Experiment No. 2

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Subject :: OSTL

Code :

1) write a python function that accepts a string and calculate the number of upper-case and lower-case letters.

```
a = input("Enter a String :: ")
u = 0
l = 0
for i in a:
        if(i.isupper()):
                u+=1
        if(i.islower()):
                l+=1
print("Number of Upper case letters are",u)
print("Number of Lower case letters are",l)
```

Output ::

```
apsit@18202010:~/Desktop$ python3 demo.py
Enter a String :: MIRZAzulfiqar
Number of Upper case letters are 5
Number of Lower case letters are 8
apsit@18202010:~/Desktop$
```

2) Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.

```
r = int(input("Enter the radius of the Circle :: "))
PI = 3.14
class Circle:

        def Area(self):
                area = PI*r*r
                print("Area of the Circle is ",area)

        def perimeter(self):
                per = 2*PI*r
                print("Perimeter of the given circle is",per)

c = Circle()
c.Area()
```

c.perimeter()

Output ::

```
apsit@18202010:~/Desktop$ python3 demo.py
Enter the radius of the Circle :: 8
Area of the Circle is  200.96
Perimeter of the given circle is 50.24
apsit@18202010:~/Desktop$
```

3) Define a class to represent a bank account. Include the following members :
Data/Attribute :
Name of the Depositer
Account Number
Type of Account
Balance amount in the account
Methods ::
1. to assigninitial values(getData())
2. to deposit a amount. (deposit())
3. to withdraw an amount after checking balance. (withdraw())
4.to display the name & balance . (display())

```
import random


class Bank:
    current_bal = 2000

    def get_data(self):
        name = (input("Enter The Name of the Account Holder : "))
        acc_type = (input("Enter the type of account [Savings or Current] : "))
        return name, acc_type

    def deposit(self):
        dep = int(input("Enter the amount to be deposited : "))
        self.current_bal += dep
        print(f"{dep} Rs. has been deposited and you current balance is {self.current_bal} Rs.")

    def withdraw(self):
        wit = int(input("Enter the amount to be withdrawn : "))
        if wit <= self.current_bal:
            self.current_bal -= wit
            print(f"{wit} Rs. has been withdrawn and you current balance is {self.current_bal} Rs.")
        else:
            print("Insufficient Balance")

    def display(self):
        print("The Name of the Account Holder :: ", Name)
        print("Type of account is :: ", Acc_type)
        print("Account Number :: ", Acc_num)
```

```
        print("Current Balance is :: ", self.current_bal)


customer = Bank()
print("*** WELCOME TO ZULFIQAR PAYMENT'S BANK ***")
print()
Name, Acc_type = customer.get_data()
print("Account created Successfully.....")
Acc_num = random.randint(10000, 99999)
print(f"Your account Number is :: {Acc_num}")
print(f"Your current Balance is {customer.current_bal} Rs. ")
while True:

    print("""
    1) Deposit :
    2) Withdraw :
    3) Current Balance :
    4) Display Details :
    5) Quit Application____
    **ENTER YOUR CHOICE**
    """)
    choice = int(input("Enter Your choice :: "))
    print()

    if choice == 1:
        customer.deposit()
    elif choice == 2:
        customer.withdraw()
    elif choice == 3:
        print(f"Available
Balance in Account is
{customer.current_bal} Rs.")
    elif choice == 4:
        customer.display()
    else:
        break
```

Output ::

```
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$ python3 demo.py
*** WELCOME TO ZULFIQAR PAYMENT'S BANK ***

Enter The Name of the Account Holder : Mirza Zulfiqar Ali
Enter the type of account [Savings or Current] : Savings
Account created Successfully.....
Your account Number is :: 74489
Your current Balance is 2000 Rs.

    1) Deposit :
    2) Withdraw :
    3) Current Balance :
    4) Display Details :
    5) Quit Application____
    **ENTER YOUR CHOICE**

Enter Your choice :: 2

Enter the amount to be withdrawn : 1500
1500 Rs. has been withdrawn and you current balance is 500 Rs.

    1) Deposit :
    2) Withdraw :
    3) Current Balance :
    4) Display Details :
    5) Quit Application____
    **ENTER YOUR CHOICE**

Enter Your choice :: 4

The Name of the Account Holder ::  Mirza Zulfiqar Ali
Type of account is ::  Savings
Account Number ::  74489
Current Balance is ::  500

    1) Deposit :
    2) Withdraw :
    3) Current Balance :
    4) Display Details :
    5) Quit Application____
    **ENTER YOUR CHOICE**

Enter Your choice :: 5

zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$
```

4) write a python program to create a base class with point. Define a method Set_Cordinate(X,Y). Define the new class New_Point, which inherits the Point class .
Also add draw() method inside the subclass to print the cordinate values.

```
class Point:
    def set_cordinate(self):
        x = int(input("Enter x cordinate :: "))
        y = int(input("Enter y cordinate :: "))
        return x, y

class New_Point(Point):
    def draw(self):
        print(point.set_cordinate())


point = New_Point()
point.draw()
```

Output ::

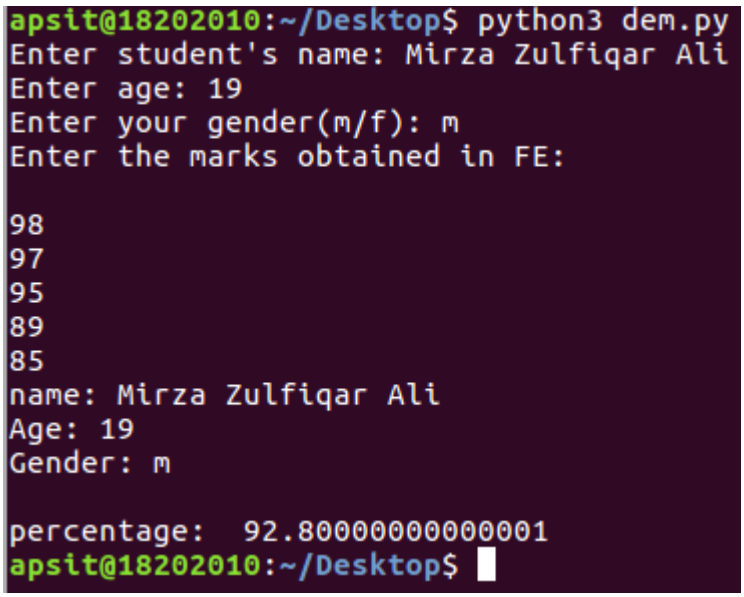
```
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~$ cd Desktop
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$ python3 demo.py
Enter x cordinate :: 23
Enter y cordinate :: 32
(23, 32)
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$
```

5) Define the class as student take the input as Name, Age, Gender.
Define a class as Test and inherit base class student accept the marks for students in the FE.
Define a class as Marks and inherit deived class Test and display the details Name, Age, Gender, Study in, calculate the percentage marks.

```
class student:
        def __init__(self):
                self.name = input("Enter student's name: ")
                self.age = int(input("Enter age: "))
                self.gender = input("Enter your gender(m/f): ")
        def display(self):
                print(f"name: {self.name}\nAge: {self.age}\nGender: {self.gender}\n")
class test(student):
        def __init__(self):
                super().__init__()
                print("Enter the marks obtained in FE: \n")
                self.sub1 = int(input())
                self.sub2 = int(input())
                self.sub3 = int(input())
                self.sub4 = int(input())
                self.sub5 = int(input())
```

```
class marks(test):
        def __init__(self):
                super().__init__()
                self.avg = (self.sub1 + self.sub2 + self.sub3 + self.sub4 + self.sub5) / 500
                self.percentage = self.avg * 100
        def display(self):
                super().display()
                print("percentage: ", self.percentage)
m1 = marks()
m1.display()
```

Output ::



6) Define class as person that takes the input as Name, Age, Gender and a display function to display these details.
Defin a class as marks which accept the marks for the subjects in the FE and a display function to display these details.
Define a class as Student and inherit two super classes
person and Marks and call the display functions of these classes in base class .

```
class person:
        def __init__(self):
                self.name = input("Enter your name: ")
                self.age = int(input("Enter your age: "))
                self.gender = input("Enter your gender(m/f): ")
        def display(self, ):
                print(f"NAME: {self.name}\nAGE: {self.age}\nGENDER: {self.gender}\n")
class marks:
        def __init__(self):
                print("Enter your marks of FE: \n")
                self.s1 = int(input())
                self.s2 = int(input())
                self.s3 = int(input())
                self.s4 = int(input())
                self.s5 = int(input())
```

```
        def display(self):
                print("***marks***\n")
                print("sub1: {self.s1}\nsub2: {self.s2}\nsub3: {self.s3}\nsub4: {self.s4}\nsub5:
{self.s5}\n")
class student(person, marks):
        def __init__(self):
                person.__init__(self)
                marks.__init__(self)
                person.display(self)
                marks.display(self)
                exit()
b1 = student()
b1.__init__()
```

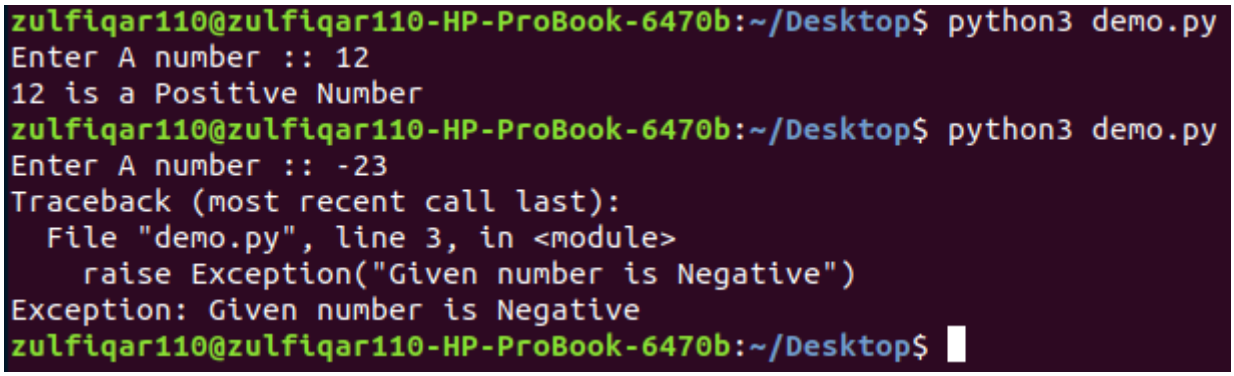
Output ::

```
apsit@18202010:~/Desktop$ python3 dem.py
Enter your name: Mirza Zulfiqar Ali
Enter your age: 19
Enter your gender(m/f): m
Enter your marks of FE:

98
89
78
96
97
NAME: Mirza Zulfiqar Ali
AGE: 19
GENDER: m

***marks***

sub1: 98
sub2: 89
sub3: 78
sub4: 96
sub5: 97
```

7) write a python program to check if a given number is positve. Raise an exception if the given number is negative.

```
num1 = int(input("Enter A number :: "))
if num1 < 0:
   raise Exception("Given number is Negative")
else:
   print(f"{num1} is a Positive Number")
```

Output ::


zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$ python3 demo.py
Enter A number :: 12
12 is a Positive Number
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$ python3 demo.py
Enter A number :: -23
Traceback (most recent call last):
File "demo.py", line 3, in <module>
raise Exception("Given number is Negative")
Exception: Given number is Negative
zulfiqar110@zulfiqar110-HP-ProBook-6470b:~/Desktop$