

## Python Assignment:-7

'''

**1. Write a program which contains one class named as BookStore.**

**BookStore class contains two instance variables as Name ,Author.**

**That class contains one class variable as NoOfBooks which is initialise to 0.**

**There is one instance methods of class as Display which displays name , Author and number of books.**

**Initialise instance variable in init method by accepting the values from user as name and author.**

**Inside init method increment value of NoOfBooks by one.**

**After creating the class create the two objects of BookStore class as**

'''

```
NoOfBook = 0;  
class BookStore:
```

```
    def __init__(self,naav,lekhak):  
        global NoOfBook;  
        NoOfBook = NoOfBook + 1;  
        self.BName=naav;  
        self.Author=lekhak;  
  
    def Display(self):  
        global NoOfBook;  
        print("BookName : ",self.BName);  
        print("AuthorName: ",self.Author);  
        print("Total Books are: ",NoOfBook);  
        print("-----");
```

```
obj1 = BookStore("C Programming","K&R");  
obj1.Display();
```

```
obj2 = BookStore("Linux system programming","Robert Love");  
obj2.Display();
```

```
obj3= BookStore("C++","Bjarne Stroustrup");  
obj3.Display();
```

'''

**2. Write a program which contains one class named as BankAccount.**

**BankAccount class contains two instance variables as Name & Amount.**

**That class contains one class variable as ROI which is initialise to 10.5.**

**Inside init method initialise all name and amount variables by accepting the values from user.**

**There are Four instance methods inside class as Display(), Deposit(), Withdraw(),**

**CalculateIntrest().**

**Deposit() method will accept the amount from user and add that value in class instance variable**

**Amount.**

**Withdraw() method will accept amount to be withdrawn from user and subtract that amount from class instance variable Amount.**

**CalculateIntrest() method calculate the interest based on Amount by considering rate of interest**

**which is Class variable as ROI.**

**And Display() method will display value of all the instance variables as Name and Amount.**

**After designing the above class call all instance methods by creating multiple objects.**

'''

ROI = 10.5;

class BankAccount:

```
    def __init__(self,naav,amt):
        print("inside init");
        self.Name =naav; # input("Enter Name: ");
        self.Amount = amt; #float(input("Enter Amount: "));
```

```
    def Deposit(self,amt):
        print("After dpositing: ",amt);
        self.Amount = self.Amount + amt;
```

```
    def Withdraw(self,amt):
        print("After withdrawing: ",amt);
        self.Amount = self.Amount - amt;
```

```
    def CalculateInterest(self):
        global ROI;
        return int((self.Amount/100)*ROI);
```

```
    def Display(self):
        print("Name: ",self.Name);
        print("Amount: ",self.Amount);
```

```
obj1 = BankAccount("Amit",5000);
obj1.Display();
```

```

print("Calculate interest: ",obj1.CalculateInterest());
obj1.Deposit(300);
obj1.Display();
obj1.Withdraw(350);
obj1.Display();
print("Calculate interest: ",obj1.CalculateInterest());

```

'''

**3. Write a program which contains one class named as Numbers.**

**Arithmetic class contains one instance variables as Value.**

**Inside init method initialise that instance variables to the value which is accepted from user.**

**There are four instance methods inside class as ChkPrime(), ChkPerfect(), SumFactors(), Factors().**

**ChkPrime() method will returns true if number is prime otherwise return false.**

**ChkPerfect() method will returns true if number is perfect otherwise return false.**

**Factors() method will display all factors of instance variable.**

**SumFactors() method will return addition of all factors. Use this method in any another method**

**as a helper method if required.**

**After designing the above class call all instance methods by creating multiple objects.**

'''

class Arithmetic:

```

    def __init__(self,val):
        self.no=val;

```

```

    def ChkPrime(self):
        ival = 0;
        for i in range(2,self.no+1):
            if self.no % i == 0:
                ival = ival + 1;

```

```

        if ival==1:
            return True;
        else:
            return False;

```

```

    def ChkPerfect(self):
        sum = 0; # perfect num is such num which is addition of its all factors

        for i in range(1,self.no):
            if self.no % i == 0:
                sum = sum + i;
        if sum == self.no:
            return True;
        else:

```

```
        return False;
```

```
    def SumFactors(self):  
        sum = 0;  
        for i in range(1,self.no+1):  
            if self.no % i == 0:  
                #print(i);  
                sum += i;  
        return sum;
```

```
    def Factors(self):  
        print("All Factoris of given num is: ",end="");  
        for i in range(1,self.no+1):  
            if self.no % i == 0:  
                print(i, end=" ");
```

```
val = int(input("Enter a val:"));
```

```
aobj = Arithmetic(val);
```

```
res = aobj.ChkPrime();  
if res == True:  
    print("Given num is Prime: ",val);  
else:  
    print("Given Num is not Prime: ",val);
```

```
res = aobj.ChkPerfect();  
if res == True:  
    print("Given num is Perfect: ",val);  
else:  
    print("Given Num is not Perfect: ",val);
```

```
res = aobj.SumFactors();  
print("Sum of all factoris is: ",res);
```

```
aobj.Factors();  
print();
```