M4: Hands-On: Stacks and Queues Results for Honey Reddy Nagireddy

Score for this attempt: **3** out of 3

Submitted Mar 19 at 6:28pm

This attempt took less than 1 minute.

Question 1

What does the stack s contain after the following sequence of operations? Note that the top of stack s is the left-most element listed.

```
s.push(1); s.push(2); s.push(3);
s.push(s.pop());
s.pop();
s.push (4); s.push(5);
s.pop();
```

A. *top* | 1, 4, 5

B. *top* | 5, 4, 1

C. *top* | 4, 2, 1

D. *top* | 1, 2, 4

○ A

○ B

Correct!

◉ C

○ D

Question 2

1 / 1 pts

What does the queue q contain after the following sequence of operations? Note that the front of queue q is the left-most element listed and the rear of queue q is the right-most element listed.

```
q.enqueue(1); q.enqueue(2); q.enqueue(3);
q.enqueue(q.dequeue());
q.dequeue();
q.enqueue (4); q.enqueue(5);
q.dequeue();
```

A. *front | 1, 2, 4 | rear*

B. *front | 1, 4, 5 | rear*

C. *front | 5, 4, 1 | rear*

D. *front | 4, 2, 1 | rear*

○ A

Correct!

⦿ B

○ C

○ D

Question 3

Suppose we were to implement a queue using an array such that both **enqeueue** and **dequeue** have $O(1)$ worst-case time complexity. Recall that to ensure constant time operations, we had to treat the array as *circular*. Assume that the **front** and **rear** markers begin at index 0. Suppose also that the queue has a fixed capacity of 5. That is, there is no array resizing done. Which choice below depicts the contents of the array after the following sequence of operations? (The array is shown from left to right beginning at index 0. The symbol • is used to denote an empty cell.)

```
q.enqueue(1); q.enqueue(2); q.enqueue(3); q.enqueue(4);
q.dequeue(); q.dequeue();q.dequeue();
q.enqueue(5); q.enqueue(6); q.enqueue(7);
q.dequeue();
```

A. [5, 6, 7, •, •]

B. [6, 7, •, •, 5]

C. [•, •, 5, 6, 7]

D. [•, 7, 6, 5, •]

Correct!

- ○ A
- ◉ B
- ○ C
- ○ D

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