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CPSC 450

Project Update

Girvan-Newman Algorithm (Finding Communities)

- My initial plans have not changed, but I have learned how the algorithm works and I have decide upon a specific implementation
- So far I have created and tested a helper algorithm called number_of_shortest_paths(int src, Map& num_shortest_paths)const
- This algorithm does exactly what you think. It finds the number of shortest paths from a source to all other vertices in the graph
- The number of shortest paths is only multiple when there is a tie
- I have also started the Grivan-newman algorithm but not completed it yet.
- I have learned that the algorithm will for each vertex:
  1. find the number of shortest paths for all other vertices
  2. Starting from the furthest vertex calculate the EBC score for all edges.

  Then it will add all these scores for the all the edges divided by 2.

  Finally, it will remove edges starting with the highest EBC scores until the graph is disconnected.

  The resulting components are the communities.