

## Road Trip Design

1. Code introduces the user to the program
  2. Code asks the user to input beginning city and ending city
  3. Adjacency list of cities and their roads to other cities is created
  4. Code asks if user wishes to input any attractions they wish to visit starting from the beginning city and ends at ending city
    - a. If reply is no
    - b. If reply is yes
- A. If Reply is No
- a. Graph activates Shortest path algorithm (Dijkstra's algorithm) with starting city as source node
  - b. Shortest number of miles is displayed and time is displayed in (Days, Hours, Minutes) format
- B. If Reply is Yes
- a. Program asks users to lists attraction(s) they wish to visit
  - b. From starting city, program runs dijkstra's algorithm to find the city with the shortest path with the beginning city as the source node and records the number of miles and length of time.
  - c. Dijkstra's algorithm runs again on the attraction list with the source node being the city that has the shortest path from the beginning city and adds the number of miles and length of time to the recorded data.
  - d. Program goes through the list until the last remaining attraction remains
  - e. The last attraction finds the shortest path to the ending city node and adds the final number of miles and length of time to existing data.

- f. Program prints out the total number of miles while the total length of time of the route is displayed in (Days, Hours, Minutes) format.