**Test #2**

PLEASE, READ THE INSTRUCTIONS CAREFULLY!

Task 1

*test\_2.RData* contains data frame *‘culture’* which includes the following variables:

* c.act.n – number of cultural activities that the respondents participated in the last 12 months
* gender – gender of the respondent
* age – age in years
* edu – age when completed education
* bill – if the respondent has difficulties paying bills
* commun – area of residence
* country – country where the respondent lives

1. Choose only observations from **Bulgaria**.
2. Choose an appropriate model to predict the number of cultural activities by gender, age, education, problems paying bills, and area of residence.
3. Interpret the coefficients, comment on the results.
4. Check model fit, comment on the results.

Task 2

*test\_2.RData* contains data frame *‘ess’* which includes the following variables:

* *atcherp* – And how emotionally attached do you feel to Europe: 1- Not at all emotionally attached, 11 – Very emotionally attached
* *age* – age of the respondent in years
* *incdcl* – income decile: 1 - the lowest decile, 10 – the highest
* *gndr* – gender of the respondent: male, female
* *cntry* – country
* *gdp* – GDP per capita

1. Specify the empty model of the attachment to Europe varying by country. Calculate ICC. Do the views vary considerably across the countries?

2. Include individual level predictors into your model. Interpret the coefficients.

3. Randomize the coefficient for income. Do the coefficients vary across the countries? Consider variable transformations if necessary.

4. Include GDP per capita into the model. Consider transformation of this variable. Interpret the result.

5. Check if the effect of income differs depending on the country economic development.

6. Visualize the effects in the final model. Interpret the results.

7. Check if the model fits the data well.