

```

1  from exceptions import Empty
2
3  class LinkedQueue:
4      class _Node:
5          __slots__ = '_element', '_next'
6
7          def __init__(self, element, next):
8              self._element = element
9              self._next = next
10
11     def __init__(self):
12         self._head = None
13         self._tail = None
14         self._size = 0
15
16     def __len__(self):
17         return self._size
18     def is_empty(self):
19         return self._size == 0
20
21     def enqueue(self, e):
22         newNode = self._Node(e, None)
23         if self.is_empty():
24             self._head = newNode
25         else :
26             self._tail._next = newNode
27             self._tail = newNode
28             self._size = self._size + 1
29
30     def dequeue(self):
31         if self.is_empty():
32             raise Empty('Queue is Empty')
33         value = self._head._element
34         self._head = self._head._next
35         self._size = self._size - 1
36         if self.is_empty():
37             self._tail = None
38         return value
39
40     def first(self):
41         if self.is_empty():
42             raise Empty('Queue is Empty')
43         return self._head._element
44
45     def display(self):
46         temp = self._head
47         while temp :

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48         print(temp._element, end='-->')
49         temp = temp._next
50     print()
51
52 q = LinkedQueue()
53 q.enqueue(10)
54 q.enqueue(20)
55 q.display()
56 print('Length: ', len(q))
57 print('Dequeue: ',q.dequeue())
58 q.display()
59 q.enqueue(30)
60 q.enqueue(40)
61 q.display()
62 print('First Element: ', q.first())
63 q.display()
64 print('Dequeue: ',q.dequeue())
65 q.display()
66
67
68
69
```