

## Q1 Instructions

0 Points

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

The Github repo for Lecture 3 is at <https://github.com/ucsd-cse12-sp21/ucsd-cse12-sp21.github.io/tree/master/lectures/lecture-03>

## Q2 Interfaces

3 Points

For Sub questions 2.1-2.3 reference the following code:

```
interface Iface {  
    public boolean m();  
    public int n();  
}
```

```
class A implements Iface {  
    public String s;  
    public String x;
```

```
    public boolean m() {  
        return true;  
    }
```

```
    public int n() {  
        return 12;  
    }  
}
```

```
class B implements Iface {  
    public String s;  
    public String y;
```

```
    public boolean m() {  
        return false;
```

```
}  
  
public int n() {  
    return 2;  
}  
}
```

**Q2.1**

1 Point

Select all of the declarations below that would NOT cause a compile error:

☒ Iface i1 = new A();☐ B b = new Iface();☐ A a1 = new B();☐ Iface i2 = new Iface();☒ A a2 = new A();**Q2.2**

1 Point

Select all of the declarations below that would NOT cause a compile error:

☐ Iface i1 = new A(); String val1 = i1.s;☐ Iface i2 = new B(); String val2 = i2.x;☒ A a1 = new A(); String val3 = a1.s;☐ A a2 = new A(); String val4 = a2.y;

**Q2.3**

1 Point

What would be printed when the main method is executed?

```
class Q3 {  
    A a1 = new A();  
    boolean val1 = a1.m();  
  
    Iface i1 = new B();  
    int val2 = i1.n();  
  
    Iface i2 = a1;  
    int val3 = i2.n();  
  
    public static void main(String[] args){  
        Q3 q = new Q3();  
        System.out.println(q.val1 + ", " + q.val2 + ", " + q.val3);  
    }  
}
```

- ☐ false, 2, 12
- ☐ false, 12, 2
- ☐ false, 12, 12
- ☐ true, 2, 2
- ☒ true, 2, 12
- ☐ true, 12, 2

**Q3 Tracing**

2 Points

For Questions 3.1 and 3.2 reference the following code:

```
class Song {  
    String title;  
    String artist;  
    int year;
```

```
public Song(String title, String artist, int year) {
    this.title = title;
    this.artist = artist;
    this.year = year;
}

class Playlist {
    String title;
    Song[] songs;
    int numSongs;

    public Playlist(int length, String title) {
        this.title = title;
        this.songs = new Song[length];
        this.numSongs = 0;
        for (int i = 0; i < songs.length; i++) {
            this.songs[i] = new Song("", "", 0);
        }
    }

    public Playlist(String title, int length) {
        this.title = title;
        this.songs = new Song[length];
        this.numSongs = 0;
    }

    public boolean setSong(int index, Song song) {
        if (index >= this.songs.length || index < 0) return false;
        this.songs[index] = song;
        return true;
    }

    // returns false if playlist already full, else true
    public boolean addSong(Song newSong) {
        if (this.songs.length == this.numSongs) return false;
        this.songs[this.numSongs] = newSong;
        this.numSongs++;
        return true;
    }
}
```

```
}  
}
```

**Q3.1**

1 Point

How many total Song and Playlist objects are created?

```
Playlist playlist1 = new Playlist("90s Pop", 3);  
Song song1 = new Song("Say My Name", "Destiny's Child", 1999);  
Song song2 = new Song("I Want It That Way", "Backstreet Boys", 1999);  
playlist1.addSong(song1);  
playlist1.addSong(song2);
```

☒ 3☐ 4☐ 5☐ 6☐ 7**Q3.2**

1 Point

How many total Song and Playlist objects are created?

```
Playlist playlist2 = new Playlist(4, "More 90s Pop");  
Song song3 = new Song("Wannabe", "Spice Girls", 1996);  
Song song4 = new Song("...Baby One More Time", "Britney Spears", 1998);  
playlist2.setSong(2, song3);  
playlist2.setSong(0, song4);
```

☐ 3☐ 4☐ 5☐ 6☒ 7☐ 8