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```
from sklearn.neighbors import KNeighborsRegressor
from sklearn.svm import SVR
from sklearn.tree import DecisionTreeRegressor
from sklearn.metrics import r2_score,mean_absolute_error,mean_squared_error
Knn=KNeighborsRegressor()
svr=SVR()
dt=DecisionTreeRegressor()
for i in [Knn,svr,dt]:
  i.fit(x_train,y_train)
  y_pred=i.predict(x_test)
  test_score=r2_score(y_test,y_pred)
  train_score=r2_score(y_train,i.predict(x_train))
  if abs(train_score-test_score)<=0.1:
     print(i)
     print("R2 score is",r2_score(y_test,y_pred))
     print("R2 for train data",r2_score(y_train,i.predit(x_train)))
     print("Mean Absolute Error is",mean_absolute_error(y_test,y_pred))
     print("Mean Squared Error is",mean_squared_error(y_test,y_pred))
     print("Root Mean Squared Error is",(mean_squared_error(y_test,y_pred,squared=False)))
```

```
[ ] from sklearn.model_selection import cross_val_score
    for i in range(2,5):
        cv=cross_val_score(rfr,x,y,CV=i)
```

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```
from sklearn.model_selection import cross_val_score
for i in range(2,5):
    cv=cross_val_score(rfr,x,y,CV=i)
    print(rfr,cv.mean())
```

[79]
```
from sklearn.model_selection import RandomizedSearchCV
```

```
param_grid={'n_estimators':[10,30,5070,100],'max_depth':[None,1,2,3],'max_features':['auto','sqrt']}
rfr=RandomForestRegressor()
rf_res=RandomizedSearchCV(estimator=rfr,param_distributions=param_grid,cv=3,verbose=2,n_jobs=-1)
rf_res.fit(x_train)
```

```
gb=GradientBoostingRegressor()
gb_res=RandomizedSearchCV(estimator=gb,param_distributions=param_grid,cv=33,verbose=2,n_jobs=-1,)
```

```
gb_res.fit(x_train,y_train)
```

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```
rfr=RandomForestRegressor(n_estimators=10,max_features='sqrt',max_depth=None)
rfr.fit(x_train,y_train)
y_train_pred=rfr.predict(x_train)
y_test_pred=rfr.predict(x_test)
print("train accuracy",r2_score(y_train_pred,y_train))
print("test accuracy",r2_score(y_test_pred,y_test))
```

```
Knn=KNeigborsRegressor(n_neighbors=2,algorithm='auto',metric_params=None,n_jobs=-1)
Knn.fit(x_train,y_train)
y_train_pred=Knn.predict(x_train)
y_test_pred=Knn.predict(x_test)
print("train accuracy",r2_score(y_train_pred,y_train))
print("test accuracy",r2_score(y_test_pred,y_test))
```

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```
rfr=RandomForestRegressor(n_estimators=10,max_features='sqrt',max_depth=None)
rfr.fit(x_train,y_train)
y_train_pred=rfr.predict(x_train)
y_test_pred=rfr.predict(x_test)
print("train accuracy",r2_score(y_train_pred,y_train))
print("test accuracy",r2_score(y_test_pred,y_test))
```

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```
[84] Price_list=pd.DataFrame({'Price':Prices})
```

```
[85] Price_list
```

```
[ ] import pickle
    pickle.dump(rfr,open('model1.pk1','wb'))
```

```
import pickle
pickle.dump(rfr,open('model1.pk1','wb'))
```

```
[87] from flask import Flask,render_template,request
     import numpy as np
     import pickle
```

```
model=Pickle.load(open(r"model1.pkl",'rb'))
```

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