ASSIGNMENT-3

1. Function with argument, write a python program using function to find the cube of a number?

```
def cube(num):
    cube=num**3
    return cube
num=int(input("Enter a number:"))
res=cube(num)
print("The cube of ",num,"is :",res)
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_cla
Enter a number:3
The cube of  3 is : 27

Process finished with exit code 0
```

2. Using Lambda function, find the area of a triangle. Take base and height as user input?

```
base=int(input("Enter the base : "))
height=int(input("Enter the height : "))
triangle=lambda base,height:0.5*base*height
area=triangle(base,height)
print("The area of the triangle:",area)
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_cla
Enter the base : 12
Enter the height : 10
The area of the triangle: 60.0

Process finished with exit code 0
```

3. write a python function that takes list as argument and return the second largest number of that list?

```
def second_largest(list):
    list.sort()
    return list[-2]
li=[]
n=int(input("Enter the size of the list:"))
for i in range(0,n):
    n1=int(input("Enter element of the list:"))
    li.append(n1)
print("The second largest number is :",second_largest(li))
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_cla
Enter the size of the list:4
Enter element of the list:75
Enter element of the list:65
Enter element of the list:85
Enter element of the list:45
The second largest number is : 75

Process finished with exit code 0
```

4. **Create a function that accepts a string as an argument and print a new dictionary containing the count of each character in the string?**

```
def character_count(string):
    char_count={}
    for char in string:
        if char in char_count:
            char_count[char]+=1
        else:
            char_count[char]=1
    for char,count in char_count.items():
```

```
        print("Character:",char,"Count:",count)
str=input("Enter the string:")
character_count(str)
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_cla
Enter the string:hello python
Character: h Count: 2
Character: e Count: 1
Character: l Count: 2
Character: o Count: 2
Character:   Count: 1
Character: p Count: 1
Character: y Count: 1
Character: t Count: 1
Character: n Count: 1

Process finished with exit code 0
```

5. print Fibonacci series using keyword argument?

```
def fibonacci(n=5):
    fibonacci_series=[0,1]
    for i in range(2,n):
        next_fibonacci=fibonacci_series[-1]+fibonacci_series[-2]
        fibonacci_series.append(next_fibonacci)
    return fibonacci_series
result=fibonacci(n=10)
print("Fibonacci Series:",result)
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_class\venv\Scripts\
Fibonacci Series: [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]

Process finished with exit code 0
```

6. Calculate the tax amount based on salary find the highest tax payer using arbitrary arguments salary>20000 to <50000 tax-2%, salary>50000 to < 100000 tax-5% and above 100000 tax 10%

```
def salary(*args):
    largest_tax=0
    for i in args:
        if i>20000 and i<50000:
            tax=i*(2/100)
            print("Tax for salary",i,"is",tax)
        elif i>50000 and i<=100000:
            tax=i*(5/100)
            print("Tax for salary",i,"is",tax)
        elif i>100000:
            tax=i*(10/100)
            print("Tax for salary",i,"is",tax)
        if largest_tax<tax:
            largest_tax=tax
        print()
    print("Highest tax is :",largest_tax)
salary(60000,75000,150000)
```

OUTPUT

```
C:\Users\User\PycharmProjects\python_cla
Tax for salary 60000 is 3000.0

Tax for salary 75000 is 3750.0

Tax for salary 150000 is 15000.0

Highest tax is : 15000.0

Process finished with exit code 0
```