Coding Exercise

The dataset *STAR_Students.csv* is from the Tennessee Student Teacher Achievement Ratio (STAR) project.[1] This randomized controlled trial was implemented in Tennessee to measure the impact of having a teacher-student ratio of 20 students, 30 students, or 30 students + a teacher's aide on student achievement. The file *STAR User Guide.pdf* is a user guide for the data, including variable definitions.

Please use Stata for this exercise (e-mail jdavis5@uoregon.edu if this is not possible). **If you do not currently have access to Stata, please request a temporary license at the link that follows as soon as possible:** https://www.stata.com/customer-service/evaluate-stata/

Submit a write-up of your results (as if it was a task you were completing as an RA) and your do file. Please name the file using the convention "Lastname_Firstname_Writeup".

1. The variable *gkclasstype* indicates treatment status in kindergarten. Use this variable to generate an indicator for being in a small class in kindergarten. Set this indicator to missing if equal to "NA". How many students were in small classes in kindergarten? How many students were in a small class in kindergarten but in a large class in 3rd grade?
2. Using the treatment status variable for kindergarten, *gkclasstype*, create a table showing whether or not student characteristics are balanced across treatment groups. Use observable characteristics that were determined prior to randomization. Report whether there are any statistical differences in observable characteristics across kindergarten treatment groups.
3. How does performance on fourth grade reading (*g4treadss)* and math tests (*g4tmathss)* for those students assigned to a small class in kindergarten compare with those assigned to a regular-sized class? Do students in the smaller classes perform better?
4. The variables *g1classtype*, *g2classtype*, and *g3classtype* indicate treatment status in first, second, and third grade. How many students were in a small class in kindergarten but in a regular class in 3rd grade? Generate a variable equal to the number of years that students were in small classes. Tabulate this variable against kindergarten treatment status.
5. Does participation in more years of small classes make a greater difference in test scores? Comment on the precision of these estimates.

[1] This data is publicly available from https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/10766.