Submit a writeup of your design, screenshots of the results, and code files in a zip file.

A screen shot of a computer screen

Description automatically generated

**Figure 1.** Displaying the adjacency matrix and team name integer designations.

A screenshot of a computer program

Description automatically generated

**Figure 2.** Probing the graph to determine the total number of transfers for a user-specified team (sum of incident weights for a team vertex) as well as the total number of transfers between two user-specified teams (an edge weight between two specific vertices).

The program uses a graph stored as an adjacency matrix, where NFL teams are numbered [0:31] according to the alphabetical order of their home cities. A separate vector stores the team’s name as a string. The program selects edge weights based on a uniform integer distribution at execution time. To determine the total number of transfers for a team, one may either sum the weight of all incident edges by traversing a row or a column (the matrix is symmetric since it represents an undirected graph). To determine the number of transfers between two specific teams, we grab the weight of the edge between the two specified teams. Since the matrix is symmetric, we may index the 2D array by interpreting the first team number as a row index or column index, with the second team number being the opposite.