# Homework 3: Testing

```
int gcdByBruteForce(int n1, int n2) {
  if (n1 == 0)
    return n2;
  if (n2 == 0)
    return n1;
  int gcd = 1;
  for (int i = 1; ; i++) {
    if (i > n1)
      break;
    if (i > n2)
      break;
    if (n1 % i == 0) {
      if (n2 % i == 0) {
        gcd = i;
      }
    }
  }
  return gcd;
}
```

# Requirements of Test Cases

- Draw a CFG, where nodes represent statements, and edges represent the control flow
- Index each CFG node with a number
- Design two sets of test cases to separately achieve
  - Statement Coverage: Ensure that every statement is covered at least once
  - Branch Coverage: Ensure that every branch is covered at least once
- For each designed the test case, describe
  - the test inputs, and
  - the CFG nodes (i.e., the path) covered by the test

- Please organize each set of test cases in a table, as shown below:

| n1 | n2 | path |
|---|---|---|
| 0 | 1 | 1, 2 (here 1 and 2 represent the CFG node indices) |
| … | … | … |