<u>Output:</u>

Enter the radius of the circle: 7

Radius: 7.0

Perimeter (Circumference): 43.98

Area: 153.94

Date: 02/10/25

Program 1

Aim: Find the Area and Perimeter of a Circle

Source Code:

```python
import math

r = float(input("Enter the radius of the circle: "))

perimeter = 2 * math.pi * r
area = math.pi * r * r

print(f"Radius: {r}")
print(f"Perimeter (Circumference): {perimeter:.2f}")
print(f"Area: {area:.2f}")
```

Result: The program is executed and the output is obtained.

Output:

Enter first number: 2

Enter second number: 5

Before swap: a = 2 b = 5

After swap: a = 5 b = 2

Date: 02/10/25

Program 2

Aim: Swap two numbers

Source Code:

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


print("Before swap: a =", a, "b =", b)


temp = a
a = b
b = temp


print("After swap:  a =", a, "b =", b)
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Enter first number: 33

Enter second number: 45

Enter third number: 8

The largest number is: 45.0

Date: 02/10/25

Program 3

Aim: Find the largest of three numbers

Source Code:

```
a = float(input("Enter first number: "))

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

c = float(input("Enter third number: "))


if a >= b and a >= c:

   largest = a

elif b >= a and b >= c:

   largest = b

else:

   largest = c


print("The largest number is:", largest)
```

Result: The program is executed and the output is obtained.

Output:

Arithmetic Operations

3.0 + 3.0 = 6.0

3.0 - 3.0 = 0.0

3.0 * 3.0 = 9.0

3.0 / 3.0 = 1.0

3.0 // 3.0 = 1.0

3.0 % 3.0 = 0.0

3.0 ** 3.0 = 27.0

Date: 02/10/25

Program 4

Aim: Arithmetic Operations

Source Code:

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

print("Arithmetic Operations ")
print("----------------------------------")
print(f"{a} + {b} = {a + b}")
print(f"{a} - {b} = {a - b}")
print(f"{a} * {b} = {a * b}")
print(f"{a} / {b} = {a / b}")
print(f"{a} // {b} = {a // b}")
print(f"{a} % {b} = {a % b}")
print(f"{a} ** {b} = {a ** b}")
```

Result: The program is executed and the output is obtained.

<u>**Output:**</u>

Enter the number: 5

Enter how many multiples you want: 4

First 4 multiples of 5:

5

10

15

20

Date: 02/10/25

Program 5

Aim: Find the first N multiples of a number

Source Code:

```python
a = int(input("Enter the number: "))

n = int(input("Enter how many multiples you want: "))

print(f"First {n} multiples of {a}:")
for i in range(1, n+1):
    print(a * i)
```

Result: The program is executed and the output is obtained.

Output:

Sum of first 100 even numbers is: 10100

Date: 02/10/25

Program 6

Aim: Find the sum of first 100 even numbers

Source Code:

```python
total = 0

for i in range(2, 201, 2):
    total += i

print("Sum of first 100 even numbers is:", total)
```

Result: The program is executed and the output is obtained.

Output:

Enter a number: 6

Factorial of 6 is: 720

Date: 02/10/25

Program 7

Aim: Find the factorial of a number

Source Code:

```python
num = int(input("Enter a number: "))

factorial = 1

for i in range(1, num+1):
    factorial *= i

print(f"Factorial of {num} is: {factorial}")
```

Result: The program is executed and the output is obtained.

Output:

Enter a number: 934

Number of digits in 934 is: 3

Date: 02/10/25

Program 8

Aim: Find the number of digits

Source Code:

```python
num = int(input("Enter a number: "))


count = 0
n = num


while n != 0:
    n = n // 10
    count += 1


print(f"Number of digits in {num} is: {count}")
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Enter a year: 2200

2200 is not a leap year.

Date: 02/10/25

Program 9

Aim: To check whether an year is leap year or not

Source Code:

```python
year = int(input("Enter a year: "))


if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")
```

Result: The program is executed and the output is obtained.

Output:

Enter coefficient a: 2

Enter coefficient b: 4

Enter coefficient c: 2

Roots of the quadratic equation: (-1+0j), (-1+0j)

Date: 02/10/25

Program 10

Aim: To find the roots of a quadratic equation

Source Code:

```python
import cmath

a=int(input("Enter coefficient a: "))
b=int(input("Enter coefficient b: "))
c=int(input("Enter coefficient c: "))


d = cmath.sqrt(b**2 - 4*a*c)


root1 = (-b + d) / (2*a)
root2 = (-b - d) / (2*a)


print(f"Roots of the quadratic equation: {root1}, {root2}")
```

Result: The program is executed and the output is obtained.

Output:

Enter a string: hello

String after exchanging first and last characters: oellh

Date: 02/10/25

Program 11

Aim: Exchange first and last characters in a string

Source Code:

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

if len(s) > 1:
    new_s = s[-1] + s[1:-1] + s[0]
else:
    new_s = s

print("String after exchanging first and last characters:", new_s)
```

Result: The program is executed and the output is obtained.

Output:

Enter color names separated by commas: orange, red, blue, black, white

First color: orange

Last color: white

Date: 02/10/25

Program 12

Aim: Display first and last colours from a list of comma-separated colour names

Source Code:

```
color_list = [c.strip() for c in input("Enter color names separated by commas: ").split(",")]


print("First color:", color_list[0])
print("Last color:", color_list[-1])
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Enter first string: Hello

Enter second string: World

Resulting string: Wello Horld

Date: 02/10/25

Program 13

Aim: Create a single string from two strings, swapping the character at position one

Source Code:

```
str1 = input("Enter first string: ")
str2 = input("Enter second string: ")


new_str1 = str2[0] + str1[1:]
new_str2 = str1[0] + str2[1:]


result = new_str1 + " " + new_str2


print("Resulting string:", result)
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Ascending order: {'banana': 1, 'cherry': 2, 'apple': 3}

Descending order: {'apple': 3, 'cherry': 2, 'banana': 1}

Date: 02/10/25

Program 14

Aim: Sort dictionary (ascending and descending)

Source Code:

```python
my_dict = {"apple": 3, "banana": 1, "cherry": 2}


items = list(my_dict.items())


for i in range(len(items)):
    for j in range(i+1, len(items)):
        if items[i][1] > items[j][1]:
            items[i], items[j] = items[j], items[i]

asc_sorted = dict(items)
print("Ascending order:", asc_sorted)


desc_sorted = dict(reversed(items))
print("Descending order:", desc_sorted)
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Merged dictionary: {'a': 1, 'b': 2, 'c': 3, 'd': 4}

Date: 02/10/25

Program 15

Aim: Merge two dictionaries

Source Code:

```
dict1 = {"a": 1, "b": 2}
dict2 = {"c": 3, "d": 4}

merged_dict = {}

for key in dict1:
    merged_dict[key] = dict1[key]

for key in dict2:
    merged_dict[key] = dict2[key]

print("Merged dictionary:", merged_dict)
```

Result: The program is executed and the output is obtained.

Output:

Enter first number: 51

Enter second number: 209

GCD of 51 and 209 is: 1

Date: 02/10/25

Program 16

Aim: Find the GCD of 2 numbers

Source Code:

```python
def find_gcd(a, b):
    while b != 0:
        a, b = b, a % b
    return a


num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))


print("GCD of", num1, "and", num2, "is:", find_gcd(num1, num2))
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Original list: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

List after removing even numbers: [1, 3, 5, 7, 9]

Date: 02/10/25

Program 17

Aim: From a list, create a list removing all even numbers

Source Code:

```
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

result = []
for num in numbers:
    if num % 2 != 0:
        result.append(num)

print("Original list:", numbers)
print("List after removing even numbers:", result)
```

Result: The program is executed and the output is obtained.

<u>Output:</u>

Enter a number: 7

Factorial of 7 is: 5040

Date: 02/10/25

Program 17

Aim: From a list, create a list removing all even numbers

Source Code:

```python
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

result = []
for num in numbers:
    if num % 2 != 0:
        result.append(num)

print("Original list:", numbers)
print("List after removing even numbers:", result)
```