

CSC364/CSCM64 Lab 5

To be solved in groups of two or three.

Last day for lab sign-off: 4th April 2022

Consider the following specification and program:

Require: x and y are non-negative integers.

Ensure: GCD(x,y) returns the greatest common divisor of x and y.

```
1: function GCD(int x, int y)
2:   int temp;
3:   while (y != 0) do
4:     temp = y;
5:     y = x mod y;
6:     x = temp;
7:   end while
8:   return x;
9: end function
```

Task 1. Draw the program graph of the program GCD.

Task 2.

1. Give a minimal test suite for C_0 coverage. Give a brief argument why your test suite covers and why it is minimal.
2. Give a minimal test suite for C_1 coverage. Give a brief argument why your test suite covers and why it is minimal.
3. Give a minimal test suite for modified Decision/Condition coverage. Give a brief argument why your test suite covers and why it is minimal.
4. Give a minimal test suite for $C_i(3)$ coverage. Give a brief argument why your test suite covers and why it is minimal.

Task 3.

1. Give a table that lists the define/use nodes for the variables x,y, and temp.
2. Give a minimal test suite for the All Uses criterion.