Assignment 6

In [7]:

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'''1. Chef is a software developer, so he has to switch between different languages sometimes.
Each programming language has some features, which are represented by integers here. Currently,
Chef has to use a language with two given features A and B. He has two options --- switching to
a language with two features A1 and B1, or to a language with two features A2 and B2. All four
features of these two languages are pairwise distinct. Tell Chef whether he can use the first
language, the second language or neither of these languages (if no single language has all the required
The first and only line of each test case contains six space-separated integers A,B,A1,B1,A2,B2.
For each test case, print a single line containing the integer 1 if Chef should switch to the
first language, or 2 if Chef should switch to the second language, or 0 if Chef cannot switch
to either language.'''


A,B,A1,B1,A2,B2 = map(int,input("Enter all 6 values: ").split())

if((A==A1 or A==B1) and (B==A1 or B==B1)):
    print(1)
elif((A==A2 or A==B2) and (B==A2 or B==B2)):
     print(2)
else:
     print(0)
```

```
Enter all 6 values: 1 2 3 4 1 2
2
```

In [89]:

```
'''1. You have prepared four problems. The difficulty levels of the problems are A1,A2,A3,A4 respectivel
A problem set comprises two problems and no two problems in a problem set should have the same difficult
level. A problem can belong to at most one problem set. Find the maximum number of problem sets you can
create using the four problems.
Each test case contains four space-separated integers A1, A2, A3, A4, denoting the difficulty level of
four problems. For each test case, print a single line containing one integer - the maximum number of
problem sets you can create using the four problems.'''

A1,A2,A3,A4 = map(int,input("Enter all 4 values: ").split())

if((A1!=A2 and A3!=A4) or (A1!=A3 and A2!=A4) or (A1!=A4 and A2!=A3)):
    print(2)
elif((A1!=A2 and A3==A4) or (A1==A2 and A3!=A4) or (A1!=A3 and A2==A4) or (A1==A3 and A2!=A4) or
     (A1!=A4 and A2==A3) or (A1==A4 and A2!=A3)):
    print(1)
else:
    print(0)
```

```
Enter all 4 values: 1 2 3 4
2
```

In [88]:

```
'''1. Develop a python code to check given two dates d1 and d1 , check whether d1 is less than d2 or d1
is greater than d2 or d1 is equal to d2. (Hint: overload < , > , == operators)'''

class Date:
    def __init__(self,d,m,y):
        self.d=d
        self.m=m
        self.y=y

    def __gt__(self,da):
        if(self.y>da.y):
            return(True)
        elif(self.y==da.y and self.m>da.m):
            return(True)
        elif(self.y==da.y and self.m==da.m and self.d>da.d):
            return(True)
        else:
            return(False)

    def __lt__(self,da):
        if(self.y<da.y):
            return(True)
        elif(self.y==da.y and self.m<da.m):
            return(True)
        elif(self.y==da.y and self.m==da.m and self.d<da.d):
            return(True)
        else:
            return(False)

    def __eq__(self,da):
        if(self.d == da.d and self.m==da.m and self.y==da.y):
            return(True)
        else:
            return(False)

    def display(self):
        print("Entered Date: ",self.d,"/",self.m,"/",self.y)


y1=eval(input("Enter date1 year: "))
mo1=eval(input("Enter date1 month: "))
da1=eval(input("Enter date1 date: "))

d1 = Date(da1,mo1,y1)
d1.display()

y2=eval(input("Enter date2 year: "))
mo2=eval(input("Enter date2 month: "))
da2=eval(input("Enter date2 date: "))

d2 = Date(da2,mo2,y2)
d2.display()

if(d1>d2):
    print("d1 is greater than d2")
elif(d1<d2):
    print("d1 is less than d2")
elif(d1==d2):
    print("d1 is Equal to d2")
```

```
Enter date1 year: 1988
Enter date1 month: 11
Enter date1 date: 1
Entered Date:  1 / 11 / 1988
Enter date2 year: 1988
Enter date2 month: 10
Enter date2 date: 1
Entered Date:  1 / 10 / 1988
d1 is greater than d2
```

In [87]:

```
'''2. Develop python code to add, subtract , multiply and divide two distances where each distance conta
two things of the format KM followed by Meters.(Example: d1 = 4km 500 m  and d2 = 3 km 200 m )'''

import re

class distance:
    def __init__(self,d):
        self.d=d
    def __add__(self,da):
        x=re.findall(r"\d+",self.d)
        y=re.findall(r"\d+",da.d)
        print("Addition: ",int(x[0])+int(y[0])," km ", int(x[1])+int(y[1])," m")
    def __sub__(self,da):
        x=re.findall(r"\d+",self.d)
        y=re.findall(r"\d+",da.d)
        print("Substraction: ",int(x[0])-int(y[0])," km ", int(x[1])-int(y[1])," m")
    def __mul__(self,da):
        x=re.findall(r"\d+",self.d)
        y=re.findall(r"\d+",da.d)
        print("Mutliplication: ",int(x[0])*int(y[0])," km ", int(x[1])*int(y[1])," m")
    def __truediv__(self,da):
        x=re.findall(r"\d+",self.d)
        y=re.findall(r"\d+",da.d)
        print("Division: ",int(x[0])/int(y[0])," km ", int(x[1])/int(y[1])," m")

d1=distance("4 km 500 m")
d2=distance("3 km 200 m")

d1+d2
d1-d2
d1*d2
d1/d2
```

```
Addition:  7  km  700  m
Substraction:  1  km  300  m
Mutliplication:  12  km  100000  m
Division:  1.3333333333333333  km  2.5  m
```

In [47]:

```
'''1. Develop a class called Box with attributes length, breadth, depth and define required constructor
and other relevant methods. Inherit Box class to WeightBox which contains extra attribute as weight.
From this extent further as ColorWeightBox which
has Color as extra attribute. Develop code for entire scenario using multi-level inheritance.'''

class Box:
    def __init__(self,l,b,d):
        self.l=l
        self.b=b
        self.d=d
    def display(self):
        print("Volume: ",self.l*self.b*self.d)

class WeightBox(Box):
    def __init__(self,l,b,d,w):
        Box.__init__(self,l,b,d)
        self.w=w
    def display(self):
        print("Weight: ", self.w)

class ColorWeightBox(WeightBox):
    def __init__(self,l,b,d,w,c):
        Box.__init__(self,l,b,d)
        WeightBox.__init__(self,l,b,d,w)
        self.c=c
    def display(self):
        WeightBox.display(self)
        Box.display(self)
        print("Color: ", self.c)

obj_c=ColorWeightBox(1,2,3,4,"Red")
obj_c.display()
```

```
Weight:  4
Volume:  6
Color:  Red
```