**COMP 3000 – Design and Analysis of Algorithms**

**Semester 3 2016-2017**

**Assignment 2**

**Due Date: 11:59pm, 24th June, 2017**

Write a program to fill a 5 x 5 grid such that each row (from left to right), each column (from top to bottom) and each diagonal (from left to right) form a 5-digit prime number. The sum of the digits of each prime is the same. For example:

1 1 3 5 1

3 3 2 0 3

3 0 3 2 3

1 4 0 3 3

3 3 3 1 1

Here, the digits of each prime add up to 11. The diagonal primes are 13331 and 34301.

Data consists of two numbers, m and n. The digits of each prime must add up to m and n must be placed in the top-left position. In the example, m = 11 and n = 1.

You may use the same prime more than once in the grid. You must output all possible solutions.

In addition to the above, there are two other solutions for m = 11 and n = 1. They are:

1 1 3 5 1 1 3 3 1 3

1 4 0 3 3 1 3 0 4 3

3 0 3 2 3 and 3 2 3 0 3

5 3 2 0 1 5 0 2 3 1

1 3 3 1 3 1 3 3 3 1

**Submission Instructions:**

1. Label your file using the first initial of your first name, your last name and the assignment number, eg. j\_doe\_A2.
2. Include your full name and ID number at the top of the file.
3. Email your solution to the following address: **ssooklal27@gmail.com**