25 Jan 2022, Wednesday

Machine Learning Lab
Assignment 2 a
Simple Linear Regression

Objective: Predict the price of houses using Simple Linear Regression
Dataset: Housing Price Data

1. Import the libraries:
    a. "**Pandas**" and/or "**NumPy**" for the dataset management,
    b. "**matplotlib**" or "**seaborn**" for the plots, and
    c. "**sklearn**" for the Linear Regression algorithm.
        i. "**LinearRegression**" for the algorithm itself
        ii. "**MinMaxScaler**" for data normalization
        iii. "**train_test_split**" for the training set and test set to split
        iv. "**r2_score**" for the evaluation
    d. "**numpy**"
        i. "**corrcoef**" for Pearson's correlation coefficient
2. Read the input data.
3. Understand your data by observing the **correlation** between the feature and the target variable.
4. **Scale** the data using MinMaxScaler.
5. Divide the dataset into a **training set** and a **test set**. Use the "train_test_split" method of the sklearn library to create the training set and the test set (70:30).
6. Create the linear regression model with the training set.
7. Make predictions using the test set.
8. Find the coefficient and slope of the fitted regression line.
9. Find the accuracy of the model, and use the most popular metric for linear regression called "**R-squared**".
10. Compare the actual and predicted values by plotting a scatter graph.