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Project Goals:

Rahul Vasanth (rvasant2), Chidambara Anagani (canaga2), Praneeth Mekapati (pm14), and Alaa Shuaibi (ashuai6) will work together to complete the final project for CS 225 in Fall 2020 taught by Prof. Evans. Our goal is to apply the conceptual knowledge we've learned to the OpenFlights dataset which links flights with airports from 2014. https://openflights.org/data.html

This will be a graph based project, and the group will implement at least one traversal covered in class and two algorithms, one of which is either complex or has not been covered in class. Theoretical project goals are as follows:

1. BFS (Breadth First Search) on our graph
    a. BFS will require the use of additional data structures.
2. Dijkstra's Shortest Path Algorithm
    a. This was covered in class
    b. This has real world relevance in mitigating fuel costs and travel time.
3. Landmark Path Algorithm
    a. This was not covered in class.
    b. This is particularly relevant because many times people will want to visit certain airports with attractions or specifically visit certain countries or regions on their route to their final destination.

This work will form the core of our Project Goals Document. If time permits and there is additional interest, members will implement additional traversals or algorithms of their choosing but it is important to note that this is not a project requirement, just a means for those interested in going above and beyond the Project Goals and to allow for some flexibility. If another algorithm is implemented, it can be substituted for the Landmark Path Algorithm or Dijkstra's Shortest Path algorithm. Similarly, please note that if the group decides to implement DFS it can be substituted in place of the BFS algorithm.

A weekly document containing a paragraph that summarizes the group's work and provides a status update will be committed via Git each week.

We will also be providing a final report, with figures, that provides a summary of what we have done, additional areas for future inquiry, and key insights we discover as we work on the project.

This will be at least one page, perhaps more, not including and graphs or figures included. It will be in .md or .pdf format.

Test cases will be supplied for the algorithms as required, and the code will run on U of I's EWS. We will be writing our functional codebase entirely in C++ and be using only material in our group repository and publicly installed libraries on EWS. We will also include a README in .md or .pdf format with instructions on how to build and run our executable file.

Lastly, a presentation will be recorded (or presented live if opportunity permits) detailing our work, how we arrived and worked towards our project goals, and our results. It will be at least 10 minutes long.