

IDB2/DSALGO1

```
1 usage new *
1 class Queue:
    new *
2     def __init__(self):
3         self.queue = []
4
5     7 usages new *
6     def enqueue(self, e):
7         self.queue.append(e)
8         print(f"Enqueued: {e}")
9
10    5 usages new *
11    def dequeue(self):
12        if not self.is_empty():
13            dequeued = self.queue.pop(0)
14            print(f"Dequeued: {dequeued}")
15            return dequeued
16        else:
17            print("Queue is empty")
18            return "Queue is empty"
19
20    1 usage new *
21    def first(self):
22        if not self.is_empty():
23            first_elem = self.queue[0]
24            print(f"First element: {first_elem}")
25            return first_elem
26        else:
27            print("Queue is empty")
28            return "Queue is empty"
29
30    4 usages new *
31    def is_empty(self):
32        empty = len(self.queue) == 0
33        print(f"Queue is empty: {empty}")
34        return empty
```

```
31 new *
32 def __len__(self):
33     queue_length = len(self.queue)
34     print(f"Queue length: {queue_length}")
35     return queue_length
36
37
38 Q = Queue()
39 Q.enqueue(5)
40 Q.enqueue(3)
41 Q.dequeue()
42 Q.enqueue(2)
43 Q.enqueue(8)
44 Q.dequeue()
45 Q.dequeue()
46 Q.is_empty()
47 Q.dequeue()
48 Q.is_empty()
49 Q.enqueue(9)
50 Q.enqueue(7)
51 Q.first()
52 Q.enqueue(6)
53 len(Q)
54 Q.dequeue()
55
```

OUTPUT

```
Z:\DSALG01-IDB2\Activity2\.venv\Scripts\python.exe Z:\DSALG01-IDB2\Activity2\Activity2_Midterm_Yadao.py
Enqueued: 5
Enqueued: 3
Queue is empty: False
Dequeued: 5
Enqueued: 2
Enqueued: 8
Queue is empty: False
Dequeued: 3
Queue is empty: False
Dequeued: 2
Queue is empty: False
Queue is empty: False
Dequeued: 8
Queue is empty: True
Enqueued: 9
Enqueued: 7
Queue is empty: False
First element: 9
Enqueued: 6
Queue length: 3
Queue is empty: False
Dequeued: 9
```