

1. Modify the "python aggregator.ipynb" to create your first class in Python. The requirement is on the bottom of the same file.
2. Use the "Income data.xlsx" to compute the annual growth for each individual (indinc\_net, marked in yellow background) then take logarithm transformation to both the income and growth, next step is to group them into 100 groups of equal width and make a pivot table to show the joint density (frequency on grouped(log(x)) and grouped(log(growth))). If your Excel have surface chart, use it to explore in 3d mode. If your computer does not have the surface chart, use the conditional coloring function to display in the 2D (i.e. make the cells in spreadsheet automatically colored by its value, when you make the cells smaller, it is naturally a nice chart)
3. Since the "income data.xlsx" is weighted ( fswt\_nat, also in yellow background), we have to consider it in the density function. The way to combine the weight variable into 2010-2012 (or 2014-2016) is to use vlookup function.

The question 2 and 3 needs you understand how to use functions, how to make pivot table and how to insert a chart, it also involve the use of filter and compounded logical selection condition. All these skills are of "must know" knowledge.