DSA Lab 4

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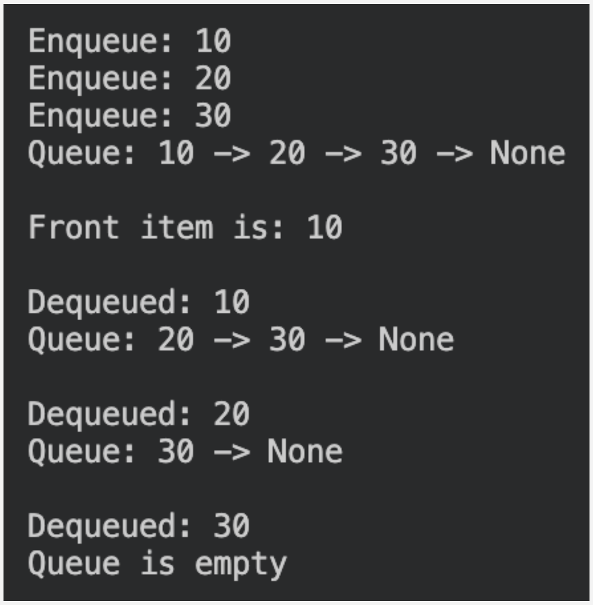
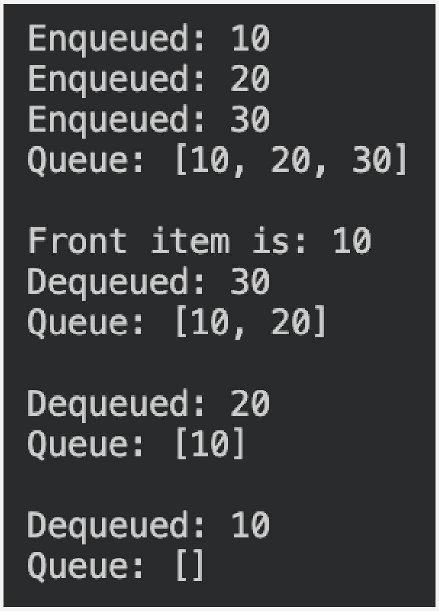
Part 1 Output:



```
Enqueue: 10
Enqueue: 20
Enqueue: 30
Queue: 10 -> 20 -> 30 -> None

Front item is: 10

Dequeued: 10
Queue: 20 -> 30 -> None

Dequeued: 20
Queue: 30 -> None

Dequeued: 30
Queue is empty
```

Part 2 Output:



```
Enqueued: 10
Enqueued: 20
Enqueued: 30
Queue: [10, 20, 30]

Front item is: 10
Dequeued: 30
Queue: [10, 20]

Dequeued: 20
Queue: [10]

Dequeued: 10
Queue: []
```

Report:

Similar to the stack implementations, one of the main differences between the linked list and list implementations for queues is the memory usage, linked lists require more memory because of the next pointer. Another difference between the two is that the list implementation uses built-in operations while the linked list version requires the engineer to write code that handles pointers. A few similarities is that both implementations follow the FIFO (first in, first out) principle and both have the same basic operations such as pop, peek, push, and is_empty.