CSC108H lab – week 13

Wow. Last lab.

This document contains the instructions for the week 13 CSC108H lab. To earn your lab mark, you must actively participate in the lab. You don't need to finish in the time alloted, you just need to try hard.

In this lab, you will work with your partner to learn more about `equals` and overriding.

1 instanceof

`a instanceof C` evaluates to `true` if and only if `a` refers to an object of class `C`.

Type this in the Interactions pane:

```
Object o= new Date();
o instanceof Date
o instanceof String
```

Notice the `o` in `instanceof` is lowercase. More importantly, notice that `instanceof` is a boolean operator, much like `<=` and `!=`.

Try the same thing with a `String` if you're still unsure about `instanceof`:

```
o= "Hi";
o instanceof Date
o instanceof String
```

2 String equals

Switch navigator and driver.

Try this in the Interactions pane:

```
"Hi".equals("Ho")
"Hi".equals("Hi")
```

Now write a line checking whether `"Hi"` is equal to an `Integer` wrapping `-33`. Discuss with your partner whether it will throw a `ClassCastException`. Run it and find out.

3 Groups

Switch navigator and driver.

In a bizarre first-year university course, students work in groups on assignments. There are up to three students allowed in an assignment group, although most groups have only one or two students in them. The students in a group are tracked using their computer account names, for example `c2feedme`.

Design and write class `Group`. Use `null` for pieces of information that are not available. Write three constructors, one for each possible group size.

Test it from the Interactions pane.

Switch navigator and driver.

Write a `toString` method that returns the account names separated by spaces.

Test it from the Interactions pane.

Switch navigator and driver.

Override method `equals`. That is, put this into your class:

```
/**
 * Return true if o is an instance of Group, o is not null, and this Group
 * is equal to o.
 */
public boolean equals(Object o) {
}
```

Two groups are equal if they have the same computer account names sent in the same order to the constructor.

To start, write code only to handle groups of size 1. Don't forget to check whether `o` is an instance of `Group`.

Test it from the Interactions pane:

```
Group g1= new Group("c2feedme");
g1.equals(g1)
Group g2= new Group("c2feedme");
g1.equals(g2)
```

Switch navigator and driver.

Add code to handle a `null` argument. Test it with this:

```
g1.equals(null)
```

Switch navigator and driver.

Add code to handle groups of any size. Remeber that groups have at least one member. You will likely need a helper method that takes two `String`s and compares them for equality, where one or both of them might be `null`.

Test it from the Interactions pane.