Brief

Task 1

Consider a relational dataset and specify your input and output variables , then:

(a) Train the model using 80% of this dataset and suggest an appropriate GLM to model **ouput** to **input** variables.

(b) Specify the significant variables on the **output** variable at the level of α=0.05 and explore the related hypotheses test. Estimate the parameters of your model.

(c) Predict the output of the test dataset using the trained model. Provide the functional form of the optimal predictive model.

(d) Provide the confusion matrix and obtain the probability of correctness of predictions.

Task 2

Using Yahoo Finance API, select a specific stock market price, apply time series analysis, consider 'close price as your time series variable:

(a) Validate the assumptions of your model.

(b) Fit the optimized model for 'close price' and provide the coefficient estimates for the fitted model.

(c) What is the estimated order for AR and MA?

(d) Evaluate the proposed model using an appropriate metric.

(e) Forecast h=10 step ahead prediction of wage on the plot of the original time series.