

Assignment #2  
Course: CSD201

P1. Submitting:

- Submit source codes (only files holding codes)
- Compress all source code files into a zipped named Fullname.zip or Fullname.rar, for example: NguyenVanA.zip or LeVanB.rar
- Last support and discuss: Oct 24
- Deadline: 23:59, Oct 27

P2. Write two Java programs to do:

1. Project Tree
  - Implement class Student\_info, holding information as follow:
    - student\_code (integer); Each student is allocated a unique code, from 1 to 99
    - name
    - gender
    - gpa\_score (int, from 0 to 10)
  - Implement class Node, holding information as follow:
    - student\_info data
    - Node left
    - Node right
  - Implement class AVL\_tree:
    - including Node root
    - two constructors
    - insert(Student\_info)
    - load\_data(filepath) /\*data\_AVL.txt\*/
    - search(int student\_code)
    - delete\_by\_merging(int student\_code)
    - delete\_by\_copying(int student\_code)
    - write\_data(filepath) /\*data\_AVL.txt\*/
    - main function: loading data from a file, then running some activities (with a menu), finally, writing all data into the file.

## 2. Project Graph

- Implement class Graph, including:
  - Vertices (a list of vertices)
  - Edges
  - int adjacency\_matrix[][]
  - int incident\_matrix[][]
  - adjacency\_list
  - two constructors
  - load\_data(filepath) /\*data\_Graph.txt\*/ In this function, data from a file must be loaded into the Vertices and adjacency\_matrix, then transformed into the other data fields.
  - bfs()
  - dfs()
  - compute\_degree(vertex)
  - dijkstra()
  - floyd()
  - prim()
  - kruskal()
  - euler\_path()
  - write\_data(filepath) /\*data\_Graph.txt\*/
  - main function: loading data from a file, then running some activities (with a menu), finally, writing all data into the file.

End

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