Q1 Instructions
0 Points

To receive full credit on this quiz, you must score at least 50%.

The Github repo for Lecture 17 is at:
https://github.com/ucsd-cse12-sp21/ucsd-cse12-
sp21.github.io/tree/master/lectures/lecture-17

Q2 Hash Table - Linear Probing
2 Points

Refer to the hash table implementation from lecture 17 and the following hash
function:

```
int hash(char key) {
    return (int) key;
}
```

Also refer to the following sequence of insertions:

```
add('N', 7);
add('R', 24);
add('V', 92);
add('Z', 100);
```

Q2.1 Pre-Expand Capacity
1 Point

Which of the following shows the contents of the bucket array right before calling
expandCapacity()?

○ [null, null, {N: 7}, null]

○ [null, null, {N: 7}, {R: 24}]

⦿ [{V: 92}, null, {N: 7}, {R: 24}]

○ [{V: 92}, {Z: 100}, {N: 7}, {R: 24}]

Q2.2 After Sequence
1 Point

Which of the following shows the contents of the bucket array after the sequence has ended?

○ [{V: 92}, {Z: 100}, {N: 7}, {R: 24}]

○ [null, null, {N: 7}, {R: 24}, {V: 92}, {Z: 100}, null, null]

○ [null, null, {V: 92}, {N: 7}, {R: 24}, {Z: 100}, null, null]

○ [null, null, {R: 24}, {Z: 100}, null, null, {N: 7}, {V: 92}]

⦿ [null, null, {R: 24}, {Z: 100}, null, null, {V: 92}, {N: 7}]

Q3 Amortized Analysis
1 Point

Select all of the following that are true:

☑ The best case for an ArrayList's add() method is O(1)

☑ The worse case for an ArrayList's add() method is O(n)

☐ The average case for ArrayList's add() method is O(n) per add

☑ The average case for ArrayList's add() method is O(1) per add