Assignment #4

* **Due date and time: September 28, 23:59**
* You keep losing 10% of your grade for every 24-hour delay.
* Use your name as filename, like ysk.ipynb

[Your jobs to do]

1. Use the Excel file data in A4data.xlsx, which has three variables, Country, Year, and Bbadopt. Bbadopt shows mobile broadband adoption rates of each country for four years.
2. Read the data in Python and do the jobs below.
   1. Calculate the average mobile broadband adoption rate for each country and put the average in Bbavg variable.
   2. Calculate the speed of mobile broadband adoption for four years by subtraction 2013 data from 2016 data for each country and put the speed in Bbspeed variable.
   3. Cluster all countries into groups with Bbavg and Bbspeed.
   4. Cluster again all countries and this time use 2013 mobile broadband adoption rate instead of Bbavg.
   5. Briefly explain the clustering results (in Korean). Submit your explanation with clustering figures and an ipynb file.