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Software Development Intern Take Home Challenge: Report

There are 2 classes:
1) VolunteerNode
2) Graph

VolunteerNode:
Basic node class that stores the information (name, id,schedule) of the volunteer. There is a conflictedVolunteer array which keeps track of all the adjacent volunteers(neighbors) who have met in the office.

conflictedWeightMap ***(For bonus task)***: A member variable of the node class that stores the weight(value) of a conflicting node(volunteer) as a <key, value> pair with respect to the volunteer id(key) of the conflicting node.

dateShiftMap: Stores the shift of a volunteer. This member variable is used later to detect conflict and form a graph.

Graph:
Basically used to form a graph, connect edges between conflicting nodes (volunteers) using member attribute (conflictedVolunteer, dateShiftMap) of VolunteerNode class.

How did I decide when to add edges between two nodes?

For every row of the given csv file I make a node for the corresponding volunteer. Then I've checked in the addNode function of the graph class if the node is already added in the iNodeMap of the graph class.

If it's already added, then I just update its schedule and checked if it creates any conflict between any nodes of the iNodeMap (inside addEdge Function).

If it's not already added (a new node) then I add the node into iNodeMap, update its schedule and checked if it creates any conflict between any nodes of the iNodeMap (inside addEdge Function).

Challenges:

Found an error: *'IterableIterator <[number, any]>' is not an array type or a string type. Use compiler option '–downlevelIteration'* to allow iterating of iterators.
I solved it by adding "downlevelIteration": true, in compilerOptions inside tsconfig.josn file.

Requirements to run the code:

Need to install these npm modules

- npm install papaparse
- Add "downlevelIteration": true, in compilerOptions inside tsconfig.josn file
  If it is not working then compile with this command: tsc.cmd .\main.ts --downLevelIteration
- npm i -s csv-writer (for exporting CSV file)
- Change fileName variable for a different input file
- ***input FILE MUST BE IN CSV FORMAT***
- ***ouput file will be also in CSV format.***

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Demo output :