Lab # 2

NOTE. For this lab you need subsample with 5-10 random variables, at least half of them should be described with continuous random variable type. Target variable should be continuous.

Step 1. You need to make a non-parametric estimation of PDF in form of histogram and using kernel density function for MRV (or probability law in case of discrete MRV) .

Step 2. You need to make an estimation of multivariate mathematical expectation and variance.

Step 3. You need to make a non-parametric estimation of conditional distributions, mathematical expectations and variances.

Step 4. You need to make an estimation of pair correlation coefficients, confidence intervals for them and significance levels.

Step 5. Choose a task formulation for regression. Estimate multivariate correlation (target - predictors).

Step 6. Build regression model and make an analysis of multicollinearity and regularization (if needed).

Step 7. Analyze the quality of regression model (distribution of residuals, determination coefficient).