STA 141A
Fall 2016
Homework 3

Due: November 11 (Friday) at 5:00 PM

Submit the assignment both electronically (through smartsite) and by submitting the printed copy. The electronic submission must be in the form of a zip folder (with extension .zip, .7z, etc.) containing two files: (i) graphs and descriptions; (ii) codes used.

Honor Code: *"The codes and results derived by using these codes constitute my own work. I have consulted the following resources regarding this assignment:" (ADD: names of persons or web resources, if any, excluding the instructor, TAs, and materials posted on course website)*

Description of the data 2017 US News Ranking of the University of California campuses (excluding UC San Francisco). Four columns in the data matrix correspond to:

1. Name of the UC Campus.
2. Rank (among all US universities).
3. Undergraduate enrollment.
4. Percentage of students accepted in Fall 2015.

1. Represent the information graphically on a map. Specific features are stated below.
   (i) Draw a satellite map of California, together with state boundary, and indicate the location of the universities (cities where the universities are located) on the map.
   (ii) In the same map, display the information on the relative rank (among the 9 UC campuses), student population size and acceptance rate by making use of various aesthetic features.
   (iii) Find and depict, on the same map, bicycle routes connecting every pair of campuses (cities).
2. Use a graphical representation for the same data, treating each campus as one node of the graph.
   (i) Compute driving distances between each pair of campuses (cities).
   (ii) Use the rule that if the driving distance between a pair of campuses (cities) is at most 100 miles, then they are neighbors, i.e., there is an edge connecting those nodes.
   (iii) Depict the graph thus constructed.
   (iv) Use separate colors for depicting campuses depending on whether the student enrollment is less than 20,000 or greater than that.