CS 61B Discussion Quiz 1

Write your name and SID above. Detach this page from your discussion handout, and turn it in when your TA instructs you to do so. These quizzes are used as attendance.

Questions

1. Tell us a little about yourself.

2. What do you expect to learn from the course?

3. Please draw how you feel today in the box below. :)

Name: ___________________________ SID: ___________________________
1 Our First Java Program

Below is our first Java program of the semester. Next to each line, write out what you think the code will do when run. This exercise is adapted from Head First Java.

```java
1  int size = 27;
2  String name = "Fido";
3  Dog myDog = new Dog(name, size);
4  int x = size - 5;
5  if (x < 15) {
6      myDog.bark(8);
7  }
8
9  while (x > 3) {
10     x -= 1;
11     myDog.play();
12  }
13
14  int[] numList = {2, 4, 6, 8};
15  System.out.print("Hello ");
16  System.out.println("Dog: " + name);
17  System.out.println(numList[1]);
18  if (numList[3] == 8) {
19      System.out.println("potato");
20  }
```

2 Mystery

This is a function (a.k.a. method). It takes an array of integers and an integer as arguments, and returns an integer.

```java
1  public static int mystery(int[] inputArray, int k) {
2      int x = inputArray[k];
3      int answer = k;
4      int index = k + 1;
5      while (index < inputArray.length) {
6          if (inputArray[index] < x) {
7              x = inputArray[index];
8              answer = index;
9          }
10          index = index + 1;
11      }
12      return answer;
13  }
```

Describe in English what mystery returns if inputArray = [3, 0, 4, 6, 3] and k = 2.
Extra: This is another function. It takes an array of integers and returns nothing.

```java
public static void mystery2(int[] inputArray) {
    int index = 0;
    while (index < inputArray.length) {
        int targetIndex = mystery(inputArray, index);
        int temp = inputArray[targetIndex];
        inputArray[targetIndex] = inputArray[index];
        inputArray[index] = temp;
        index = index + 1;
    }
}
```

Describe what `mystery2` does if `inputArray = [3, 0, 4, 6, 3].`

3 Writing Your First Program

Implement `fib` which takes in an integer `n` and returns the `n`th Fibonacci number.

The Fibonacci sequence is 0, 1, 1, 2, 3, 5, 8, 13, 21, ....

```java
public static int fib(int n) {
}
```

Extra: Implement `fib` in 5 lines or fewer. Your answer must be efficient.

```java
public static int fib2(int n, int k, int f0, int f1) {
}
```