Assi - 4 Data Analytics - I

CSV file / Dataset - Boston dataset.

Required libraries:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.datasets import load_boston
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error,
                            mean_absolute_error
from sklearn.preprocessing import StandardScaler
import warnings.
```

Functions Used -

```
boston = load_boston()
df.head()
df.shape
df.info()
df.describe()
df.isnull().sum()
plt.figure()
sns.heatmap( )
plt.show()
sns.pairplot()
scalar = StandardScaler()
model = LinearRegression()
sns.regplot()
```

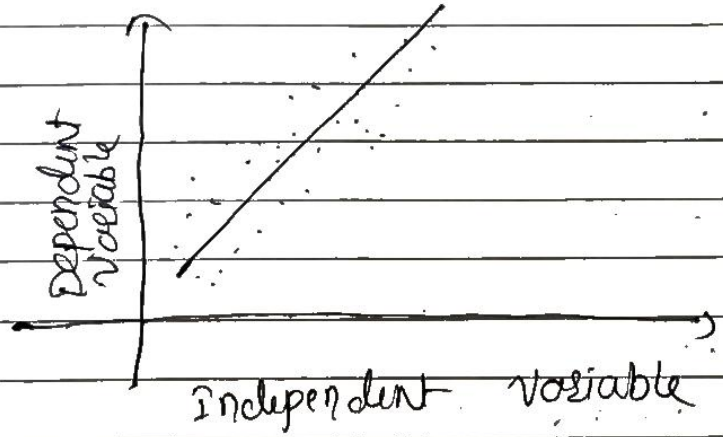
Oral Questions with Answers.

① What is mean by Regression?
→ Relationship between dependent & independent variable is called as Regression.

② Explain linear Regression.
→ - Linear Regression is a type of statistical analysis used to predict the relationship between two variables.
- It assumes a linear relationship between the independent variable & the dependent variable.
- Aims is to find the best-fitting line that describe the relationship.

③ Explain multiple linear Regression.
→ multiple independent variables available.

④ Explain simple linear Regression.
→ In that one independent variable & one dependent variable.



linear Regression - Represent by straight line

(5) Explain Logistic Regression.
→ - linear regression is unbounded, so logistic regression come in picture.
- Logistic regression value steidly ranges from 0 to 1.
- Logistic variable regression is used when the dependent variable is categorical.

(6) Explain boston Housing Dataset.
→ (1) How many feature in dataset (column).
(2) How many rows or records in dataset.
(3) How to add column in dataset.

(7) Applications for logistic regression
→ Healthcare
Demand forecasting
sports outcomes
Fitness

(8) Applications of logistic regression
→ (1) Finance (2) Sports
(3) Maintanance (4) Classification or categorization.

(9) Explain polynomial regression.
→ In linear regression equation power of the independent variable was 1., in polynomial regression the power of independent variable is greater than 1.