

# Practice Quiz 11

CSCI 136: Spring 2022

Your name: \_\_\_\_\_

This week's quizzes cover readings, handouts, labs, and lecture materials up to and including May 2nd. Answer the following questions as practice for your graded quiz on Friday.

1. Please fill in a simple `hashCode()` method for the following class. (Of course, there is more than one acceptable answer for this—but your method should meet Java's "general hashcode contract" (from the official documentation) that we saw in class.)

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```
public class UserAccount {
    protected String name;
    protected String email;
    protected int IDnum;

    /* other constructors, getters, and setters omitted for space*/
    public String getEmail() {
        return email;
    }

    public boolean equals(Object other) {
        return email.equals( ((UserAccount)other).getEmail() );
    }

    public int hashCode() {
        return email.hashCode();
    }
}
```

---

2. Consider the following two potential `hashCode()` methods for the `Vector` class:

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```
//Option 1:
public int hashCode() {
    return get(0).hashCode();
}

//Option 2:
public int hashCode() {
    int ret = 0;
    for(int i = 0; i < size() i++) {
        ret += get(i).hashCode();
    }
    return ret;
}
```

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- (a) What is one advantage of Option 1 over Option 2?

Your answer: Option 1 is  $O(1)$  time, where Option 2 is  $O(n)$  time on a Vector of length  $n$ .

- (b) What is one advantage of Option 2 over Option 1?

Your answer: Option 2 will spread elements out much more effectively.