LAB#29

Example#1: Write a program to create a priority queue by using list data structure.

Solution:

```
class priorityqueue:
    def __init__(self):
        self.items=[]
    def push(self,data,priority):
        index=0
        while index<len(self.items) and self.items[index][1]<priority:
            index=index+1
        self.items.insert(index,(data,priority))
    def is_empty(self):
        return len(self.items)==0
    def pop(self):
        if self.is_empty():
            print('list is empty')
    def size(self):
        return len(self.items)
    def show_queue(self):
        if self.is_empty():
            print('Queue is empty')
        else:
            print('Queue:')
            for i in self.items:
                print(i,end=' ')
```

```
23      def pop(self):
24          if self.is_empty():
25              print('The priority queue is empty.')
26              return None
27          a=self.items.pop(0)
28          print('\n The popped value is:',a)
29
30
31  p=priorityqueue()
32  p.push('Usain',2)
33  p.push('Qasim',4)
34  p.push('Imran',5)
35  p.push('Abbas',6)
36  p.push('Akbar',1)
37  p.push('Muhammad Sharif',3)
38  p.show_queue()
39  p.pop()
40  p.show_queue()
41
```

Output:

```
Queue:
('Akbar', 1) ('Usain', 2) ('Muhammad Sharif', 3) ('Qasim', 4) ('Imran', 5) ('Abbas', 6)
 The popped value is: ('Akbar', 1)
Queue:
('Usain', 2) ('Muhammad Sharif', 3) ('Qasim', 4) ('Imran', 5) ('Abbas', 6)
```

Class Assignment

Q#1: Write a program to create a priority queue by using linked list.

Your program must include all the functions that we used in Example #1 from Lab #29, such as push (), pop (), and others.