In [13]:

```
def largestsecond(li):
    unique=[]
    for element in li:
        if element not in unique:
            unique.append(element)
    print(unique)
    unique.sort()
    if len(li)>1:
        print(unique[-2])
li=[5,1,2,3,3,4,1]
largestsecond(li)
```

```
[5, 1, 2, 3, 4]
4
[1, 2, 3, 4, 5]
```

In [31]:

```
#nth heighest value
def fifth(li,n):
    unique=[]
    for element in li:
        if element not in unique:
            unique.append(element)
    print(unique)
    unique.sort()
    print(unique[-n])
li=[2,2,2,1,2,3,4,5,6,7,8,7]
n=int(input("enter nth heighest value you want"))
fifth(li,n)
```

```
enter nth heighest value you want2
[2, 1, 3, 4, 5, 6, 7, 8]
7
```

In [40]:

```
#nth highest value
def readFile(filepath,n):
    uniqueword=[]
    for i in li:
        a=list(dict.fromkeys(li))
    a.sort()
    print(a)
    print(a[-n])
filepath=[1,2,2,3,4,19,2]
n=int(input("enter nth highest value"))
print(readFile(filepath,n))
```

```
enter nth highest value2
[1, 2, 3]
2
None
```

In [37]:

```
#nth lowest value
def fifth(li,n):
    unique=[]
    for element in li:
        if element not in unique:
            unique.append(element)
    print(unique)
    unique.sort()
    if len(unique)>=n:
        print(unique[n-1])
    else:
        print("out of range")
li=[1,2,3]
n=int(input("enter nth heighest value you want"))
fifth(li,n)
```

```
enter nth heighest value you want2
[1, 2, 3]
2
```

In [ ]:

```
#Largest no in list
#second largest no in a list
#kth largest no in a list
#element with highest frequency
#kth second highest frequency
#kth highest frequency

```

In [72]:

```
#function to identify the element eith highest frequency
def frequencyheighest(li):
    unique=[]
    un=[]
    c=0
    for element in li:
        if element not in unique:
            unique.append(element)
        else:
            if element in
            print(li.count(element))
    print(un)
    print(unique)
# print(un)
li=[2,2,2,1,2,3,4,5,6,7,8,7]
frequencyheighest(li)
```

```
4
4
4
2
[]
[2, 1, 3, 4, 5, 6, 7, 8]
```

In [82]:

```
1
2
3  def highestFrequency(li):
4      unique = []
5      for n in li:
6          if n not in unique:
7              unique.append(n)
8      unique = sorted(unique,reverse = True)
9      highest = unique[0]
10     c = 0
11     for i in range(0,len(li)):
12         if li[i] == highest:
13             c+=1
14     return c
15 li=[2,2,2,1,2,3,4,5,6,7,8,7,8]
16 highestFrequency(li)
```

Out[82]:

2

In [91]:

```
1  #element with highest frequency
2  #identify the element with highest frequency
3  #if many elements have the highest frequency
4  #
5  def highestFrequeny(li):
6      unique={}
7      for n in li:
8          if n not in unique:
9              unique[n]=1
10         else:
11             unique[n]+=1
12 #getting all the frequencies into list
13     freq=unique.values()
14     maxfreq=max(freq)
15 #identify the keys with max frequency
16     maxfreqkeys=[]
17     for item in unique.items():
18     #item..>(key,value)
19     #item[1]
20         if item[1]==maxfreq:
21             maxfreqkeys.append(item[0])
22     return min(maxfreqkeys)
23 highestFrequeny([1,2,2,3,9,8,7,3,4,2,1])
24
```

Out[91]:

2

In [123]:

```
#function to identify second highest frequency element
#if there are many such elements,return the smallest
#[1,2,3,1,2,1,4,4,9]
def secondhighestFrequeny(li):
    unique={}
    for n in li:
        if n not in unique:
            unique[n]=1
        else:
            unique[n]+=1
    print("........Dictionary ............")
    print(unique)
#getting all the frequencies into list
    freq=unique.values()
    print("...........values of frequency numbers.............")
    print(freq)
    maxfreq=max(freq)
    print(".............maximum value ..................")
    print(maxfreq)
    max2=0
    for v in unique.values():
        if v>max2 and v<maxfreq:
            max2=v
#identify the keys with max frequency
    maxfreqkeys=[]
    un=list(dict.fromkeys(unique.items()))
    un.sort()
    print(un)
    for item in unique.items():
    #item..>(key,value)
    #item[1]
#         print(item[1])
        if item[1]==max2:
            maxfreqkeys.append(item[0])
    return min(maxfreqkeys)
secondhighestFrequeny([1,2,3,2,1,4,4,9])

```

```
........Dictionary ............
{1: 2, 2: 2, 3: 1, 4: 2, 9: 1}
...........values of frequency numbers.............
dict_values([2, 2, 1, 2, 1])
.............maximum value ..................
2
[(1, 2), (2, 2), (3, 1), (4, 2), (9, 1)]
```

Out[123]:

```
3
```

In [126]:

```
#function to identify second highest frequency element
#if there are many such elements,return the smallest
#[1,2,3,1,2,1,4,4,9]
def nthhighestFrequeny(li):
    unique={}
    for n in li:
        if n not in unique:
            unique[n]=1
        else:
            unique[n]+=1
    print("........Dictionary ............")
    print(unique)
#getting all the frequencies into list
    freq=unique.values()
    print("...........values of frequency numbers.............")
    print(freq)
    maxfreq=max(freq)
    print("............maximum value ..................")
    print(maxfreq)
#     max2=0
#     for v in unique.values():
#         if v>max2 and v<maxfreq:
#             max2=v
#identify the keys with max frequency
    maxfreqkeys=[]
#     un=list(dict.fromkeys(unique.items()))
#     un.sort()
#     print(un)
    for item in unique.items():
    #item..>(key,value)
    #item[1]
#         print(item[1])
        if item[1]==maxfreq:
            maxfreqkeys.append(item[0])
    return min(maxfreqkeys)
nthhighestFrequeny([1,2,3,2,1,4,4,9])
```

```
........Dictionary ............
{1: 2, 2: 2, 3: 1, 4: 2, 9: 1}
...........values of frequency numbers.............
dict_values([2, 2, 1, 2, 1])
............maximum value ..................
2
```

Out[126]:

```
1
```

In [6]:

```
def kthhighestfrequency(s,k):
    unique={}
    for a in s:
        if a not in unique:
            unique[a]=1
        else:
            unique[a]+=1
    print(unique)
    uniquefreq=[]
    for value in unique.values():
        if value not in uniquefreq:
            uniquefreq.append(value)
    print(uniquefreq)
    uniquefreq=sorted(uniquefreq,reverse=True)
    print(uniquefreq)
    kfreq=uniquefreq[k-1]
    kfreqchar=[]
    print(unique.items())
    for item in unique.items():
        if item[1]==kfreq:
            kfreqchar.append(item[0])
    print(kfreqchar)
    return min(kfreqchar)


s=[9,8,6,5,2,3,4,9,6,7,7,7,6,6,7]
# with open("k-largest-frequency-input.txt",'r')as f:


kthhighestfrequency(s,1)
```

```
{9: 2, 8: 1, 6: 4, 5: 1, 2: 1, 3: 1, 4: 1, 7: 4}
[2, 1, 4]
[4, 2, 1]
dict_items([(9, 2), (8, 1), (6, 4), (5, 1), (2, 1), (3, 1), (4, 1), (7, 4)])
[6, 7]
```

Out[6]:

```
6
```

In [11]:

```
def kthhighestfrequency(s,k):
    unique={}
    for a in s:
        if a not in unique:
            unique[a]=1
        else:
            unique[a]+=1
    print(unique)
    uniquefreq=[]
    for value in unique.values():
        if value not in uniquefreq:
            uniquefreq.append(value)
    print(uniquefreq)
    uniquefreq=sorted(uniquefreq,reverse=True)
    print(uniquefreq)
    kfreq=uniquefreq[k-1]
    kfreqchar=[]
    print(unique.items())
    for item in unique.items():
        if item[1]==kfreq:
            kfreqchar.append(item[0])
    print(kfreqchar)
    if len(kfreqchar)==1:
    return min(kfreqchar)
def a():
    with open("./DataFiles/k-largest-frequency-input.txt",'r')as f:
        t=int(f.readline())
        for i in range(t):
            s=f.readline()
            k=int(f.readline())
            print(kthhighestfrequency(s,k))
a()

# kthhighestfrequency(s,1)
```

```
     32
     33 # kthhighestfrequency(s,1)

<ipython-input-11-19437847f661> in a()
     28             s=f.readline()
     29             k=int(f.readline())
---> 30             print(kthhighestfrequency(s,k))
     31 a()
     32

<ipython-input-11-19437847f661> in kthhighestfrequency(s, k)
     14     uniquefreq=sorted(uniquefreq,reverse=True)
     15     print(uniquefreq)
---> 16     kfreq=uniquefreq[k-1]
     17     kfreqchar=[]
     18     print(unique.items())

IndexError: list index out of range
```

In [ ]:

```
1
```