

## **EXPERIMENT – 12**

Implement Iris Flower Classification using KNN

### **CODE :**

```
# Car Price Prediction using Linear Regression

import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_absolute_error, mean_squared_error, r2_score

# Sample dataset
data = {
    "Year": [2015, 2018, 2016, 2020, 2014, 2019, 2017, 2021],
    "Mileage": [60000, 30000, 50000, 20000, 80000, 25000, 45000, 15000],
    "Engine_CC": [1200, 1500, 1300, 1800, 1100, 1600, 1400, 2000],
    "Price": [500000, 800000, 600000, 1200000, 400000, 900000, 650000, 1400000]
}

df = pd.DataFrame(data)

# Features and target
X = df[["Year", "Mileage", "Engine_CC"]]
y = df["Price"]

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.25, random_state=42
)

# Model
```

```

model = LinearRegression()
model.fit(X_train, y_train)

# Prediction
y_pred = model.predict(X_test)

# Output
print("MAE:", mean_absolute_error(y_test, y_pred))
print("MSE:", mean_squared_error(y_test, y_pred))
print("R2 Score:", r2_score(y_test, y_pred))

# Predict price of a new car
new_car = pd.DataFrame(
    [[2022, 10000, 1800]],
    columns=["Year", "Mileage", "Engine_CC"]
)
predicted_price = model.predict(new_car)
print("Predicted Car Price:", int(predicted_price[0]))

```

#### OUTPUT :

```

IDLE Shell 3.13.2
File Edit Shell Debug Options Window Help
Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb 4 2025, 15:23:48) [MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> === RESTART: C:/Users/lalit/AppData/Local/Programs/Python/Python313/exp-13.py ==
MAE: 7860.824742272496
MSE: 64599054.09721261
R2 Score: 0.9741603783611149
Predicted Car Price: 1011340
>>>

```