Following our in-class discussion, please download the data owid-energy-data.csv from the provided website https://github.com/owid/energy-data?tab=readme-ov-file.

For this homework, you will focus on the "energy\_per\_capita" column. Please merge this column with the World Bank data using the ISO code (instead of the country name) for accuracy. We will use "energy\_per\_capita" in place of the World Bank's "Energy Use" variable.

Once the data is cleaned and prepared, as we discussed in class, proceed with the linear regression analysis.

Perform the regression using all continuous variables in the dataset, with CO2 emissions as the dependent variable. Don't forget to log-transform any skewed variables, as per our previous discussion.

Ensure that all relevant diagnostic plots are included.

Incorporate country indicators into the model and assess whether this improves the model's performance.

Next, add a linear trend for Year. Does this improve the model fit?

Finally, instead of linear trend in Year , include year indicators and evaluate whether they enhance the model.

Use AIC and BIC criteria to assess the model fit as well as all relevant diagnostic plots, as we discussed in class.