TASK 1

1. Hello World Program

• Task: Write a Python program that prints "Hello, World!" to the console.
• Objective: Understand basic Python syntax and the use of the print function.

Solution: print("Hello, World!")

2. Data Type Identification

• Task: Write a Python program that accepts user input and prints the data type of the input.
• Objective: Learn how to identify and work with different data types in Python.

Solution:

```
n=4
print(type(n))      <class 'int'>

n="Hello"
print(type(n))      <class 'str'>

n=True
print(type(n))      <class 'bool'>

n=2.5
print(type(n))      <class 'float'>

n=2+5j
print(type(n))      <class 'complex'>
```

3. String Manipulation

• Task: Create a Python program that takes a string as input and performs the following operations:
o Convert the string to uppercase.
o Find the length of the string.
o Replace all occurrences of a specific character.

Solution:

```
n=input("Enter a String: ")
print(n.upper())
print(n.lower())
print(len(n))
```

```
n=n.replace('l','m')
print(n)
```
Enter a String: Hello World
HELLO WORLD
hello world
11
Hemmo Wormd

4. Type Casting
• Task: Write a Python program that converts a floating-point number to an integer and a string to a float, then prints the results.
• Objective: Understand how to perform type casting in Python.

Solution:

```
n=22.5
print(int(n))
n="234"
print(float(n))
```
22
234.0

5. String Methods Exploration
• Task: Given a string, perform the following operations:
o Count the number of vowels.
o Reverse the string.
o Check if the string is a palindrome.
• Objective: Apply different string methods to manipulate and analyze strings.

Solution:

```
s=input("Enter a String: ")
cv=0
for x in s:
    if x=='A'or x=='a' or x=='E' or x=='e' or x=='i' or x=='I' or x=='o' or x=='O' or
x=='u' or x=='U':
        cv+=1
print("Count of Vowels is ", cv)
```

Enter a String: hello
Count of Vowels is 2

```
s=input("Enter a String: ")
print(s[::-1])

s=input("Enter a String: ")
rev=""
for i in range(len(s)-1,-1,-1):
    rev+=s[i]
print(rev)
```

```
Enter a String: Hello
olleH
```

```
s=input("Enter a String: ")
rev=""
for i in range(len(s)-1,-1,-1):
    rev+=s[i]
if(rev==s):
    print("String is a Palindrome")
else:
    print("String is not Palindrome")
```

```
Enter a String: aba
String is a Palindrome

Enter a String: Hello
String is not Palindrome
```

6. Even or Odd

• Task: Write a Python program that checks whether a given number is even or odd.
• Objective: Practice using conditional statements and numerical operations.

Solution:

```
n=int(input("Enter a number: "))
if n%2==0:
    print(n,"is even number")
else:
    print(n,"is odd number")
```

```
Enter a number: 2
2 is even number
```

Enter a number: 3
3 is odd number

7. String Concatenation
• Task: Write a Python program that concatenates three strings entered by the user and prints the result.
• Objective: Practice string manipulation and user input handling.

Solution:

```
s1=input("Enter a String 1: ")
s2=input("Enter a String 2: ")
s3=input("Enter a String 3: ")
print(s1+" "+s2+" "+s3)
```
Enter a String 1: Hello all
Enter a String 2: Welcome to
Enter a String 3: Python Class
Hello all Welcome to Python Class

8. Basic List Operations
• Task: Create a list of five elements, then perform the following operations:
o Append a new element to the list.
o Remove the third element.
o Sort the list in ascending order.
• Objective: Learn how to work with lists and basic list methods.

Solution:
```
l=[1,8,3,4,5]
l.append(7)
print(l)
l.remove(l[2])
print(l)
l.sort()
print(l)
```
[1, 8, 3, 4, 5, 7]
[1, 8, 4, 5, 7]
[1, 4, 5, 7, 8]

9. Palindrome Checker
• Task: Write a Python program that checks if a given string is a palindrome (reads the

same backward as forward).
• Objective: Use string slicing and logical operators.

Solution:

```
s=input("Enter a String: ")
rev=""
for i in range(len(s)-1,-1,-1):
   rev+=s[i]
if(rev==s):
   print("String is a Palindrome")
else:
   print("String is not Palindrome")
```

Enter a String: aba
String is a Palindrome

Enter a String: Hello
String is not Palindrome

10. Simple Calculator
• Task: Create a Python program that performs basic arithmetic operations (addition, subtraction, multiplication, and division) on two numbers.
• Objective: Practice Python syntax and numerical operations.

Solution:

```
a=int(input("Enter a number :"))
b=int(input("Enter a number :"))
print("Addition of a and b: ",(a+b))
print("Subtraction of a and b: ",(a-b))
print("Division of a and b: ",(a/b))
print("Multiplication of a and b: ",(a*b))
```

Enter a number :5
Enter a number :2
Addition of a and b: 7
Subtraction of a and b: 3
Division of a and b: 2.5
Multiplication of a and b: 10