CSCI 335 Section 3
Homework 2

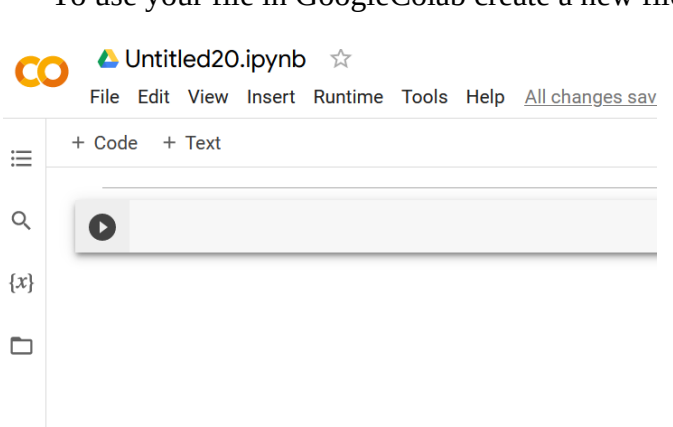
Programming Assignment (16 points)
Predict the `median_house_value`. The file `houses.csv` contains
Information about houses in Californian districts. Write a Python program (in jupyter notebook) that does the following:

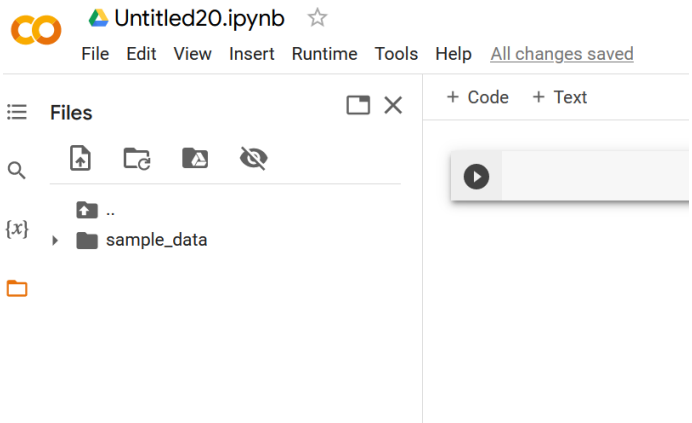
- (1 point) Load the dataset.
- (2 point) Asses the data and clean them.
- (1 point) Create features X and targets y.
- (1 point) Divide the dataset into training, validation, and testing sets: (X_train, y_train), (X_val, y_val), and (X_test, y_test)
- (1 point) Create a transformation (ColumnTransformer) that applies OneHotEncoder to the nominal column only (`remainder='passthrough'`). Fit it with X_train and print the first five lines of the transformed X_train.
- (3 points) Train `KNeighborsRegressor` on the transformed X_train and select the value of *k* on the transformed X_val. Choose a metric that you think evaluates this problem the best. Please, state why you chose it.
- (1 point) Report the results using X_test and an appropriate metric.
- (1 point) Modify the transformation applying a scaler to all numerical columns
- (3 point) Repeat the training with the scaled data.
- (2 point) Discuss the results. I would suggest plotting histograms of the errors for both cases. If the results are different, can you think of the reason?

Writing Assignment (4 points) Use Markdown/Text cell in your jupyter notebook

- (2 point) What is the difference between supervised and unsupervised problems?
- (2 point) What is the purpose of splitting data into training, validation, and testing sets? What is a typical split-up?

To use your file in GoogleColab create a new file





Click on the folder sign Drag your file in the area under the folders or click Upload
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