

Model Creation:

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import RandomForestRegressor
from pickle import dump

data = pd.read_csv("laptop.csv")
print(data.shape)
print(data.isnull().sum())

data["price"] = data["price"].str.replace(",", "")

features = data.drop(["Timestamp", "price"], axis=1)
target = data["price"]

print(features)
print(target)

nfeatures = pd.get_dummies(features)
print(features)
print(nfeatures)

nfeatures.to_csv("features.csv")

x_train, x_test, y_train, y_test = train_test_split(nfeatures.values, target)

model1 = LinearRegression()
model1.fit(x_train, y_train)
score1 = model1.score(x_test, y_test)
print("Linear Regression -> score = ", round(score1 * 100, 2), "%" )

model2 = DecisionTreeRegressor()
model2.fit(x_train, y_train)
score2 = model2.score(x_test, y_test)
print("Decision Tree Regressor -> score = ", round(score2 * 100, 2), "%" )

model3 = RandomForestRegressor()
model3.fit(x_train, y_train)
score3 = model3.score(x_test, y_test)
print("Random Forest Regressor -> score = ", round(score3 * 100, 2), "%" )

with open("laptop_model.pkl", "wb") as f:
    dump(model3, f)
```


Model Use

```
from pickle import load

with open("laptop_model.pkl", "rb") as f:
    model = load(f)

r = int(input(" RAM --> 1 for 8GB , 2 for 12GB and 3 for 16GB "))
if r == 1:
    d1 = [8]
elif r == 2:
    d1 = [12]
else:
    d1 = [16]

d = int(input(' DISPLAY --> 1 for 14" and 2 for 15.6" '))
if d == 1:
    d2 = [14]
else:
    d2 = [15.6]

p = int(input(" PROCESSOR --> 1 for i3, 2 for i5, 3 for i7 and 4 for i9 "))
if p == 1:
    d3 = [1, 0, 0, 0]
elif p == 2:
    d3 = [0, 1, 0, 0]
elif p == 3:
    d3 = [0, 0, 1, 0]
else:
    d3 = [0, 0, 0, 1]

s = int(input(" SSD --> 1 for 1TB and 2 for 512GB "))
if s == 1:
    d4 = [1, 0]
else:
    d4 = [0, 1]

b = int(input(" BRAND --> 1 for acer, 2 for asus, 3 for dell, 4 for hp and 5 for lenovo "))
if b == 1:
    d5 = [1, 0, 0, 0, 0]
elif b == 2:
    d5 = [0, 1, 0, 0, 0]
elif b == 3:
    d5 = [0, 0, 1, 0, 0]
elif b == 4:
    d5 = [0, 0, 0, 1, 0]
else:
    d5 = [0, 0, 0, 0, 1]
```



```
g = int(input("GPU --> 1 for na, 2 for rtx3040 and 3 for rtx3060 "))
if g == 1:
    d6 = [1, 0, 0]
elif g == 2:
    d6 = [0, 1, 0]
else:
    d6 = [0, 0, 1]

d = [d1 + d2 + d3 + d4 + d5 + d6]
price = model.predict(d)
print(price)
```

Task 3 by Kamal Sir - 8369084928