Lab assignment 1 - Multivariate linear regression

- Implement multivariate linear regression in Python to predict house price based on size and number of bedrooms. Based on collected data, build the algorithm to learn a model for predicting house price.
- Each sample consists of area, number of bedrooms and price.
- Complete the #TODO list in the attached notebook. The notebook's structure consist of 3 main parts:
- Part 1: Read and Analyze data:
    - Read and do basic analyze on the data.
    - Students need to make comments on the data based on tables and graphs.
- Part 2: Helper Functions:
    - Build necessary functions and class to prepare for model training and predict.
    - Students need to complete the missing code in following functions:
        - standardize_train_set function: standardize the features of train set based on their mean and standard deviation.
        - standardize_test_set function: standardize the features of test set based on their mean and standard deviation in train set.
        - LinearRegression class: used to build a linear regression model.
            - calculate_absolute_error function: calculate absolute error of model on training set in training progress.
            - gradient function: calculate gradient
            - gradient_descent function: calculate gradient descent
            - predict function: predict for new input
- Part 3: Main Function:
    - Training model on training set, predict new value with new input, save model and result in a file.
    - Students need to complete the missing code and make comments on the model based on the graph.
- Data: training data set and config file are attached.
- In addition, students need to explain the values of the variables in JSON files in a .docx file (name it "explanation_for_variables.docx").
- Note for submission:
    - Place source code and related files in a folder namely **MSSV**

- Compress the folder to **MSSV.zip**
- Submit the zip file via Moddle