Bonus exercises for Class 5

Advanced Econometrics I

Classes: Yuri Trifonov

Fall 2022

Dear students,
In this file you can find bonus problems from Class 5 that you may try to solve at home. These tasks are NOT obligatory, but you are welcome to solve them and send the solutions to our course assistant **Evgeniya Lapteva (evlapteva@edu.hse.ru)** BEFORE the Class on 21.11. It will count as a part of your activity and give you some bonus points for your cumulative mark. You may solve all of them or part of the problems. Problems marked with a star (*) are for those who feel confident in the topic and want to challenge themselves. You do not necessarily need to solve all of the problems.

Problems:

- Problem 2* (*Note that as input for this problem only the original dataframe should be provided. All the manipulations with it should be done inside the function. For example, you cannot create matrix X in advance and make it as an input.)*
- Problem 3*

Also, note that any bonus exercises that include programming should be accomplished with detailed comments for each step in the code. For example:

```
# let's generate variable x_1 from standard normal distribution
n <- 100          # number of observations
x_1 <- rnorm(n)  # generate the variable
```

Without detailed comments, your solutions will not be counted.

NB! Please, send your solutions from your student email addresses with a letter subject `"Bonus_i_surname"`, where i is a number of a class. For example, `"Bonus_1_Ivanov"`. Otherwise, your solutions will not be received. **Your solution should include separate .R file for every problem: *pr_2.R, pr_3.R*.**

!Academic Ethics Statement!

Please, respect the norms of academic ethics of HSE. Any attempt to cheat will result in a permanent ban on bonus tasks till the end of the course. Please, respect your lecturers and colleagues who complete assignments on their own.

Yours Sincerely,

Yuri Trifonov,
Department of Applied Economics,
NRU HSE,
Email: ytrifonov@hse.ru