**2a. Set1 and Set2 are the two sets that contain unique integers. Set3 is to be created by taking the union or intersection of Set1 and Set2using the user defined function Operation(). Perform either union or intersection by reading choice from user. Do not use built in functions union() and intersection() and also the operators “|” and “&“.**

**Algorithm:**

1. Create the set names as people ,vampires and dracula : initialize the values to the created sets
2. Create user defined function union() and perform its operation on any two sets ( i.e people and vampires)
   1. population = people.union (vampires)
3. Display population
4. Apply union operator: repeat step 2.1 and 3
5. Create two set which assigned to set1 and set 2
6. for i in range (5) and add into set1
7. for i in range (3,9) and add into set2
8. Create and Perform user defned function intersection () function on set 1 , set 2 and result stored in set3
9. Dispay set3
10. Apply intersection operation and repeat step 8 & 9

**Coding:**

**#Union**

**s1={10,20,30}**

**s2=list(s1)**

**s3={40,50,30}**

**s4=list(s3)**

**s5=[]**

**#s5=list(s5)**

**def ope(s2,s3):**

**for i in s2:**

**s5.append(i)**

**a=0**

**for j in s4:**

**if s5[a]==j:**

**pass**

**else:**

**s5.append(j)**

**a=a+1**

**ope(s2,s3)**

**print(s2)**

**print(s4)**

**print(s5)**

**#Intersection:**

**s1={10,20,30,40,60}**

**s2=list(s1)**

**s3={40,50,30,40,60}**

**s4=list(s3)**

**s5=[]**

**#s5=list(s5)**

**def ope(s2,s4):**

**for i in s2:**

**for j in s4:**

**if i==j:**

**s5.append(i)**

**else:**

**pass**

**ope(s2,s4)**

**print(s2)**

**print(s4)**

**print(s5)**

**Output**

Union

[10, 20, 30]

[40, 50, 30]

[10, 20, 30, 40, 50]

Intersection

[40, 10, 20, 60, 30]

[40, 50, 60, 30]

[40, 60, 30]

**2b. The Dictionary “Dict1” contains N Elements and each element has the operator as the key and operands as values. User reads two operands and an operator and performs the operation on the elements of “Dict1” based on the operator using a user defined function and displays the results.**

**Algorithm:**

1. Create directories with key and values with zip() function
2. Assign directories dict to sampleDict
3. Display SampleDict
4. Create two directories dict1 and dict 2 : Assign key and values
5. Merge dict3 = {\*\*dict1, \*\*dict2}
6. Display dict 3
7. Perform Copy , update , remove and rename the directories key and values
8. Repea step 6 after each function applied on dict3

**Coding:**

dict1={"+":[100,200], "-":[50,40], "\*":[30,78],"/":[10,2]}

x =str(input("enter an operator:"))

print(x)

def add():

a=dict1["+"]

print (a)

i=0

for t in a:

b=a[i]+a[i+1]

print(b)

def sub():

a=dict1["-"]

print (a)

i=0

for t in a:

b=a[i]-a[i+1]

print(b)

def mul():

a=dict1["\*"]

print (a)

i=0

for t in a:

b=a[i]\*a[i+1]

print(b)

def div():

a=dict1["/"]

print (a)

i=0

for t in a:

b=a[i]/a[i+1]

print(b)

if x=="+":

add()

elif x=="-":

sub()

elif x=="\*":

mul()

elif x=="/":

div()

else:

print("Invalid operator")

**Output**

enter an operator:+

[100, 200]

300

enter an operator:-

-

[50, 40]

10

enter an operator:\*

[30, 78]

2340

enter an operator:/

[10, 2]

5.0

enter an operator:\

\

Invalid operator