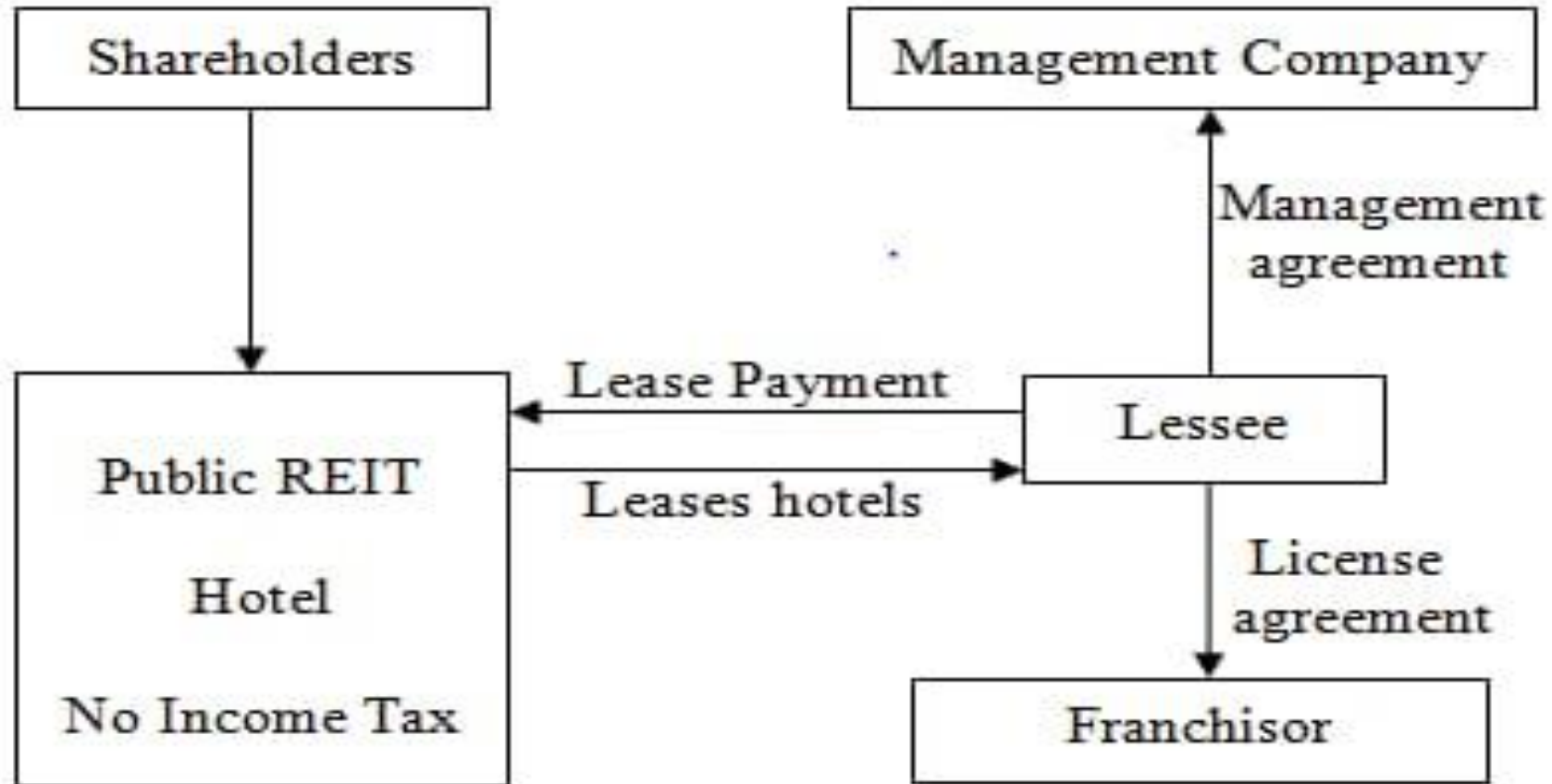


Neighbourhood Classification for Real Estate Investment.

Flow Chart



Architecture Diagram



Program Code

The screenshot shows a Google Colab notebook interface. The browser tabs at the top include 'neighborhood classification for', '(1) WhatsApp', 'TimeSeries/real-estate-dataset', 'Welcome To Colaboratory - Col', and 'Real Estate.ipynb - Colaborator'. The address bar shows the URL: https://colab.research.google.com/drive/1axxwe9rkafrl-RYVwCtM_WNhBOYAPApV?pli=1&authuser=2#scrollTo=e9okW2wfZXPd. The notebook title is 'Real Estate.ipynb' with a star icon. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Runtime', 'Tools', 'Help', and 'All changes saved'. On the right, there are icons for 'Comment', 'Share', settings, and a user profile. The left sidebar has icons for a menu, search, variables, and files. The main area shows two code cells. The first cell, labeled '[1]' with a 2s execution time, contains the following code:

```
[1] import pandas as pd
import numpy as np
from sklearn.ensemble import RandomForestRegressor
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
```

The second cell, labeled '[2]' with a 0s execution time, contains:

```
[2] df=pd.read_csv("/content/data.csv")
```

Below the code cells, the variable 'df' is displayed as a DataFrame. It has 15 columns: CRIM, ZN, INDUS, CHAS, NOX, RM, AGE, DIS, RAD, TAX, PTRATIO, B, LSTAT, and MEDV. The data is shown in a table with 509 rows (indices 0 to 509). The status bar at the bottom indicates '0s completed at 12:56 PM'.

Real Estate.ipynb ☆

File Edit View Insert Runtime Tools Help All changes saved

+ Code + Text

RAM Disk

[1] 2s

```
import pandas as pd
import numpy as np
from sklearn.ensemble import RandomForestRegressor
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
```

[2] 0s

```
df=pd.read_csv("/content/data.csv")
```

0s df

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO	B	LSTAT	MEDV
0	0.00632	18.0	2.31	0	0.538	6.575	65.2	4.0900	1	296	15.3	396.90	4.98	24.0
1	0.02731	0.0	7.07	0	0.469	6.421	78.9	4.9671	2	242	17.8	396.90	9.14	21.6
2	0.02729	0.0	7.07	0	0.469	7.185	61.1	4.9671	2	242	17.8	392.83	4.03	34.7
3	0.03237	0.0	2.18	0	0.458	6.998	45.8	6.0622	3	222	18.7	394.63	2.94	33.4
4	0.06905	0.0	2.18	0	0.458	7.147	54.2	6.0622	3	222	18.7	396.90	5.33	36.2
...
506	0.98765	0.0	12.50	0	0.561	6.980	89.0	2.0980	3	320	23.0	396.00	12.00	12.0
507	0.23456	0.0	12.50	0	0.561	6.980	76.0	2.6540	3	320	23.0	343.00	25.00	32.0
508	0.44433	0.0	12.50	0	0.561	6.123	98.0	2.9870	3	320	23.0	343.00	21.00	54.0
509	0.77763	0.0	12.70	0	0.561	6.222	34.0	2.5430	3	329	23.0	343.00	76.00	67.0

0s completed at 12:56 PM

neighborhood classification for (1) WhatsApp TimeSeries/real-estate-dataset: Welcome To Colaboratory - Col Real Estate.ipynb - Colaboratory

https://colab.research.google.com/drive/1axxwe9rkafrl-RYVwCtM_WNhBOYAPApV?pli=1&authuser=2#scrollTo=e9okW2wfZXPd

Real Estate.ipynb

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0s [3]

509 0.77763 0.0 12.70 0 0.561 6.222 34.0 2.5430 3 329 23.0 343.00 76.00 67.0

510 0.65432 0.0 12.80 0 0.561 6.760 67.0 2.9870 3 345 23.0 321.00 45.00 24.0

511 rows x 14 columns

0s df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 511 entries, 0 to 510
Data columns (total 14 columns):
Column Non-Null Count Dtype

0 CRIM 511 non-null float64
1 ZN 511 non-null float64
2 INDUS 511 non-null float64
3 CHAS 511 non-null int64
4 NOX 511 non-null float64
5 RM 506 non-null float64
6 AGE 511 non-null float64
7 DIS 511 non-null float64
8 RAD 511 non-null int64
9 TAX 511 non-null int64
10 PTRATIO 511 non-null float64
11 B 511 non-null float64
12 LSTAT 511 non-null float64
13 MEDV 511 non-null float64
dtypes: float64(11), int64(3)
memory usage: 56.0 KB

0s [5] df.describe()

0s completed at 12:56 PM

neighborhood classification for ×(1) WhatsApp ×TimeSeries/real-estate-dataset: ×Welcome To Colaboratory - Col ×Real Estate.ipynb - Colaboratory ×

←→↻https://colab.research.google.com/drive/1axxwe9rkafrI-RYVwCtM_WNhBOYAPaV?pli=1&authuser=2#scrollTo=e9okW2wfZXPd

Real Estate.ipynb ☆

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RAM 100%Disk 100%

0s [5] df.describe()

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO	B	LSTAT	MEDV
count	511.000000	511.000000	511.000000	511.000000	511.000000	506.000000	511.000000	511.000000	511.000000	511.000000	511.000000	511.000000	511.000000	511.000000
mean	3.584139	11.252446	11.151096	0.068493	0.554757	6.287589	68.616243	3.783876	9.485323	407.440313	18.500000	356.600900	12.879550	22.682192
std	8.564433	23.234838	6.828175	0.252838	0.115310	0.703802	28.099130	2.098631	8.688469	167.903532	2.200348	90.882679	7.797416	9.484262
min	0.006320	0.000000	0.460000	0.000000	0.385000	3.561000	2.900000	1.129600	1.000000	187.000000	12.600000	0.320000	1.730000	5.000000
25%	0.082325	0.000000	5.190000	0.000000	0.449000	5.885500	45.050000	2.100350	4.000000	279.500000	17.400000	374.710000	7.065000	17.050000
50%	0.261690	0.000000	9.690000	0.000000	0.538000	6.209000	77.300000	3.152300	5.000000	330.000000	19.100000	391.340000	11.450000	21.200000
75%	3.621175	12.500000	18.100000	0.000000	0.624000	6.629750	94.050000	5.118000	24.000000	666.000000	20.200000	396.210000	17.105000	25.000000
max	88.976200	100.000000	27.740000	1.000000	0.871000	8.780000	100.000000	12.126500	24.000000	711.000000	23.000000	396.900000	76.000000	67.000000

0s [8] df['RM']=df['RM'].fillna(df['RM'].mean())

0s df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 511 entries, 0 to 510
Data columns (total 14 columns):
Column Non-Null Count Dtype

0 CRIM 511 non-null float64
1 ZN 511 non-null float64
2 INDUS 511 non-null float64
3 CHAS 511 non-null int64

0s completed at 12:56 PM

neighborhood classification for X

(1) WhatsApp

TimeSeries/real-estate-dataset

Welcome To Colaboratory - Col

Real Estate.ipynb - Colaboratory

← → ↺ https://colab.research.google.com/drive/1axxwe9rkafri-RYVwCtM_WNhBOYAPaV?pli=1&authuser=2#scrollTo=e9okW2wfZXPd

Real Estate.ipynb ☆

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0s

```
print("Total Number of Missing Value",df.isna().sum())
```

Total Number of Missing Value	CRIM	0
ZN		0
INDUS		0
CHAS		0
NOX		0
RM		0
AGE		0
DIS		0
RAD		0
TAX		0
PTRATIO		0
B		0
LSTAT		0
MEDV		0
		dtype: int64

0s

```
y=df['MEDV'].copy()
x=df.drop('MEDV',axis=1)
```

0s

```
[13] x_train,x_test,y_train,y_test=train_test_split(x,y,train_size=0.7)
```

0s

```
[14] scaler=StandardScaler()
scaler.fit(x_train)
x_train=pd.DataFrame(scaler.transform(x_train),columns=x_train.columns)
x_test=pd.DataFrame(scaler.transform(x_test),columns=x_test.columns)
```

0s

```
[15] print(x_train.shape)
print(x_test.shape)
```

0s

completed at 12:56 PM

Real Estate.ipynb

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[15]

```
print(x_train.shape)
print(x_test.shape)
print(y_train.shape)
print(y_test.shape)
```

```
(357, 13)
(154, 13)
(357,)
(154,)
```

1s

```
model=RandomForestRegressor()
model.fit(x_train,y_train)
print(model.score(x_test,y_test))
```

```
0.8573633024153
```

```
[ ]
```

<>

completed at 12:56 PM

Snipping Tool

Screenshot copied to clipboard and saved
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