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Academic Showcase Proposal

Our team will study Tarjan's Bridge Detection algorithm and implement it using data from the METAL project. This algorithm detects the edges in a graph that serve as the only path to some subset of points within a graph. The application of this algorithm in reality could be in the field of emergency preparedness/response. In the anticipation of a big storm, utility/first responders may be curious what roads should be of the most concern in their city. In this context, bridges will be of the most concern because if that road were to wash out or have a tree fall, some percentage of residents will be left isolated from the rest of the city. We will apply Tarjan's Bridge Detection algorithm to a graph consisting of roads and intersections to various storm-prone cities. The second piece of our project will be a code based implementation of the game show Wheel of Fortune. This code will randomly select a phrase from a text file, produce a random number as the each player's 'spin', and track money totals for each player until the phrase is completed. This code will utilize brute force string search methods to see if a player's letter guess or phrase guess is correct. The major milestones for this project consist of processing the METAL graph data to the algorithm, determining correct output and printing in a readable format, and determining the process for the game. The first milestone will be completed by 3/22, the second by 3/29, and the third milestone will be completed by 4/12.