a == b)
print('2. Two numbers are not equal or not:', a != b)
print('3. a is less than or equal to b:', a <= b)
print('4. a is greater than or equal to b:', a >= b)
print('5. a is greater b:', a > b)
print('6. a is less than b:', a < b)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
For a = 46 and b = 4
Check the following:
1. Two numbers are equal or not: False
2. Two numbers are not equal or not: True
3. a is less than or equal to b: False
4. a is greater than or equal to b: True
5. a is greater b: True
6. a is less than b: False

Process finished with exit code 0
|
```

Activate Window

3. Assignment Operator

```
a = 34
b = 6
print('a += b:', a + b)
print('a -= b:', a - b)
print('a *= b:', a * b)
print('a /= b:', a / b)
print('a %= b:', a % b)
print('a **= b:', a ** b)
print('a //=: b:', a // b)
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
a += b: 40
a -= b: 28
a *= b: 204
a /= b: 5.666666666666667
a %= b: 4
a **= b: 1544804416
a //=: b: 5

Process finished with exit code 0
```

4. Logical Operator

```
a = 7
b = 8
print('a & b :', a & b)
print('a | b :', a | b)
print('a ^ b :', a ^ b)
print('~a :', ~a)
print('a << b :', a << b)
print('a >> b :', a >> b)
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
a & b : 0
a | b : 15
a ^ b : 15
~a : -8
a << b : 1792
a >> b : 0

Process finished with exit code 0
```

5. Bitwise Operator

```
a = 7
print("For a = 7, checking whether the following conditions are True or False:")
print('\'a > 5 and a < 7\' =>', a > 5 and a < 7)
print('\'a > 5 or a < 7\' =>', a > 5 or a < 7)
print('\'not (a > 5 and a < 7)\' =>', not(a > 5 and a < 7))
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
For a = 7, checking whether the following conditions are True or False:
"a > 5 and a < 7" => False
"a > 5 or a < 7" => True
"not (a > 5 and a < 7)" => True
```

6. Membership Operator

```
myList = [12, 22, 28, 35, 42, 49, 54, 65, 92, 103, 245, 874]

x = 31
y = 28
print("Given List:", myList)
if (x not in myList):
    print("x =", x, "is NOT present in the given list.")
else:
    print("x =", x, "is present in the given list.")
if (y in myList):
    print("y =", y, "is present in the given list.")
else:
    print("y =", y, "is NOT present in the given list.")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Given List: [12, 22, 28, 35, 42, 49, 54, 65, 92, 103, 245, 874]
x = 31 is NOT present in the given list.
y = 28 is present in the given list.

Process finished with exit code 0
|
```

7. Identity Operator

```
a = ["Rose", "Lotus"]
b = ["Rose", "Lotus"]
c = a

print("a is c => ", a is c)
print("a is not c => ", a is not c)
print("a is b => ", a is b)
print("a is not b => ", a is not b)
print("a == b => ", a == b)
print("a != b => ", a != b)
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
a is c => True
a is not c => False
a is b => False
a is not b => True
a == b => True
a != b => False

Process finished with exit code 0
|
```

8. Reverse a String using for loop

```
def reverse_string(str):    1 usage
    str1 = ""
    for i in str:
        str1 = i + str1
    return str1
str = "JavaTpoint" # Given String
print("The original string is: ",str)
print("The reverse string is",reverse_string(str))
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The original string is: JavaTpoint
The reverse string is tniopTavaJ

Process finished with exit code 0
|
```

9. Reverse a String using while loop

```
str = "JavaTpoint" # string variable
print ("The original string is : ",str)
reverse_String = "" # Empty String
count = len(str) # Find length of a string and save in count variable
while count > 0:
    reverse_String += str[ count - 1 ] # save the value of str[count-1] in reverseString
    count = count - 1 # decrement index
print ("The reversed string using a while loop is : ",reverse_String)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The original string is : JavaTpoint
The reversed string using a while loop is : tniopTavaJ

Process finished with exit code 0
```

10. Reverse a string using slice Operator

```
def reverse(str):
    str = str[::-1]
    return str

s = "JavaTpoint"
print ("The original string is : ",s)
print ("The reversed string using extended slice operator is : ",reverse(s))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The original string is : JavaTpoint
The reversed string using a while loop is : tniopTavaJ

Process finished with exit code 0
```

11. Reverse a string using reverse function

```
def reverse(str):
    string = "".join(reversed(str)) # reversed() function inside the join() function
    return string

s = "JavaTpoint"
print ("The original string is : ",s)
print ("The reversed string using reversed() is : ",reverse(s))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The original string is : JavaTpoint
The reversed string using a while loop is : tniopTavaJ

Process finished with exit code 0
```

12. Reverse a string using recursion

```
def reverse(str):
    if len(str) == 0: # Checking the lenght of string
        return str
    else:
        return reverse(str[1:]) + str[0]
str = "JavaTpoint"
print ("The original string is : ", str)
print ("The reversed string(using recursion) is : ", reverse(str))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The original string is : JavaTpoint
The reversed string using a while loop is : tniopTavaJ

Process finished with exit code 0
```

13. Read CSV file in Python

```
import csv
with open(r'C:\Users\Administrator\Downloads\student_records.csv') as csv_file:
    csv_read = csv.reader(csv_file, delimiter=',') #Delimeter is comma
    count_line = 0
    for row in csv_read:
        if count_line == 0:
            print(f'Column names are {", ".join(row)}')
            count_line += 1
        else:
            print(f'\t{row[0]} roll number is: {row[1]} and department is: {row[2]}.')
            count_line += 1
    print(f'Processed {count_line} lines.')
|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Column names are Name, Roll Number, Department
John Doe roll number is: 101 and department is: Computer Science.
Jane Smith roll number is: 102 and department is: Mechanical Engineering.
Alice Johnson roll number is: 103 and department is: Electrical Engineering.
Bob Brown roll number is: 104 and department is: Civil Engineering.
Charlie White roll number is: 105 and department is: Information Technology.
Processed 6 lines.

Process finished with exit code 0
```

14. The if statement

```
num = int(input("enter the number:"))
if num%2 == 0:
    print("The Given number is an even number")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
enter the number:20
The Given number is an even number

Process finished with exit code 0
```

15. Program to print the largest of the three numbers.

```
a = int (input("Enter a: "))
b = int (input("Enter b: "))
c = int (input("Enter c: "))
if a>b and a>c:
    print("From the above three numbers given a is largest")
if b > a and b > c:
    print("From the above three numbers given b is largest")
if c > a and c > b:
    print("From the above three numbers given c is largest")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Enter a: 19
Enter b: 10
Enter c: 20
From the above three numbers given c is largest

Process finished with exit code 0
```

16. Program to check whether a person is eligible to vote or not.

```
age = int(input("Enter your age: "))
if age >= 18:
    print("You are eligible to vote !!")
else:
    print("Sorry! you have to wait !!")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Enter your age: 22
You are eligible to vote !!

Process finished with exit code 0
```

17. Program to check whether a number is even or not.

```
num = int(input("enter the number:"))
if num % 2 == 0:
    print("The Given number is an even number")
else:
    print("The Given Number is an odd number")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
enter the number:23
The Given Number is an odd number

Process finished with exit code 0
```

18. The elif statement

```
number = int(input("Enter the number?"))
if number == 10:
    print("The given number is equals to 10")
elif number == 50:
    print("The given number is equal to 50");
elif number == 100:
    print("The given number is equal to 100");
else:
    print("The given number is not equal to 10, 50 or 100");
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Enter the number?100
The given number is equal to 100

Process finished with exit code 0
```

19. Checking for marks

```
marks = int(input("Enter the marks? "))
if marks > 85 and marks <= 100:
    print("Congrats ! you scored grade A ...")
elif marks > 60 and marks <= 85:
    print("You scored grade B + ...")
elif marks > 40 and marks <= 60:
    print("You scored grade B ...")
elif (marks > 30 and marks <= 40):
    print("You scored grade C ...")
else:
    print("Sorry you are fail ?")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Enter the marks? 95
Congrats ! you scored grade A ...

Process finished with exit code 0
```

20. The for Loop

```
numbers = [4, 2, 6, 7, 3, 5, 8, 10, 6, 1, 9, 2]
square = 0
squares = []
for value in numbers:
    square = value ** 2
    squares.append(square)
print("The list of squares is", squares)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The list of squares is [16, 4, 36, 49, 9, 25, 64, 100, 36, 1, 81, 4]

Process finished with exit code 0
```

21. Using else Statement with for Loop

```
string = "Python Loop"
for s in string:
    if s == "o":
        print("If block")
    else:
        print(s)|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
P
y
t
h
If block
n

L
If block
If block
p

Process finished with exit code 0
```

22. Using else Statement with for Loop

```
tuple_ = (3, 4, 6, 8, 9, 2, 3, 8, 9, 7)
for value in tuple_:
    if value % 2 != 0:
        print(value)
else:
    print("These are the odd numbers present in the tuple")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
3
9
3
9
7
These are the odd numbers present in the tuple
```

23. The range() Function

```
print(range(15))
print(list(range(15)))
print(list(range(4, 9)))
print(list(range(5, 25, 4)))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
range(0, 15)
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
[4, 5, 6, 7, 8]
[5, 9, 13, 17, 21]

Process finished with exit code 0
```

24. The range() Function

```
tuple_ = ("Python", "Loops", "Sequence", "Condition", "Range")
for iterator in range(len(tuple_)):
    print(tuple_[iterator].upper())
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
PYTHON
LOOPS
SEQUENCE
CONDITION
RANGE

Process finished with exit code 0
```

25. While Loop

```
counter = 0
while counter < 10: # giving the condition
    counter = counter + 3
    print("Python Loops")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Python Loops
Python Loops
Python Loops
Python Loops

Process finished with exit code 0
```

26. Using else Statement with while Loops

```
counter = 0
while (counter < 10):
    counter = counter + 3
    print("Python Loops") # Executed until condition is met
else:
    print("Code block inside the else statement")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Python Loops
Python Loops
Python Loops
Python Loops
Python Loops
Code block inside the else statement
```

27. Single statement while Block

```
counter = 0
while (counter < 3): print("Python Loops")
```

Output

```
Python Loops
Python Loops
Python Loops
Python Loops
```

30. Continue Statement

```
for string in "Python Loops":  
    if string == "o" or string == "p" or string == "t":  
        continue  
    print('Current Letter:', string) |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
Current Letter: P  
Current Letter: y  
Current Letter: h  
Current Letter: n  
Current Letter:  
Current Letter: L  
Current Letter: s  
  
Process finished with exit code 0
```

31. Break Statement

```
for string in "Python Loops":  
    if string == 'L':  
        break  
    print('Current Letter: ', string)|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
Current Letter: P  
Current Letter: y  
Current Letter: t  
Current Letter: h  
Current Letter: o  
Current Letter: n  
Current Letter:  
  
Process finished with exit code 0
```

32. Pass Statement

```
for string in "Python Loops":  
    pass  
    print('Last Letter:', string)|
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
Last Letter: s  
  
Process finished with exit code 0
```

33. For loop

```
numbers = [3, 5, 23, 6, 5, 1, 2, 9, 8]
sum_ = 0
for num in numbers:
    sum_ = sum_ + num ** 2
print("The sum of squares is: ", sum_)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The sum of squares is: 774

Process finished with exit code 0
```

34. The range() Function

```
my_list = [3, 5, 6, 8, 4]
for iter_var in range( len( my_list ) ):
    my_list.append(my_list[iter_var] + 2)
print( my_list ) |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
[3, 5, 6, 8, 4, 5, 7, 8, 10, 6]

Process finished with exit code 0
```

35. Iterating by Using Index of Sequence

```
1  numbers = [3, 5, 23, 6, 5, 1, 2, 9, 8]
2  sum_ = 0
3  for num in range( len(numbers) ):
4      sum_ = sum_ + numbers[num] ** 2
5  print("The sum of squares is: ", sum_) |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The sum of squares is: 774

Process finished with exit code 0
```

36. Using else Statement with for Loop

```
student_name_1 = 'Itika'
student_name_2 = 'Parker'
records = {'Itika': 90, 'Arshia': 92, 'Peter': 46}
def marks( student_name ): 2 usages
    for a_student in records:
        if a_student == student_name:
            return records[ a_student ]
        break
    else:
        return f'There is no student of name {student_name} in the records'
print( f"Marks of {student_name_1} are: ", marks( student_name_1 ) )
print( f"Marks of {student_name_2} are: ", marks( student_name_2 ) )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Marks of Itika are: 90
Marks of Parker are: There is no student of name Parker in the records

Process finished with exit code 0
```

37. Nested Loops

```
import random
numbers = [ ]
for val in range(0, 11):
    numbers.append( random.randint( a: 0, b: 11 ) )
for num in range( 0, 11 ):
    for i in numbers:
        if num == i:
            print( num, end = " " )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
3 3 4 5 5 5 6 6 7 9
Process finished with exit code 0
```

38. While Loops

```
i=1
while i<=10:
    print(i, end=' ')
    i+=1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
1 2 3 4 5 6 7 8 9 10
Process finished with exit code 0
```

39. While Loops

```
i=1
while i<51:
    if i%5 == 0 or i%7==0 :
        print(i, end=' ')
    i+=1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
5 7 10 14 15 20 21 25 28 30 35 40 42 45 49 50
Process finished with exit code 0
```

40. While Loop

```
num = 15
summation = 0
c = 1
while c <= num:
    summation = c**2 + summation
    c = c + 1
print("The sum of squares is", summation)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The sum of squares is 1240
Process finished with exit code 0
```

41. Prime Numbers

```
num = [34, 12, 54, 23, 75, 34, 11]
def prime_number(number): 1 usage
    condition = 0
    iteration = 2
    while iteration <= number / 2:
        if number % iteration == 0:
            condition = 1
            break
        iteration = iteration + 1
    if condition == 0:
        print(f"{number} is a PRIME number")
    else:
        print(f"{number} is not a PRIME number")
for i in num:
    prime_number(i)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
34 is not a PRIME number
12 is not a PRIME number
54 is not a PRIME number
23 is a PRIME number
75 is not a PRIME number
34 is not a PRIME number
11 is a PRIME number

Process finished with exit code 0
```

42. Armstrong

```
n = int(input())
n1=str(n)
l=len(n1)
temp=n
s=0
while n!=0:
    r=n%10
    s=s+(r**l)
    n=n//10
if s==temp:
    print("It is an Armstrong number")
else:
    print("It is not an Armstrong number ")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
153
It is an Armstrong number

Process finished with exit code 0
```

43. Multiplication Table using While Loop

```
num = 21
counter = 1
print("The Multiplication Table of: ", num)
while counter <= 10: # specifying the condition
    ans = num * counter
    print (num, 'x', counter, '=', ans)
    counter += 1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\sc
The Multiplication Table of:  21
21 x 1 = 21
21 x 2 = 42
21 x 3 = 63
21 x 4 = 84
21 x 5 = 105
21 x 6 = 126
21 x 7 = 147
21 x 8 = 168
21 x 9 = 189
21 x 10 = 210

Process finished with exit code 0
```

44. Python While Loop with List

```
list_ = [3, 5, 1, 4, 6]
squares = []
while list_:
    squares.append( (list_.pop())**2)
print( squares )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
[36, 16, 1, 25, 9]

Process finished with exit code 0
```

45. Odd and Even number

```
1     list_ = [3, 4, 8, 10, 34, 45, 67, 80]
2     index = 0
3     while index < len(list_):
4         element = list_[index]
5         if element % 2 == 0:
6             print('It is an even number')
7         else:
8             print('It is an odd number')
9     index += 1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
It is an odd number
It is an even number
It is an odd number
It is an odd number
It is an even number

Process finished with exit code 0
```

46. Python While Loop with List

```
List_= ['Priya', 'Neha', 'Cow', 'To']
index = 0
while index < len(List_):
    element = List_[index]
    print(len(element))
    index += 1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
5
4
3
2
```

47. Python While Loop Multiple Conditions

```
num1 = 17
num2 = -12
while num1 > 5 and num2 < -5 :
    num1 -= 2
    num2 += 3
    print( (num1, num2) )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
(15, -9)
(13, -6)
(11, -3)
```

48. Python While Loop Multiple Conditions

```
num1 = 17
num2 = -12
while num1 > 5 or num2 < -5 :
    num1 -= 2
    num2 += 3
    print( (num1, num2) )
```

Output

```
(11, -3)
(9, 0)
(7, 3)
(5, 6)

Process finished with exit code 0
```

49. Python While Loop Multiple Conditions

```
num1 = 9
num2 = 14
maximum_value = 4
counter = 0
while (counter < num1 or counter < num2) and not counter >= maximum_value:
    print(f"Number of iterations: {counter}")
    counter += 1
```

Output

```
Number of iterations: 0
Number of iterations: 1
Number of iterations: 2
Number of iterations: 3

Process finished with exit code 0
```

50. Loop Control Statements

```
for string in "While Loops":
    if string == "o" or string == "l" or string == "e":
        continue
    print('Current Letter:', string)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Current Letter: W
Current Letter: h
Current Letter: l
Current Letter:
Current Letter: L
Current Letter: p
Current Letter: s
```

51. Break Statement

```
for string in "Python Loops":
    if string == 'n':
        break
    print('Current Letter: ', string)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Current Letter: P
Current Letter: y
Current Letter: t
Current Letter: h
Current Letter: o

Process finished with exit code 0
```

52. Pass Statement

```
for string in "Python Loops":
    pass
print('The Last Letter of given string is:', string)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
The Last Letter of given string is: s

Process finished with exit code 0
```

53. Break statement with for loop

```
my_list = [1, 2, 3, 4]
count = 1
for item in my_list:
    if item == 4:
        print("Item matched")
        count += 1
    break
print("Found at location", count)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Item matched
Found at location 2

Process finished with exit code 0
```

54. Breaking out of a loop early

```
my_str = "python"
for char in my_str:
    if char == 'o':
        break
    print(char) |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
p
y
t
h

Process finished with exit code 0
```

55. Break statement with while loop

```
i = 0
while 1:
    print(i, " ",end="")
    i=i+1
    if i == 10:
        break
print("came out of while loop")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
0 1 2 3 4 5 6 7 8 9  came out of while loop

Process finished with exit code 0
```

56. Break statement with nested loops

```
n = 2
while True:
    i = 1
    while i <= 10:
        print("%d X %d = %d\n" % (n, i, n * i))
        i += 1
    choice = int(input("Do you want to continue printing the table? Press 0 for no: "))
    if choice == 0:
        print("Exiting the program...")
        break
    n += 1
print("Program finished successfully.")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
2 X 1 = 2

2 X 2 = 4

2 X 3 = 6

2 X 4 = 8

2 X 5 = 10

2 X 6 = 12

2 X 7 = 14

2 X 8 = 16

2 X 9 = 18

2 X 10 = 20

Do you want to continue printing the table? Press 0 for no: 1
3 X 1 = 3
```

57. Python continue Statement

```
for iterator in range(10, 21):
    if iterator == 15:
        continue
    print(iterator)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administr
10
11
12
13
14
16
17
18
19
20

Process finished with exit code 0
```

58. Python Continue Statements in for Loop

```
1 string = "JavaTpoint"
2 iterator = 0
3 while iterator < len(string):
4     if string[iterator] == 'a':
5         iterator += 1
6         continue
7     print(string[iterator])
8     iterator += 1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.p
J
v
T
p
o
i
n
t
```

59. Python Continue Statements in while Loop

```
string = "JavaTpoint"
iterator = 0
while iterator < len(string):
    if string[iterator] == 'a':
        iterator += 1
        continue
    print(string[ iterator ])
    iterator += 1
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
J
v
T
p
o
i
n
t

Process finished with exit code 0
```

60. Python Continue statement in list comprehension

```
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
sq_num = [num ** 2 for num in numbers if num % 2 == 0]
print(sq_num)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
[4, 16, 36, 64, 100]

Process finished with exit code 0
```

61. Creating String in Python

```
str1 = 'Hello Python'
print(str1)
str2 = "Hello Python"
print(str2)
str3 = '''Triple quotes are generally used for
represent the multiline or
docstring'''
print(str3)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Hello Python
Hello Python
'''Triple quotes are generally used for
represent the multiline or
docstring

Process finished with exit code 0
```

62. Strings indexing and splitting

```
str = "HELLO"
print(str[0])
print(str[1])
print(str[2])
print(str[3])
print(str[4])
print(str[6])
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
H
E
L
L
O
Traceback (most recent call last): Explain with AI
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 7, in <module>
    print(str[6])
           ^
IndexError: string index out of range
```

63. Strings indexing and splitting

```
str = "JAVATPOINT"
print(str[0:])
print(str[1:5])
print(str[2:4])
print(str[:3])
print(str[4:7])
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
JAVATPOINT
AVAT
VA
JAV
TPO

Process finished with exit code 0
```

64. Strings indexing and splitting

```
str = "JAVATPOINT"
print(str[0:])
print(str[1:5])
print(str[2:4])
print(str[:3])
print(str[4:7])
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
JAVATPOINT
AVAT
VA
JAV
TPO
```

65. Strings indexing and splitting

```
str = 'JAVATPOINT'
print(str[-1])
print(str[-3])
print(str[-2:])
print(str[-4:-1])
print(str[-7:-2])
print(str[::-1])
print(str[-12])
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
T
I
NT
OIN
ATPOI
TNIOPTAVAJ
Traceback (most recent call last): Explain with AI
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 8, in <module>
    print(str[-12])
```

66. Reassigning Strings

```
str = "HELLO"  
str[0] = "h"  
print(str) |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
Traceback (most recent call last): Explain with AI  
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 2, in <module>  
    str[0] = "h"  
    ~~~^~  
TypeError: 'str' object does not support item assignment  
  
Process finished with exit code 1
```

67. Reassigning Strings

```
str = "HELLO"  
print(str)  
str = "hello"  
print(str)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
HELLO  
hello  
  
Process finished with exit code 0
```

68. Deleting the String

```
str = "JAVATPOINT"  
del str[1]
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py  
Traceback (most recent call last): Explain with AI  
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 2, in <module>  
    del str[1]  
    ~~~^~  
TypeError: 'str' object doesn't support item deletion  
  
Process finished with exit code 1
```

69. Deleting the String

```
str1 = "JAVATPOINT"
del str1
print(str1)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Traceback (most recent call last): Explain with AI
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 3, in <module>
    print(str1)
           ^
NameError: name 'str1' is not defined. Did you mean: 'str'?

Process finished with exit code 1
```

70. String Operators

```
str = "Hello"
str1 = " world"
print(str*3)
print(str+str1)
print(str[4])
print(str[2:4])
print('w' in str)
print('wo' not in str1)
print(r'C://python37')
print("The string str : %s"%(str))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
HelloHelloHello
Hello world
0
ll
False
False
C://python37
The string str : Hello
```

71. Python String Formatting

```
str = "They said, "Hello what's going on?""
print(str)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
  File "C:\Users\Administrator\PyCharmMiscProject\script.py", line 1
    str = "They said, "Hello what's going on?"""
               ^
SyntaxError: unterminated string literal (detected at line 1)

Process finished with exit code 1
```

72. Python String Formatting

```
print(''''They said, "What's there?'''')
print('They said, "What\'s going on?"')
print("They said, \"What's going on?\")"
      :
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
'They said, "What's there?"
They said, "What's going on?"
They said, "What's going on?"

Process finished with exit code 0
```

73. Python String Formatting

```
print("C:\\\\Users\\\\DEVANSH SHARMA\\\\Python32\\\\Lib")
print("This is the \\n multiline quotes")
print("This is \\x48\\x45\\x58 representation") |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
C:\\\\Users\\\\DEVANSH SHARMA\\\\Python32\\\\Lib
This is the
multiline quotes
This is HEX representation

Process finished with exit code 0
```

74. Python String Formatting

```
print(r"C:\\\\Users\\\\DEVANSH SHARMA\\\\Python32") |
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
C:\\\\Users\\\\DEVANSH SHARMA\\\\Python32

Process finished with exit code 0
```

75. The format() method

```
print("{} and {} both are the best friend".format(*args: "Devansh","Abhishek"))
print("{1} and {0} best players ".format(*args: "Virat","Rohit"))
print("{a},{b},{c}".format(a = "James", b = "Peter", c = "Ricky"))
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Devansh and Abhishek both are the best friend
Rohit and Virat best players
James,Peter,Ricky

Process finished with exit code 0
```

76. Python String Formatting Using % Operator

```
Integer = 10
Float = 1.290
String = "Devansh"
print("Hi I am Integer ... My value is %d\nHi I am float ... My value is %f\nHi I am string ... My value is %s")
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Hi I am Integer ... My value is 10
Hi I am float ... My value is 1.290000
Hi I am string ... My value is Devansh

Process finished with exit code 0
```

77. List and Tuple

```
list_ = [4, 5, 7, 1, 7]
tuple_ = (4, 1, 8, 3, 9)
print("List is: ", list_)
print("Tuple is: ", tuple_)
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
List is: [4, 5, 7, 1, 7]
Tuple is: (4, 1, 8, 3, 9)

Process finished with exit code 0
```

78. List and tuple

```
list_ = [4, 5, 7, 1, 7]
tuple_ = (4, 1, 8, 3, 9)
print( type(list_) )
print( type(tuple_) )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
<class 'list'>
<class 'tuple'>

Process finished with exit code 0
```

79. Mutable List vs. Immutable Tuple

```
list_ = ["Python", "Lists", "Tuples", "Differences"]
tuple_ = ("Python", "Lists", "Tuples", "Differences")
list_[3] = "Mutable"
print( list_ )
try:
    tuple_[3] = "Immutable"
    print( tuple_ )
except TypeError:
    print( "Tuples cannot be modified because they are immutable" )
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
['Python', 'Lists', 'Tuples', 'Mutable']
Tuples cannot be modified because they are immutable

Process finished with exit code 0
```

80. Size Difference

```
1  list_ = ["Python", "Lists", "Tuples", "Differences"]
2  tuple_ = ("Python", "Lists", "Tuples", "Differences")
3  print("Size of tuple: ", tuple_.__sizeof__())
4  print("Size of list: ", list_.__sizeof__())
```

Output

```
C:\Users\Administrator\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\Administrator\PyCharmMiscProject\script.py
Size of tuple: 56
Size of list: 72

Process finished with exit code 0
```