Gebze Technical University
Computer Engineering

CSE 222 - 2019 Spring

HOMEWORK 8 REPORT

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1   INTRODUCTION

1.1   Problem Definition
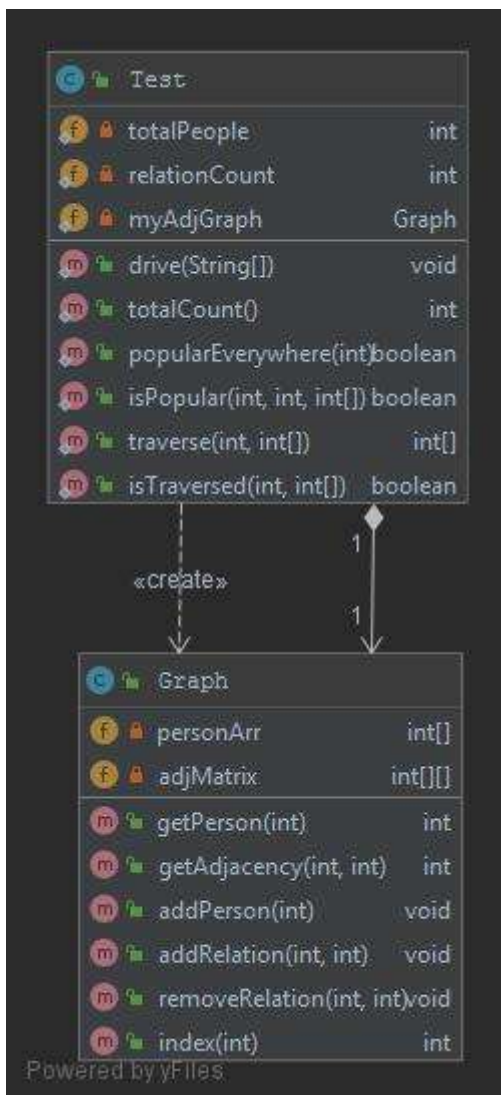
To implement graph data type and use it on finding popularity.

1.2   System Requirements

- 64-bit versions of Microsoft Windows 10, 8, 7 (SP1)
- 2 GB RAM minimum, 8 GB RAM recommended
- 2.5 GB hard disk space, SSD recommended
- 1024x768 minimum screen resolution

2 METHOD

2.1 Class Diagrams

2.2 Problem Solution Approach

I used adjacency matrix to show the relation between the nodes while implementing my graph data type. Complexity of adding an element is $O(|V|^2)$, complexity of adding or removing relation is $O(1)$, complexity of removing an element would also be $O(|V|^2)$ due to my implementation.

3   RESULT

3.1   Test Cases

Input:
3 3
1 2
2 1
2 3

Output:
1

Input:
6 6
1 4
2 3
3 4
5 6
6 2
4 1

Output:
2

Input:
6 5
1 4
2 3
3 4
5 6
6 2

Output:
1

3.2   Running Results

"C:\Program Files\Java\jdk-11.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ
IDEA 2018.3.5\lib\idea_rt.jar=50012:C:\Program Files\JetBrains\IntelliJ IDEA 2018.3.5\bin" -
Dfile.encoding=UTF-8 -classpath
C:\Users\Tayfun\IdeaProjects\cse222_hw8\out\production\cse222_hw8 Main
C:/Users/Tayfun/IdeaProjects/cse222_hw8/src/input.txt
1

Process finished with exit code 0

"C:\Program Files\Java\jdk-11.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ
IDEA 2018.3.5\lib\idea_rt.jar=50012:C:\Program Files\JetBrains\IntelliJ IDEA 2018.3.5\bin" -
Dfile.encoding=UTF-8 -classpath

C:\Users\Tayfun\IdeaProjects\cse222_hw8\out\production\cse222_hw8 Main
C:/Users/Tayfun/IdeaProjects/cse222_hw8/src/input.txt
2

Process finished with exit code 0

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