

In [62]:

```
#Problem 2A
def includes(collection,*value):
    if type(collection)==list:
        val=value[0]
        if len(value)==2:
            start_ind=value[1]
            if val in collection:
                index = collection.index(val)
                if index==start_ind:
                    print("True")
                else:
                    print("False")
        if len(value)==1:
            if val in collection:
                print("True")
            else:
                print("False")
    if type(collection)==dict:
        collection =list(collection.values())
        value=list(value)
        result = any(elem in collection for elem in value)
        if result:
            print("True")
        else:
            print("False")
    if type(collection)==str:
        val=value[0]
        if val in collection:
            print("True")
        else:
            print("False")

includes([1, 2, 3], 1) # True
includes([1, 2, 3], 1, 2) # False
includes({'a':1,'b':2}, 1,2) # True
includes({'a':1,'b':2}, 'a') # False
includes('abcd', 'b') # True
```

True
False
True
False
True

In [64]:

```
#Problem 2B

import numpy as np

def moving_average(a,A=[]):
    A.append(a)
    Average=sum(A)/len(A)
    return round(Average,1)

mAvg = moving_average
print(mAvg(10)) #10.0
print(mAvg(11)) #10.5
print(mAvg(12)) #11.0
```

10.0
10.5
11.0

In [65]:

```

#Problem 2C
import numpy as np
def same_frequency(num1, num2):
    res1 = [int(x) for x in str(num1)]
    freq1={}
    for item in res1:
        if(item in freq1):
            freq1[item]+=1
        else:
            freq1[item]=1
    res2 = [int(x) for x in str(num2)]
    freq2={}
    for item in res2:
        if(item in freq2):
            freq2[item]+=1
        else:
            freq2[item]=1
    if(freq1==freq2):
        print("True")
    else:
        print("False")
    return freq1, freq2

same_frequency(551122,221515) # True
same_frequency(321142,3212215) # False
same_frequency(1212, 2211) # True

```

True
False
True

Out[65]:

```
{1: 2, 2: 2}, {2: 2, 1: 2})
```