COMP251 – Week 2 – Lab2
May 10, 2017

Goal: This lab will give you practice with algorithm analysis.

Getting Started

You cannot have a partner for this lab. You can read the lectures to answer the question. Hand a hardcopy in next week at the beginning of class.

Part I (12 point)

For each of the following code fragments, do the following:

a. Find the number of basic instructions we need to run the code.
b. Give the big-O analysis of the running time.
c. [Do this at home] Implement the code and run for several values of N, then compare your mathematical analysis with the actual running time.

Submission

You need to show and explain your answers to your lab monitor or the instructor by the end of class.

A)

```
int sum = 0;
for (int i = n; i > 0; i--)
    sum++;
```

B)

```
int sum = 0;
for (int i = 0; i < n; i++)
    sum++;
for (int j = 0; j < n; j++)
    sum++;
```

C)

```
int sum = 0;
for (int i = n; i > 0; i = i/2)
    sum++;
```

D)

```
int sum = 0;
for (int i = 0; i < n; i++)
     for (int j = 0; j < n*n; j++)
         sum++;
```