Q1 Instructions

0 Points

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

The Github repo for Lecture 9 is at:
https://github.com/ucsd-cse12-w21/ucsd-cse12-w21.github.io/tree/master/lectures/lecture-09

Q2 Run-Time

1 Point

```
public static boolean isSorted1(int[] arr) {
   for(int i = 0; i < arr.length - 1; i += 1) {
     if(arr[i] > arr[i + 1]) {
       return false;
     }
   }
   return true;
 }

  public static boolean isSorted2(int[] arr) {
   for(int i = 0; i < arr.length; i += 1) {
     for(int j = i + 1; j < arr.length; j += 1) {
       if(arr[i] > arr[j]) {
         return false;
       }
     }
   }
```

```
    return true;
  }
```

Which of the following are true for the above methods assuming arr.length is very large and the array is already sorted (i.e. worst case)? Select all that apply:

- [ ] isSorted1() and isSorted2() both have linear run-times
- [ ] isSorted1() and isSorted2() both have parabolic run-times
- [x] isSorted1() has a linear run-time and isSorted2() has a parabolic run-time
- [ ] isSorted1() has a parabolic run-time and isSorted2() has a linear run-time
- [x] isSorted1() will always run faster than isSorted2()
- [ ] isSorted2() will always run faster than isSorted1()
- [ ] isSorted1() and isSorted2() run at the same speed

Q3 Counting Steps-Find 1

1 Point

```
boolean find( String[] theList, String toFind ) {
    for ( int i = 0;
          i < theList.length;
          i += 1 ) {
        if ( theList[i].equals( toFind )) {
            return true;
        }
    }
    return false;
}
```

Which of the following are true for the above find() method? Select all that apply:

- [ ] The worst case, best case, and average case have nearly the same steps (within a few steps)
- [x] The best case is much better than the worst case
- [x] The average case is better than the worst case, but not as good as the best case
- [x] The worst cast has linear run-time based on the # of times evaluated
- [ ] The worst cast has parabolic run-time based on the # of times evaluated

Q4 Counting Steps-Find 2

1 Point

```
boolean find( String[] theList, String toFind ) {
   boolean found = false;
   for ( int i = 0;
         i < theList.length;
         i += 1 ) {
      if ( theList[i].equals( toFind )) {
         found = true;
      }
   }
   return found;
}
```

Which of the following are true for the above find() method? Select all that apply:

- [x] The worst case, best case, and average case have nearly the same steps (within a few steps)
- [ ] The best case is much better than the worst case
- [ ] The average case is much better than the worst case, but not as good as the best case
- [x] The worst cast has linear run-time based on the # of times evaluated
- [ ] The worst cast has parabolic run-time based on the # of times evaluated