

Experiment 2.4.

Page No.

Date

Aim:- write a Python code, for implementing user defined and Anonymous Functions

Theory:-

A function is a block of code which only runs when it is called. You can pass data, known as parameters, into a function. A function can return data as a result.

→

User defined functions

Functions that we define ourselves to do certain specific tasks are referred as user-defined functions.

Functions that readily come with Python are called built-in functions. If we use functions written by others in the form of library, it can be termed as library function. All the other functions that we write on our own fall under user-defined functions. So, our user-defined functions could be a library function to someone else.

Advantages -

1. User-defined functions help to decompose a large program into small segments which makes program easy to understand, maintain and debug.
2. Programmers working on large project can divide the workload by making different functions.

→ Anonymous functions-

In Python, an anonymous function is a function that is defined without a name. While normal functions are defined using 'def' keyword in Python, anonymous functions are defined using the lambda keyword. Hence, anonymous functions are also called lambda functions.

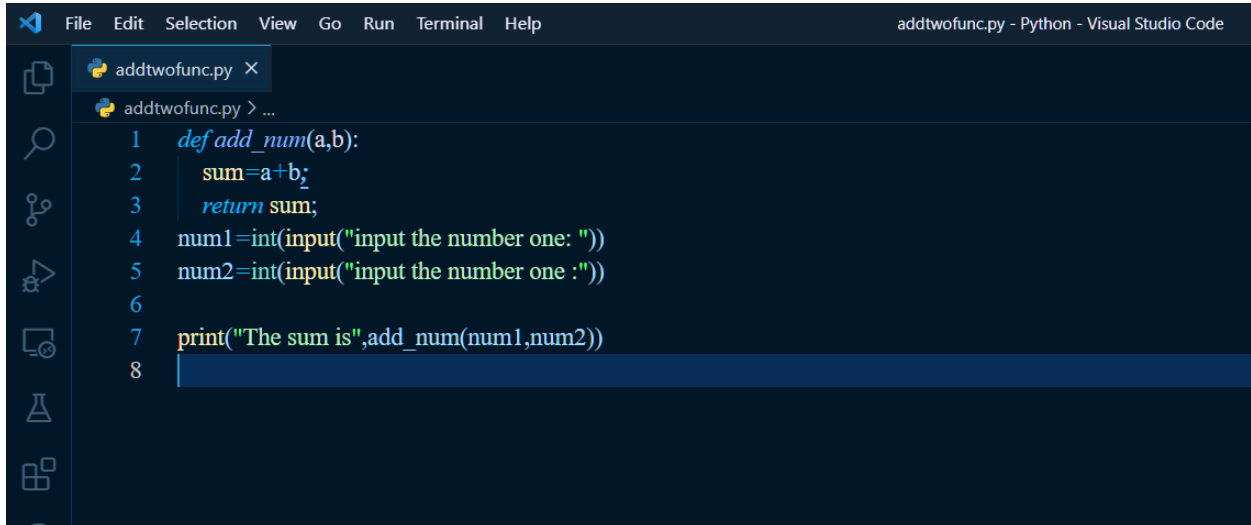
Syntax:

lambda arguments: expression

Programs:

A. Write a python code for addition of 2 numbers using a function.

Code:

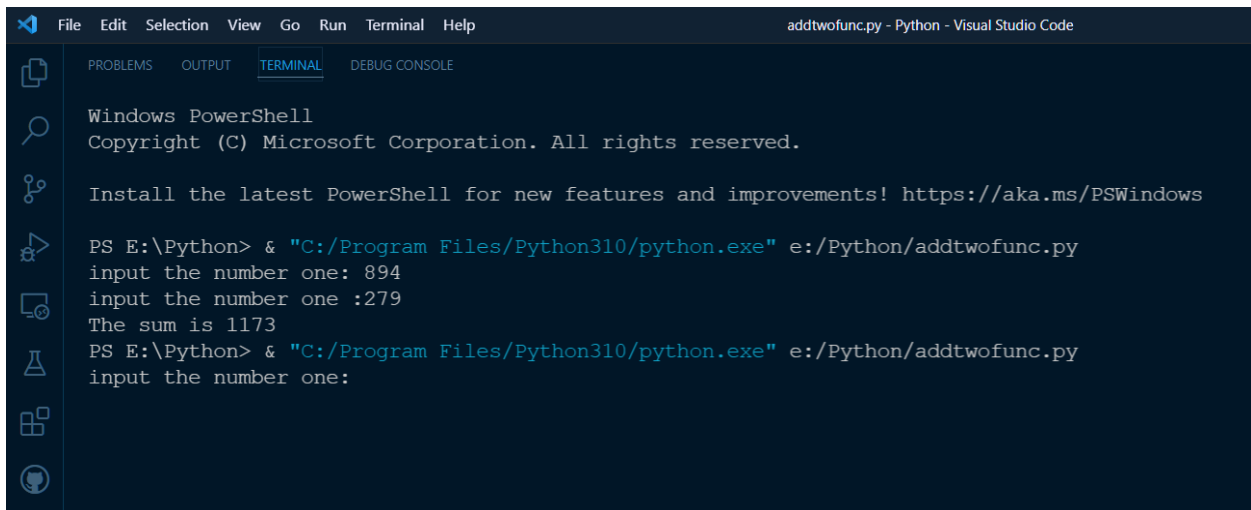


```
addtwofunc.py
1 def add_num(a,b):
2     sum=a+b;
3     return sum;
4 num1=int(input("input the number one: "))
5 num2=int(input("input the number one :"))
6
7 print("The sum is",add_num(num1,num2))
8
```

Output:

Num 1 - 894

Num 2 0 279



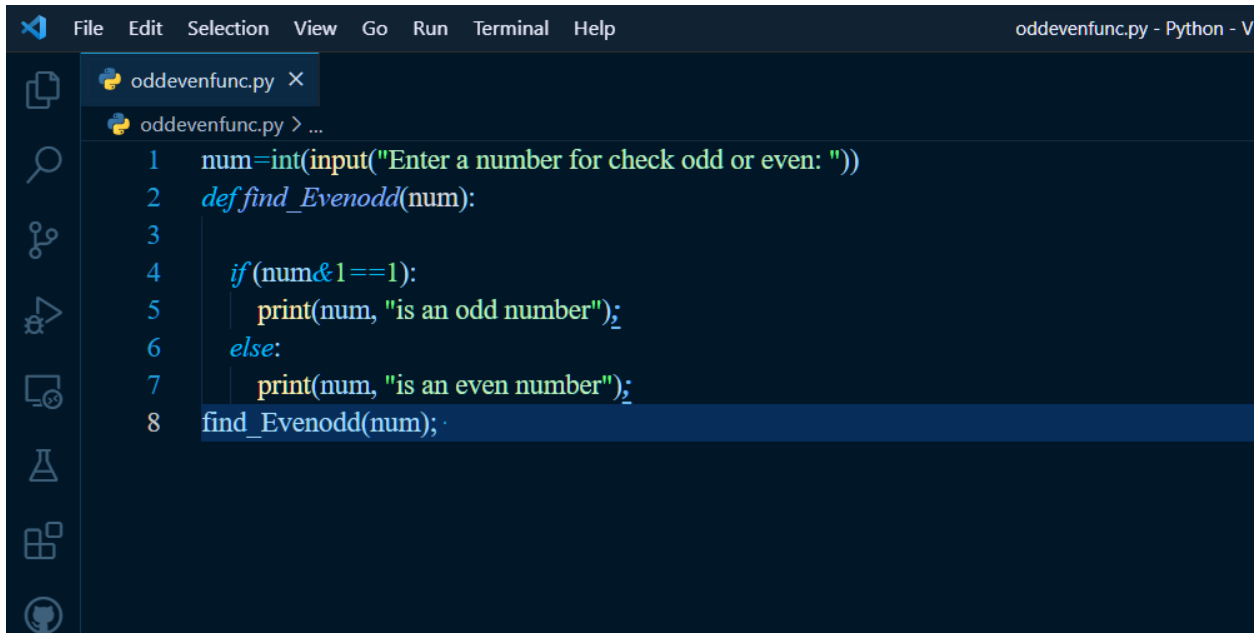
```
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PS E:\Python> & "C:/Program Files/Python310/python.exe" e:/Python/addtwofunc.py
input the number one: 894
input the number one :279
The sum is 1173
PS E:\Python> & "C:/Program Files/Python310/python.exe" e:/Python/addtwofunc.py
input the number one:
```

B. Write a python code to identify if a given number is even or odd using a function.

Code:




```
File Edit Selection View Go Run Terminal Help
oddevenfunc.py - Python - V

oddevenfunc.py X
oddevenfunc.py > ...
1 num=int(input("Enter a number for check odd or even: "))
2 def find_Evenodd(num):
3
4     if (num&1==1):
5         print(num, "is an odd number");
6     else:
7         print(num, "is an even number");
8 find_Evenodd(num);
```

Output:

Case 1 : If number is odd (1089)



```
File Edit Selection View Go Run Terminal Help
oddevenfunc.py - Python - Visual Studio Code

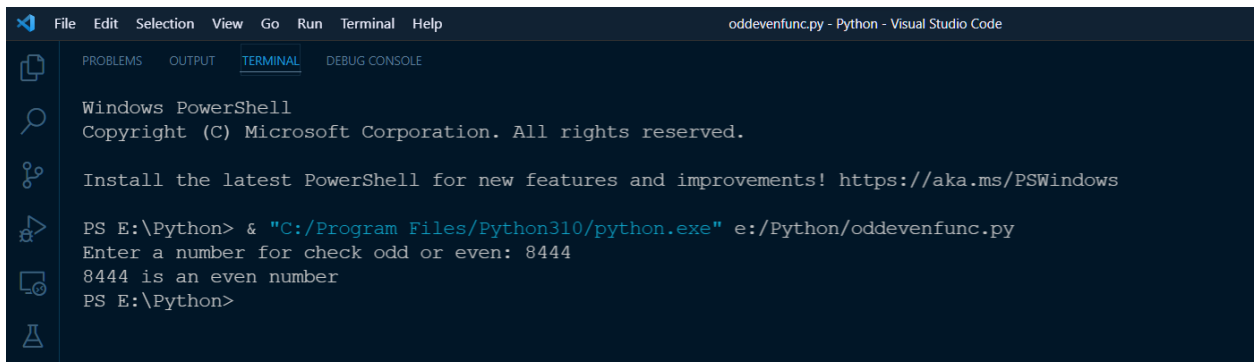
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

Windows PowerShell
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PS E:\Python> & "C:/Program Files/Python310/python.exe" e:/Python/oddevenfunc.py
Enter a number for check odd or even: 1089
1089 is an odd number
PS E:\Python> |
```

Case 2 : If number is even (8444)



```
File Edit Selection View Go Run Terminal Help
oddevenfunc.py - Python - Visual Studio Code

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

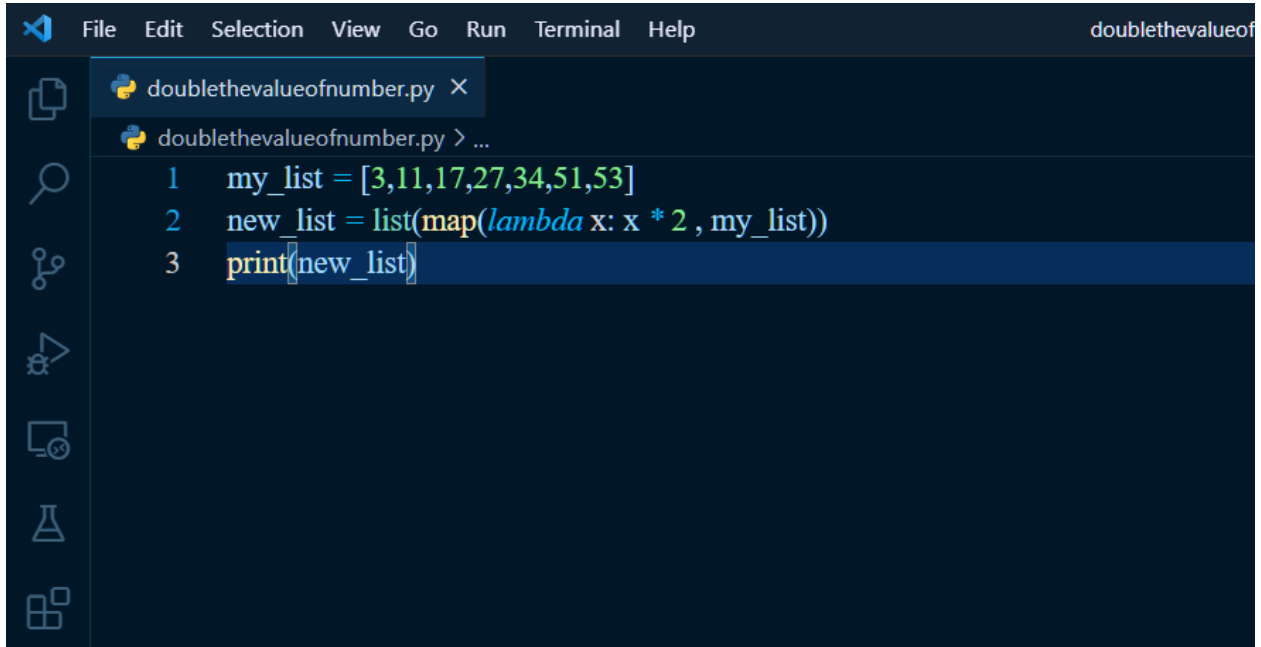
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PS E:\Python> & "C:/Program Files/Python310/python.exe" e:/Python/oddevenfunc.py
Enter a number for check odd or even: 8444
8444 is an even number
PS E:\Python>
```

C. Write a python code for Lambda anonymous function.

Code: Here we have written a program to double the value of each number in the list.



```
File Edit Selection View Go Run Terminal Help doublethevalueof

doublethevalueofnumber.py X
doublethevalueofnumber.py > ...
1 my_list = [3,11,17,27,34,51,53]
2 new_list = list(map(lambda x: x * 2, my_list))
3 print(new_list)
```

Output:



```
File Edit Selection View Go Run Terminal Help doublethevalueofnumber.py - Python - Visual Studio Code

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

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PS E:\Python> & "C:/Program Files/Python310/python.exe" e:/Python/doublethevalueofnumber.py
[6, 22, 34, 54, 68, 102, 106]
PS E:\Python>
```

Conclusion:

We have understood and performed the implementation of User defined and Anonymous Functions.