```
 1 from exceptions import Empty
 2
 3 class ArrayDeque:
 4     def __init__(self):
 5         self._data = []
 6         self._front = 0
 7     def __len__(self):
 8         return len(self._data)
 9     def is_empty(self):
10         return len(self._data)==0
11     def first(self):
12         if self.is_empty():
13             raise Empty('Deque is Empty')
14         return self._data[self._front]
15
16     def add_first(self, e):
17         self._data.insert(self._front,e)
18
19     def add_last(self, e):
20         self._data.append(e)
21
22     def delete_first(self):
23         if self.is_empty():
24             raise Empty('Deque is Empty')
25         value = self._data.pop(self._front)
26         return value
27
28     def delete_last(self):
29         if self.is_empty():
30             raise Empty('Deque is Empty')
31         value = self._data.pop()
32         return value
33
34 d = ArrayDeque()
35 d.add_last(10)
36 d.add_last(20)
37 d.add_last(30)
38 d.add_last(40)
39 d.add_last(50)
40 print('Deque: ',d._data)
41 print('Delete First: ',d.delete_first())
42 print('Deque: ',d._data)
43 print('Delete Last: ', d.delete_last())
44 print('Deque: ',d._data)
45 d.add_first(50)
46 print('Deque: ',d._data)
47 d.add_last(60)
```

```
48 print('Deque: ',d._data)
49 print('Length: ',len(d))
50
51
```