


```

2 usages new *
1 class Queue:
    new *
2     def __init__(self):
3         self.items = []
4
14 usages new *
5     def enqueue(self, e):
6         self.items.append(e)
7         print(f"Enqueued: {e} (Queue: {self.items})")
8
11 usages new *
9     def dequeue(self):
10         if self.is_empty():
11             raise IndexError("dequeue from empty queue")
12         value = self.items.pop(0)
13         print(f"Dequeued: {value} (Queue: {self.items})")
14         return value
15
1 usage new *
16     def first(self):
17         if self.is_empty():
18             raise IndexError("first from empty queue")
19         return self.items[0]
20
4 usages new *
21     def is_empty(self):
22         return len(self.items) == 0
23
new *
24     def __len__(self):
25         return len(self.items)
26
27 > if __name__ == "__main__":
28     # Part 1
29     print("\nPart 1")
30     Q = Queue()
31

```

```

32     Q.enqueue(5)
33     Q.enqueue(3)
34     print("Current length of queue:", len(Q))
35     Q.dequeue()
36     print("Is queue empty?", Q.is_empty())
37     Q.dequeue()
38     print("Is queue empty?", Q.is_empty())
39
40     # print(Q.dequeue()) # if I try to type this. it will result in an error
41
42     Q.enqueue(7)
43     Q.enqueue(9)
44     print("First element:", Q.first())
45     Q.enqueue(4)
46     print("Current length of queue:", len(Q))
47      Q.dequeue()
48
49     # Part 2
50     print("\nPart 2")
51     Q2 = Queue()
52     Q2.enqueue(5)
53     Q2.enqueue(3)
54     print("Current length of queue:", len(Q2))
55     Q2.dequeue()
56     Q2.enqueue(2)
57     Q2.enqueue(8)
58     Q2.dequeue()
59     Q2.dequeue()
60     Q2.enqueue(9)
61     Q2.enqueue(1)
62     Q2.dequeue()
63     Q2.enqueue(7)
64     Q2.enqueue(6)
65     Q2.dequeue()
66     Q2.dequeue()
67     Q2.enqueue(4)

```

Q2.dequeue()

Q2.dequeue()

```
"C:\Program Files\Python312\python.exe" "Z:\DSALG01-1DB2\MIDTERMS\Activity 2.py"
=== Queue Operations - Part 1 ===
Enqueued: 5 (Queue: [5])
Enqueued: 3 (Queue: [5, 3])
Current length of queue: 2
Dequeued: 5 (Queue: [3])
Is queue empty? False
Dequeued: 3 (Queue: [])
Is queue empty? True
Enqueued: 7 (Queue: [7])
Enqueued: 9 (Queue: [7, 9])
First element: 7
Enqueued: 4 (Queue: [7, 9, 4])
Current length of queue: 3
Dequeued: 7 (Queue: [9, 4])

=== Queue Operations - Part 2 ===
Enqueued: 5 (Queue: [5])
Enqueued: 3 (Queue: [5, 3])
Current length of queue: 2
Dequeued: 5 (Queue: [3])
Enqueued: 2 (Queue: [3, 2])
Enqueued: 8 (Queue: [3, 2, 8])
Dequeued: 3 (Queue: [2, 8])
Dequeued: 2 (Queue: [8])
Enqueued: 9 (Queue: [8, 9])
Enqueued: 1 (Queue: [8, 9, 1])
Dequeued: 8 (Queue: [9, 1])
Enqueued: 7 (Queue: [9, 1, 7])
Enqueued: 6 (Queue: [9, 1, 7, 6])
Dequeued: 9 (Queue: [1, 7, 6])
Dequeued: 1 (Queue: [7, 6])
Enqueued: 4 (Queue: [7, 6, 4])
Dequeued: 7 (Queue: [6, 4])
Dequeued: 6 (Queue: [4])

Process finished with exit code 0
|
```