**MVA Midterm**

The accompanying dataset comes from this [link](https://theswiftest.com/animal-rights-index). The dataset gathers statistics from key international data sources to create this comprehensive “Animal Rights Index,” which helps identify which countries are the best and worst regarding animal rights. Animal rights laws vary greatly around the world. Animal rights activists argue that animals are sentient beings that deserve a life free from suffering. From recognition of animal sentience to fur-farming bans, many countries are taking a stand against animal cruelty in any way they can. Other considerations, such as pesticide use and meat consumption, can impact animal health and welfare. The five columns after the country names have been converted from nominal to numeric.

Please answer the questions below.

* Describe the data and its values briefly. HINT: There is one R function that does this. (10 points)
* Visualize the countries across all the dimensions in one chart so you can easily see similar countries. (10 points)
* Compute the distance between the countries across the different dimensions. (10 points)
* Carry out cluster analysis to study the relationship between countries. Explain the number of clusters you chose as optimal and why. Show visualizations to support your answers where possible. (30 points)
* Use principal components analysis to investigate the relationships between the countries based on these variables. Show visualizations to support your answers where possible. (30 points)
* Identify the important factors underlying the observed variables and examine the relationships between the countries to these factors. Show visualizations to support your answers where possible. (30 points)
* What would you name your principal components and factors? Why? (10 points)

Good Luck,   
Ronak