1 Program to Check Whether a Number is Positive or Negative

```
num = float(input("Enter a number: "))
if num > 0:
   print("The number is positive.")
elif num < 0:
   print("The number is negative.")
else:
   print("The number is zero.")
```

OutPut:

Enter a number: 4

The number is positive.

2 Program to Reverse a Number

```
num = int(input("Enter a number: "))
reversed_num = int(str(num)[::-1])
print(f"Reversed Number: {reversed_num}")
```

OutPut:

Enter a number: 3456

Reversed Number: 6543

3 Program to Check given number is odd or even

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("The number is Even.")
else:
    print("The number is Odd.")
```

OutPut:

Enter a number: 7

The number is Odd.

4 Program to Count the Number of Digits in a Number

```
num = input("Enter a number: ")
print(f"Number of digits: {len(num)}")
```

OutPut:

Enter a number: 5678

Number of digits: 4

5 Program to Check given number is prime or not prime

```
def is_prime(n):
    if n <= 1:
        return False
    for i in range(2, int(n ** 0.5) + 1):
        if n % i == 0:
            return False
    return True

num = int(input("Enter a number: "))
if is_prime(num):
    print("The number is Prime.")
else:
    print("The number is Not Prime.")
```

OutPut:

Enter a number: 59

The number is Prime.

6 Program to Find Sum and of any ten numbers

```
numbers = []
for i in range(10):
    n = float(input(f"Enter number {i+1}: "))
    numbers.append(n)

total_sum = sum(numbers)
print(f"Sum of the numbers: {total_sum}")
```

OutPut:

```
Enter number 1: 3
Enter number 2: 5
Enter number 3: 67
Enter number 4: 23
Enter number 5: 5
Enter number 6: 89
Enter number 7: 45
Enter number 8: 3
Enter number 9: 6
Enter number 10: 9
Sum of the numbers: 255.0
```

7 Program to Print Numbers in a Range Without using Loops

```
start = int(input("Enter start of range: "))
end = int(input("Enter end of range: "))
print(f"Numbers in range ({start}, {end}): {list(range(start, end+1))}")
```

OutPut:

Enter start of range: 5

Enter end of range: 18

Numbers in range (5, 18): [5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18]

8 Program to accept our subject marks and find the percentage and grades

```
subjects = int(input("Enter the number of subjects: "))
total_marks = 0

for i in range(subjects):
    marks = float(input(f"Enter marks for subject {i+1}: "))
    total_marks += marks

percentage = (total_marks / (subjects * 100)) * 100

if percentage >= 90:
    grade = "A+"
elif percentage >= 80:
    grade = "A"
elif percentage >= 70:
    grade = "B"
elif percentage >= 60:
    grade = "C"
else:
    grade = "D"

print(f"Total Marks: {total_marks}")
print(f"Percentage: {percentage:.2f}%")
print(f"Grade: {grade}")
```

OutPut:

```
Enter the number of subjects: 4
Enter marks for subject 1: 78
Enter marks for subject 2: 82
```

Enter marks for subject 3: 90

Enter marks for subject 4: 44

Total Marks: 294.0

Percentage: 73.50%

Grade: B

9 Program to Find Fibonacci Numbers using function

```
def fibonacci(n):
    fib_series = [0, 1]
    for i in range(2, n):
        fib_series.append(fib_series[-1] + fib_series[-2])
    return fib_series[:n]

n = int(input("Enter the number of Fibonacci terms: "))
print("Fibonacci Series:", fibonacci(n))
```

OutPut:

Enter the number of Fibonacci terms: 10

Fibonacci Series: [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]

10 Program to Find Factorial Numbers using function

```
def factorial(n):
    result = 1
    for i in range(1, n+1):
        result *= i
    return result

num = int(input("Enter a number: "))
print(f"Factorial of {num}: {factorial(num)}")
```

OutPut:

Enter a number: 5

Factorial of 5: 120

11 Program to Find Fibonacci Numbers using function

```
def fibonacci_recursive(n):
    if n <= 1:
        return n
    return fibonacci_recursive(n-1) + fibonacci_recursive(n-2)

n = int(input("Enter the number of Fibonacci terms: "))
print("Fibonacci Series:", [fibonacci_recursive(i) for i in range(n)])
```

OutPut:

```
Enter the number of Fibonacci terms: 9
Fibonacci Series: [0, 1, 1, 2, 3, 5, 8, 13, 21]
```

12 Program to Find Factorial Numbers using Recursion

```
def factorial_recursive(n):
    if n == 0 or n == 1:
        return 1
    return n * factorial_recursive(n-1)

num = int(input("Enter a number: "))
print(f"Factorial of {num}: {factorial_recursive(num)}")
```

OutPut:

Enter a number: 4

Factorial of 4: 24

13 Program to create Arithmetic module which has Addition, substruction, multiplications and Division functions

```
#arithmetic.py
def add(a, b):
    return a + b

def subtract(a, b):
    return a - b

def multiply(a, b):
    return a * b

def divide(a, b):
    return a / b if b != 0 else "Division by zero not allowed."
```

```
#main.py
from arithmetic import add, subtract, multiply, divide

a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

print("Addition:", add(a, b))
print("Subtraction:", subtract(a, b))
print("Multiplication:", multiply(a, b))
print("Division:", divide(a, b))
```

OutPut:

Enter first number: 50

Enter second number: 40

Addition: 90.0

Subtraction: 10.0

Multiplication: 2000.0

Division: 1.25

14 Program to create Area Module which has area of triangle ,square, rectangle and circle functions

```
#area_module.py
import math

def area_of_triangle(base, height):
    return 0.5 * base * height

def area_of_square(side):
    return side * side

def area_of_rectangle(length, width):
    return length * width

def area_of_circle(radius):
    return math.pi * radius * radius



#main.py
from area_module import area_of_triangle, area_of_square, area_of_rectangle, area_of_circle

print("Choose an option:")
print("1. Area of Triangle\n2. Area of Square\n3. Area of Rectangle\n4. Area of Circle")
choice = int(input("Enter your choice: "))

if choice == 1:
    base = float(input("Enter base: "))
    height = float(input("Enter height: "))
    print(f"Area of Triangle: {area_of_triangle(base, height)}")
elif choice == 2:
    side = float(input("Enter side: "))
```

```
    print(f"Area of Square: {area_of_square(side)}")
elif choice == 3:
    length = float(input("Enter length: "))
    width = float(input("Enter width: "))
    print(f"Area of Rectangle: {area_of_rectangle(length, width)}")
elif choice == 4:
    radius = float(input("Enter radius: "))
    print(f"Area of Circle: {area_of_circle(radius)}")
else:
    print("Invalid choice!")
```

OutPut:

```
Choose an option:
1. Area of Triangle
2. Area of Square
3. Area of Rectangle
4. Area of Circle
Enter your choice: 3
Enter length: 22
Enter width: 25
Area of Rectangle: 550.0
```

15 Program to use of buit-in library function

```
import math

# User input for number
number = float(input("Enter a number to find its square root: "))
print("Square root of", number, "is", math.sqrt(number))
```

OutPut:

```
Enter a number to find its square root: 49
Square root of 49.0 is 7.0
```

16 Program to use of various built-in string function

```
string = input("Enter a string: ")

# Built-in string functions
print("Original String:", string)
print("Uppercase:", string.upper())
print("Lowercase:", string.lower())
print("Stripped String:", string.strip())
print("Replaced 'a' with 'e':", string.replace("a", "e"))
print("Split String:", string.split())
print("Find Position of 'Python':", string.find("Python"))
print("String Length:", len(string))
```

OutPut:

```
Enter a string: Python Programming
Original String: Python Programming
Uppercase: PYTHON PROGRAMMING
Lowercase: python programming
Stripped String: Python Programming
Replaced 'a' with 'e': Python Progremming
Split String: ['Python', 'Programming']
Find Position of 'Python': 0
String Length: 18
```

17 Python Program to Count the Number of Words and Characters in a String

```
string = input("Enter a string: ")

word_count = len(string.split())
char_count = len(string)

print("Number of words:", word_count)
print("Number of characters:", char_count)
```

OutPut:

Enter a string: Python Programming

Number of words: 2

Number of characters: 18

18 Program to create two Lists and merge them and sort

```
list1 = list(map(int, input("Enter numbers for List 1 (space-separated): ").split()))
list2 = list(map(int, input("Enter numbers for List 2 (space-separated): ").split()))

merged_list = list1 + list2
merged_list.sort()

print("Merged and sorted list:", merged_list)
```

OutPut:

```
Enter numbers for List 1 (space-separated): 2 3 5 9 45
Enter numbers for List 2 (space-separated): 34 2 15 45 3
Merged and sorted list: [2, 2, 3, 3, 5, 9, 15, 34, 45, 45]
```

19 Python Program to Check if a Key Exists in a Dictionary or Not

```
my_dict = {}
n = int(input("Enter number of key-value pairs: "))

for _ in range(n):
    key = input("Enter key: ")
    value = input("Enter value: ")
    my_dict[key] = value

check_key = input("Enter the key to check: ")

if check_key in my_dict:
    print(f"Key '{check_key}' exists with value '{my_dict[check_key]}'.")
else:
    print(f"Key '{check_key}' does not exist.")
```

OutPut:

```
Enter number of key-value pairs: 3
Enter key: 1
Enter value: one
Enter key: 2
Enter value: two
Enter key: 3
Enter value: three
Enter the key to check: 3
Key '3' exists with value 'three'.
```

20 Python Program to Find the Sum of All the Items in a Dictionary

```
my_dict = {}
n = int(input("Enter number of key-value pairs: "))

for _ in range(n):
    key = input("Enter key: ")
    value = int(input("Enter value: "))
    my_dict[key] = value

total = sum(my_dict.values())

print("Sum of all values in the dictionary:", total)
```

OutPut:

```
Enter number of key-value pairs: 4
Enter key: one
Enter value: 1
Enter key: two
Enter value: 2
Enter key: three
Enter value: 3
Enter key: four
Enter value: 4
Sum of all values in the dictionary: 10
```

21 Program to Create a List of Tuples with the First Element as the Number and Second Element as the Square of the Number

```
n = int(input("Enter the number of elements: "))
numbers = []

for i in range(n):
    num = int(input(f"Enter number {i+1}: "))
    numbers.append(num)

result = [(num, num**2) for num in numbers]

print("List of tuples (number, square):", result)
```

OutPut:

Enter the number of elements: 4

Enter number 1: 3

Enter number 2: 4

Enter number 3: 2

Enter number 4: 5

List of tuples (number, square): [(3, 9), (4, 16), (2, 4), (5, 25)]

22 Program to Create a Class which Performs Basic Calculator Operations

```
class Calculator:
    def add(self, a, b):
        return a + b

    def subtract(self, a, b):
        return a - b

    def multiply(self, a, b):
        return a * b

    def divide(self, a, b):
        return a / b if b != 0 else "Division by zero error"

calc = Calculator()

a = float(input("Enter the first number: "))
b = float(input("Enter the second number: "))

print("Addition:", calc.add(a, b))
print("Subtraction:", calc.subtract(a, b))
print("Multiplication:", calc.multiply(a, b))
print("Division:", calc.divide(a, b))
```

OutPut:

Enter the first number: 50

Enter the second number: 40

Addition: 90.0

Subtraction: 10.0

Multiplication: 2000.0

Division: 1.25

23 Program to Append, Delete and Display Elements of a List using Classes

```
class ListOperations:
    def __init__(self):
        self.my_list = []

    def append_element(self, element):
        self.my_list.append(element)

    def delete_element(self, element):
        if element in self.my_list:
            self.my_list.remove(element)
        else:
            print("Element not found!")

    def display_list(self):
        print("List:", self.my_list)

obj = ListOperations()

while True:
    print("\n1. Append\n2. Delete\n3. Display\n4. Exit")
    choice = int(input("Enter your choice: "))

    if choice == 1:
        element = int(input("Enter element to append: "))
        obj.append_element(element)
    elif choice == 2:
        element = int(input("Enter element to delete: "))
        obj.delete_element(element)
    elif choice == 3:
```

```
        obj.display_list()
    elif choice == 4:
        break
    else:
        print("Invalid choice! Try again.")
```

OutPut:

```
1. Append
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter element to append: 12

1. Append
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter element to append: 23

1. Append
2. Delete
3. Display
4. Exit
Enter your choice: 3
List: [12, 23]

1. Append
```

2. Delete

3. Display

4. Exit

Enter your choice: 2

Enter element to delete: 12

1. Append

2. Delete

3. Display

4. Exit

Enter your choice: 3

List: [23]

1. Append

2. Delete

3. Display

4. Exit

Enter your choice: 4

24 Python Program to Find the Area and Perimeter of the Circle using Class

```
class Circle:
    def __init__(self, radius):
        self.radius = radius

    def area(self):
        return 3.14 * self.radius ** 2

    def perimeter(self):
        return 2 * 3.14 * self.radius

radius = float(input("Enter the radius of the circle: "))
circle = Circle(radius)
print("Area of circle:", circle.area())
print("Perimeter of circle:", circle.perimeter())
```

OutPut:

```
Enter the radius of the circle: 4
Area of circle: 50.24
Perimeter of circle: 25.12
```

25 Python Program to Copy One File to Another File

```
source_file = input("Enter source file name: ")
destination_file = input("Enter destination file name: ")

with open(source_file, "r") as source:
    content = source.read()

with open(destination_file, "w") as destination:
    destination.write(content)

print("Content copied successfully!")
```

OutPut:

```
Enter source file name: c:/Users/Vishvajeet/Desktop/Practice/Python Practicles/25.py
Enter destination file name: demo.txt
Content copied successfully!
```

26 Python Program to Append the Content of One File to the End of Another File

```
source_file = input("Enter source file name: ")
destination_file = input("Enter destination file name: ")

with open(source_file, "r") as source:
    content = source.read()

with open(destination_file, "a") as destination:
    destination.write(content)

print("Content appended successfully!")
```

OutPut:

```
Enter source file name: c:/Users/Vishvajeet/Desktop/Practice/Python Practicles/26.py
Enter destination file name: demo2
Content appended successfully!
```

27 Python Program to Split Even and Odd Elements into Two Lists

```
numbers = list(map(int, input("Enter numbers (space-separated): ").split()))

even_list = [num for num in numbers if num % 2 == 0]
odd_list = [num for num in numbers if num % 2 != 0]

print("Even numbers:", even_list)
print("Odd numbers:", odd_list)
```

OutPut:

```
Enter numbers (space-separated): 1 2 3 4 5 6 7 8 9
Even numbers: [2, 4, 6, 8]
Odd numbers: [1, 3, 5, 7, 9]
```

28 Program to Generate Random Numbers from 1 to 20 and Append Them to the List

```
import random

n = int(input("Enter how many random numbers you want: "))
random_numbers = [random.randint(1, 20) for _ in range(n)]

print("Random numbers:", random_numbers)
```

OutPut:

Enter how many random numbers you want: 6

Random numbers: [16, 8, 12, 10, 19, 13]

29 Write program to use of exception handling with try..except..

```
try:
    num = int(input("Enter a number: "))
    print("Square of the number:", num ** 2)
except ValueError:
    print("Invalid input! Please enter an integer.")
```

OutPut:

Enter a number: 4.5

Invalid input! Please enter an integer.

30 Write program to implement user defined Exception.

```
class NegativeNumberError(Exception):
    pass

try:
    num = int(input("Enter a positive number: "))
    if num < 0:
        raise NegativeNumberError("Negative number entered!")
    print("You entered:", num)
except NegativeNumberError as e:
    print(e)
except ValueError:
    print("Invalid input! Please enter an integer.")
```

OutPut:

```
Enter a positive number: -3
Negative number entered!
```