Machine learning using python

### By using pandas we import the csv files.

Import pandas as pd

Data=pd.read\_csv(“data.csv”)

### File should be in same folder where .py file running.

### To show up Null values in the table and drop.

data[data.isnull().any(axis=1)]

data=data.dropna()

### data.loc

1. Selecting Rows and Columns:
   * **df.loc[row\_label]**: Selects a specific row based on the row label.

Data.loc[7]

* + **df.loc[row\_label, column\_label]**: Selects a specific cell based on the row and column labels.
  + **df.loc[row\_label, column\_label\_list]**: Selects specific columns for a given row label.

**Data**.loc[30:60]

* + **df.loc[row\_label\_list, column\_label\_list]**: Selects specific rows and columns based on the given row and column labels.

1. Conditional Selection:
   * **df.loc[df['column'] > value]**: Selects rows based on a condition applied to a specific column.
   * **df.loc[(df['column1'] > value1) & (df['column2'] == value2)]**: Selects rows based on multiple conditions.
2. Slicing:
   * **df.loc[start\_row\_label:end\_row\_label]**: Selects a range of rows based on the row labels.
   * **df.loc[start\_row\_label:end\_row\_label, start\_column\_label:end\_column\_label]**: Selects a range of rows and columns based on the labels.
3. Assigning Values:
   * **df.loc[row\_label, column\_label] = value**: Assigns a value to a specific cell based on the row and column labels.
   * **df.loc[row\_label, column\_label\_list] = [value1, value2, ...]**: Assigns values to specific columns for a given row label.

Machine Learning Models:

Linear Regression:

Linear regression is a widely used supervised machine learning algorithm that models the relationship between a dependent variable and one or more independent variables by fitting a linear equation to observed data. It is a form of regression analysis, which aims to predict continuous numeric values.

In linear regression, the goal is to find the best-fitting line or hyperplane that minimizes the difference between the predicted and actual values. The equation of a simple linear regression model can be represented as:

y = mx + b

Where:

* y is the dependent variable (the variable to be predicted)
* x is the independent variable (the variable used to make predictions)
* m is the slope or coefficient of the independent variable
* b is the y-intercept (the value of y when x is 0)