COSC3320: A warm up practice for graph hw

1 Introduction

You will write a C++ program that can calculate the number of distinct vertices in a graph given the graph edges .

2 Input and output

Input

The edges list of the graph are (1,2) (1,3) (3,2) (3,5) (3,7) (3,15) (5,1) (5,2) (6,4) (6,11) (6, 13) (7,1) (7,3). You can store it in any format (think about the data structure explained in the lecture). You can hard-coded those edges in your program. (Reminder: the input for the graph hw later will read from a file)

Output

The output is the number of distinct vertices. For the input given in the previous paragraph, the output is 10. There should be no extra spaces and characters before or after the number, just a number.
Output should be:

```
10
```

3 Program input and output specification, main call

The main program should be called **count.cpp**. The output should be written to the console without any extra characters, but the TAs can redirect it to create some output file. Compile syntax at the OS prompt:

```
g++ count.cpp -o count
```

Run syntax at the OS prompt:

```
./count
```

4 Requirements

- You need to find a data structure to store the edges. The graph is small, so it can fit in the main memory. You can use any data structure you want, an adjacent matrix is allowed.
- Correctness is the most important requirement. Your program should not crash or produce exceptions.

5 Programming requirements

- Must work on our Linux server
- You can use STL or any c++ libaries or you can develop your own C++ classes. You are required to disclose any code you downloaded/copied.
- Your program must compile/run from the command line. There must not be any dependency with your IDE.