FIT2107
Week 6 Workshop

White-box testing

I have provided some Python source code on Moodle, implementing a class called `Person` with a single method `greet()`, which returns a (hopefully) appropriate greeting for that person.

Your job is to test the `greet()` method using standard white-box testing techniques.

Part 1

Draw a CFG for `greet()`.

I suggest that each of you tries this ON YOUR OWN first, then, once you have attempted it individually, compare them to make sure they are the same. If there are substantive discrepancies that you can't resolve, ask your facilitator.

Part 2

As a group, use your CFG to come up with test inputs for `greet()` that achieve 100% *branch coverage*.

Write these down.

Part 3

Will every test suite for `greet()` with 100% *statement* coverage also give 100% branch coverage? Explain why or why not.

Part 4

Calculate how many tests would be required to achieve *path coverage* for `greet()`.

Part 5

You have a Python function that has three inputs, a, b, and c, and has the following lines of code in it:

```
1    if a and b and not c:
2        print("hello")
3    if a or (not b and c):
4        print("goodbye")
```

Come up with a set of test inputs (eg values for a, b, and c) that achieve MC/DC coverage for the conditions line 1, and line 3.

Hint: tackle line 1's condition first, then see what tests you need to add to get MC/DC coverage for 3.