

## Q1)

```
import pandas as pd

from sklearn.model_selection import train_test_split

from sklearn.tree import DecisionTreeRegressor

from sklearn.svm import SVR

from sklearn.neighbors import KNeighborsRegressor

from sklearn.metrics import r2_score

from sklearn.preprocessing import StandardScaler

data = pd.read_csv('petrol_consumption.csv')

data

X = data.drop('Petrol_Consumption', axis=1)

y = data['Petrol_Consumption']

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2)

scaler = StandardScaler()

X_train = scaler.fit_transform(X_train)

X_test = scaler.transform(X_test)

dt_model = DecisionTreeRegressor(random_state=42)

dt_model.fit(X_train, y_train)

y_pred_dt = dt_model.predict(X_test)
```

```
print("prediction is:" ,y_pred_dt)

svm_model = SVR(kernel='rbf')
svm_model.fit(X_train, y_train)
y_pred_svm = svm_model.predict(X_test)
print("prediction is:" ,y_pred_svm)

knn_model = KNeighborsRegressor(n_neighbors=5)
knn_model.fit(X_train, y_train)
y_pred_knn = knn_model.predict(X_test)
print("prediction is:" ,y_pred_knn)

print("Decision Tree R2:", r2_score(y_test, y_pred_dt))
print("SVM R2:", r2_score(y_test, y_pred_svm))
print("KNN R2:", r2_score(y_test, y_pred_knn))
```

## Q2)

```
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
import pandas as pd

df = pd.read_csv("kc_house_data.csv")
df
```

```
features = ['bedrooms', 'bathrooms', 'sqft_living', 'sqft_lot']
```

```
target = 'price'
```

```
X= df[features]
```

```
y= df[target]
```

```
X_train, X_test, y_train, y_test = train_test_split(X,y, test_size=0.2)
```

```
model = LinearRegression()
```

```
model.fit(X_train, y_train)
```

```
y_pred = model.predict(X_test)
```

```
y_pred
```

```
score = model.score(X_test, y_test)
```

```
print("Model R^2 Score:", score)
```