COMP 106 Object Oriented Programming
Bonus (Summer) Assignment

In this assignment, you are going to compute a road path between two cities. Given the cities.txt and roads.txt files, you will output a path between two input cities. Assume that user enters Tekirdag as the starting city and Sivas as the destination city, your program should output the map as shown in Figure 1. The numbers below the city names denote the distance from that city to the starting city. You should also output the total distance and all city names in the road path to the command prompt, as follows:

Sample Command Prompt Output
Canakkale to Trabzon: 1336km. Road path: Canakkale Balikesir Izmir Afyon Konya Adana Sanliurfa Mardin Van Malatya Trabzon

If there is no "possible road path" between the two cities, you should output a message similar to "There is no road path from Edirne to Kars".

You do not need to find *the shortest road* between the cities, i.e., it is sufficient to find *any connecting road path*. However, it would be great if you can find the shortest path ☺ [Tip: Search for *shortest path algorithms*]

You are given three files:
cities.txt: contains city names and their (x,y) coordinates.
roads.txt: contains pair of city names if there is a road between them.
turkey.png: image file for Turkey.

Tips:
1. You can use Image and ImageView classes to read an image and display it in the pane.
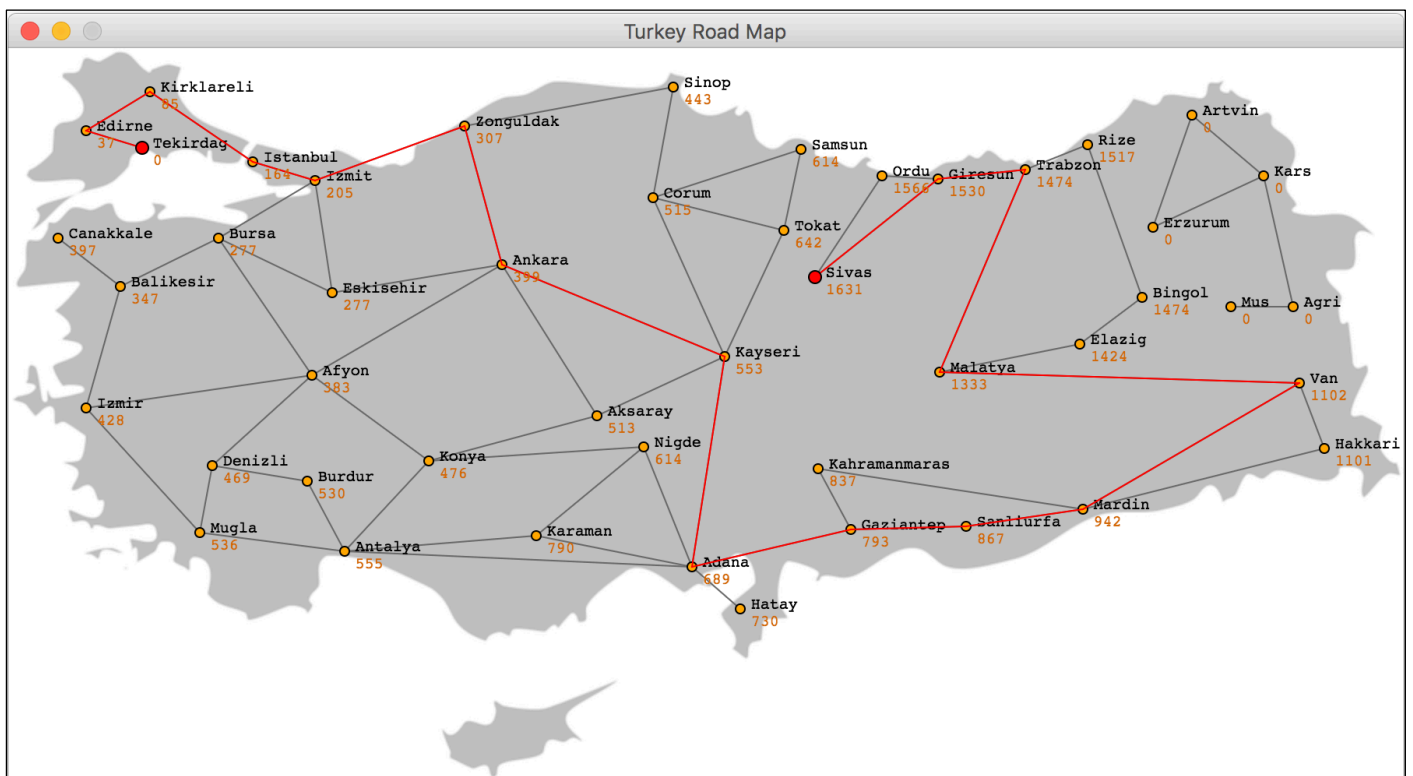2. You can use java.io.File and Scanner classes to read text from a text file.

Figure 1. Road path from Tekirdag to Sivas (shown in red).