

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)
```