Exploratory Data Analysis and Visualization - MSc AIDA UoM

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You are provided with the file `greece.csv`, which contains pairs of adjacent prefectures in Greece and the shortest road distance between their capitals. Carefully study the following resources that we covered in class:

- Jesse Sadler's "Introduction to Network Analysis with R"
- R Views "Graph analysis using the tidyverse" (pay particular attention to this source)

Tasks:

1. Create an undirected network where the nodes are the prefectures and the edges connect adjacent prefectures with the road distance of their capitals as the weight.
2. Provide a graph of the network you created (experiment with the various layouts of ggraph for the most aesthetically pleasing result for you). In any case, the names of the nodes should at least be displayed. You can use the distance between two nodes to color or define the thickness of the edges that connect them.
3. Find the shortest path between "Evros" and "Messinia" and provide the corresponding graphs when:
   (a) The cost is the road distance between the capitals of the prefectures.
   (b) The cost is the number of prefectures one crosses.
4. Calculate the minimum spanning tree of the network.
5. Use some morph function of your choice.