Name:-Saloni Yadav
Enrollment No.-0801IT221112

LAB ASSIGNMENT:-1

1. Write a program to demonstrate basic data type in python.

Source Code:-

```
#basic datatype in python
Name = "Saloni Yadav"
print("Type of Name: ", type(Name))
x = 50
print("Type of x: ", type(x))
y = 60.5
print("Type of y: ", type(y))
z = 2+3j
print("Type of z", type(z))
l = ["Saloni", "Riya", "Neha"]
print("Type of l", type(l))
t = ("Rahul", "Shiv", "Raj")
print("Type of t", type(t))
r = range(10)
print("Type of r", type(r))
d = {"name": "Saloni", "age": 20}
print("Type of d", type(d))
s = set({"Car", "Bike", "Bus"})
print("Type of s", type(s))
b = True
print("Type of b", type(b))
```

Name:-Saloni Yadav
Enrollment No.-0801IT221112

Output:-

```
Type of Name:  <class 'str'>
Type of x:  <class 'int'>
Type of y:  <class 'float'>
Type of z <class 'complex'>
Type of l <class 'list'>
Type of t <class 'tuple'>
Type of r <class 'range'>
Type of d <class 'dict'>
Type of s <class 'set'>
Type of b <class 'bool'>
>
```

2. What is a docstring in Python? Why are docstrings important in Python programming? How can you write a docstring for a function in Python? Can you access the docstring of a function programmatically? If yes, how?

Ans:-

A docstring in Python is a string literal that occurs as the first statement in a module, class, function, or method definition. It is used to document the purpose, usage, and behavior of the code. Docstrings are important in Python programming for several reasons:

Documentation: Docstrings serve as a form of documentation, providing information about the purpose and usage of a module, class, function, or method. This makes it easier for other developers (or even yourself) to understand and use the code.

Automatic Documentation Tools: Python has tools like Sphinx that can automatically generate documentation based on docstrings. This makes it easy to create comprehensive and consistent documentation for your code.

Interactive Help: Docstrings can be accessed interactively using the help() function or in various integrated development environments (IDEs), providing users with information about how to use a particular function or module.

To write a docstring for a function in Python, you can use triple-quoted strings immediately below the function definition. Here's an example:

Name:-Saloni Yadav
Enrollment No.-0801IT221112

```
def add_numbers(a, b):
    """
    Adds two numbers.

    Parameters:
    - a (int): The first number.
    - b (int): The second number.

    Returns:
    int: The sum of the two numbers.
    """
    return a + b
```

YES,we can access the docstring of a function programmatically.

In the example above, the docstring provides information about the parameters (a and b) and the return value of the add_numbers function.

To access the docstring of a function programmatically, you can use the __doc__ attribute. Here's an example:

```
print(add_numbers.__doc__)
```

This will output the docstring of the add_numbers function. Not all functions or objects may have docstrings, so it's a good practice to check for the existence of a docstring before attempting to access it programmatically.

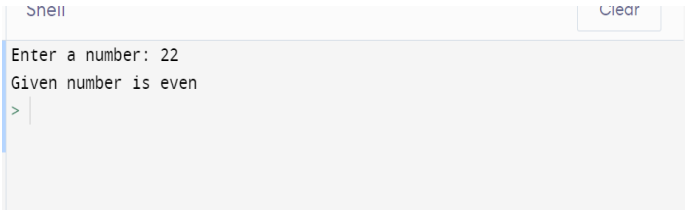
3.Write a program for checking if the given number is even or odd.

Source Code:-

```
#taking input from user
num = int(input("Enter a number: "))
if (num % 2) == 0:
   print("Given number is even")
else:
   print("Given number is odd")
```

Name:-Saloni Yadav
Enrollment No.-0801IT221112

Output:-

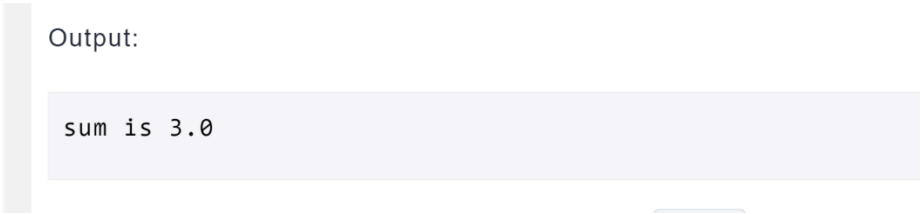


4.Write a program that takes 2 numbers as command line arguments and prints its sum.

Source Code:-

```
import sys

a, b = sys.argv[1:3]

print("sum is", float(a) + float(b))
```

Output:-



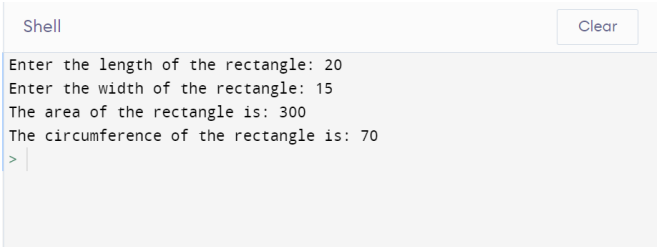
5. Write a program that prompts the user to input the length and the width of a rectangle and outputs the area and circumference of the rectangle.

Source Code:-

```
length = int(input("Enter the length of the rectangle: "))

width = int(input("Enter the width of the rectangle: "))

area = length * width

circumference = 2 * (length + width)

print("The area of the rectangle is:", area)

print("The circumference of the rectangle is:", circumference)
```

Output:-

Name:-Saloni Yadav
Enrollment No.-0801IT221112



6. Write a program to read a person's age from the keyboard and display whether he is eligible for voting or not.

Source Code:-

```
# input age

age = int(input("Enter Age : "))

# condition to check voting eligibility

if age >= 18:

    status = "Eligible"

else:

    status = "Not Eligible"

print("You are ", status, " for Vote.")
```

Output:-