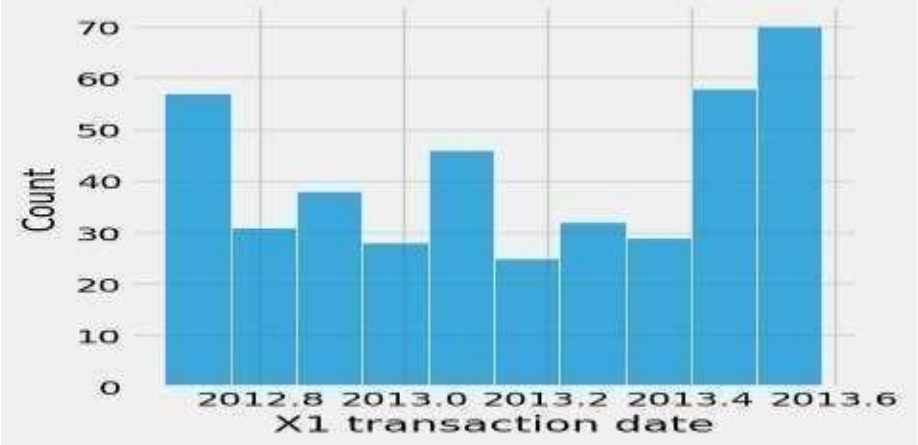
Data Collection and Preprocessing Phase

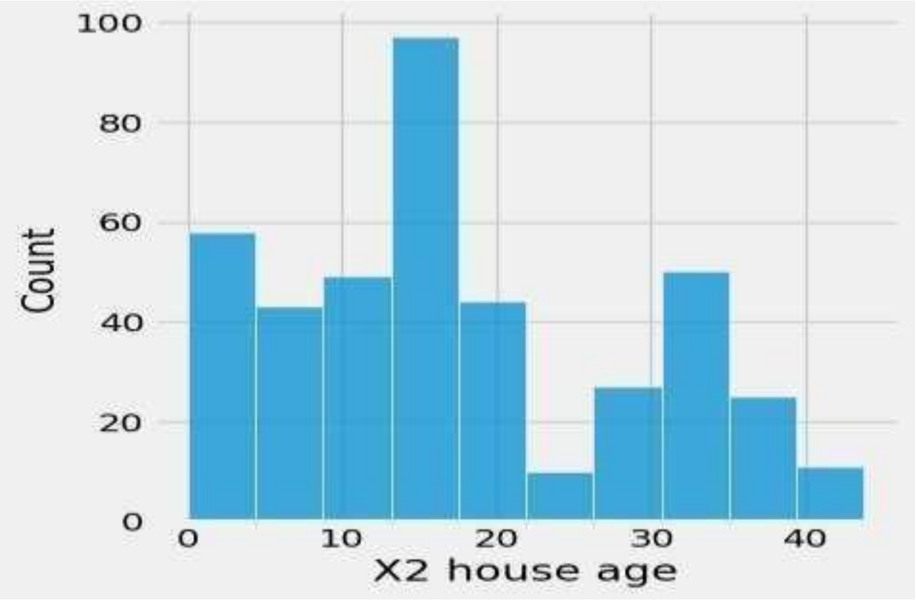
Date	8 July 2024
Team ID	740109
Project Title	Identification Of Methodology Used In Real Estate Property Valuation
Maximum Marks	6 Marks

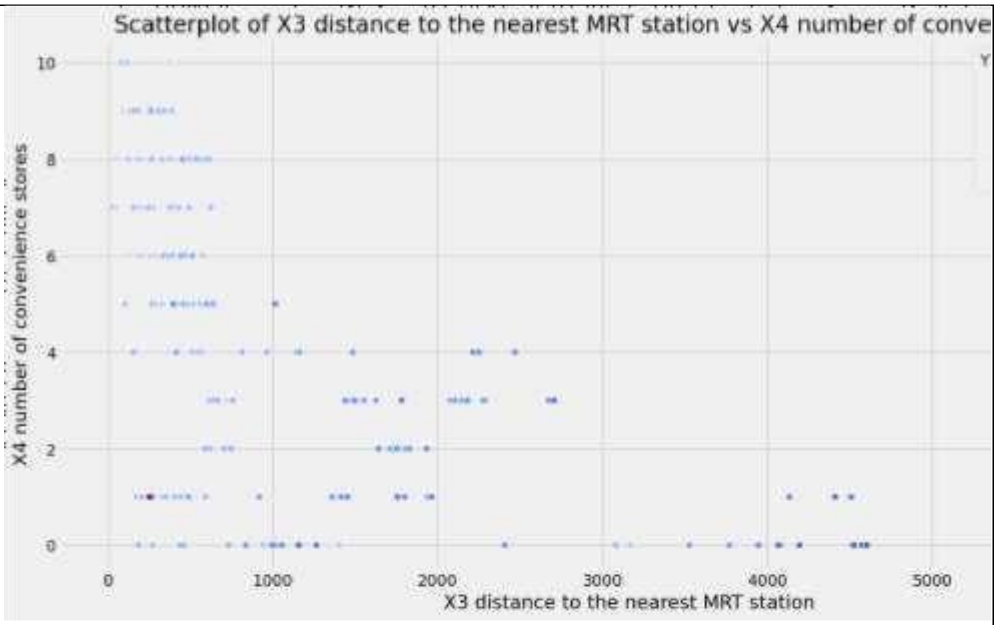
Data Exploration and Preprocessing Template

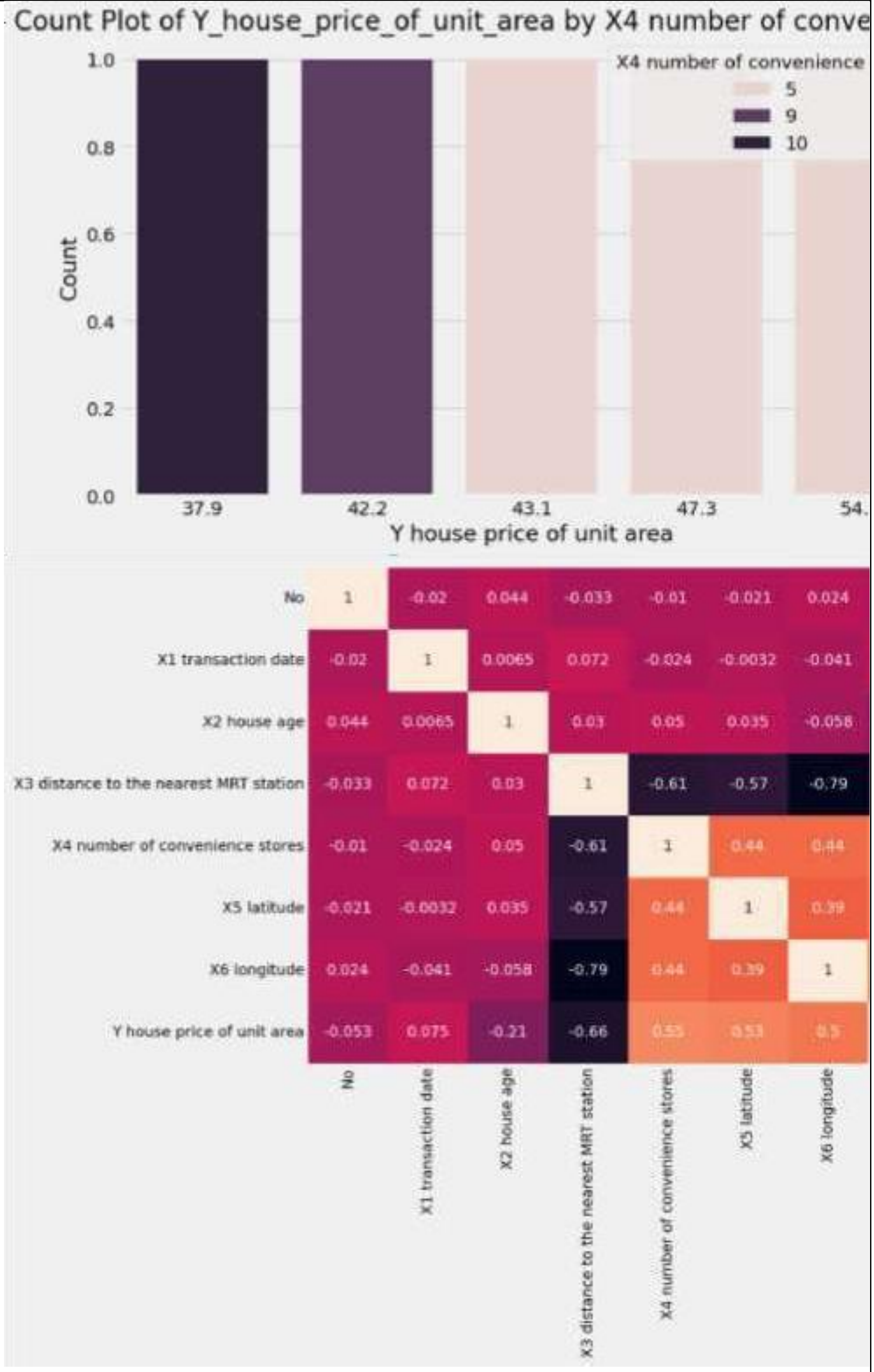
Identifies data sources, assesses quality issues like missing values and duplicates, and implements resolution plans to ensure accurate and reliable analysis.

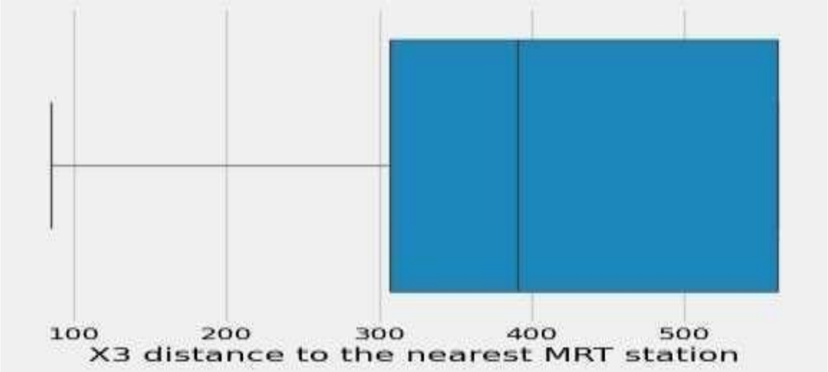
Section	**Description**
Data Overview	Dimension: 331rowsx 8columns Descriptive statistics:

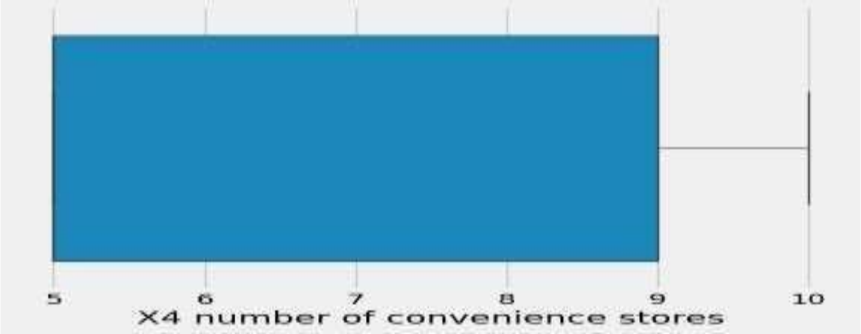
Univariate Analysis	

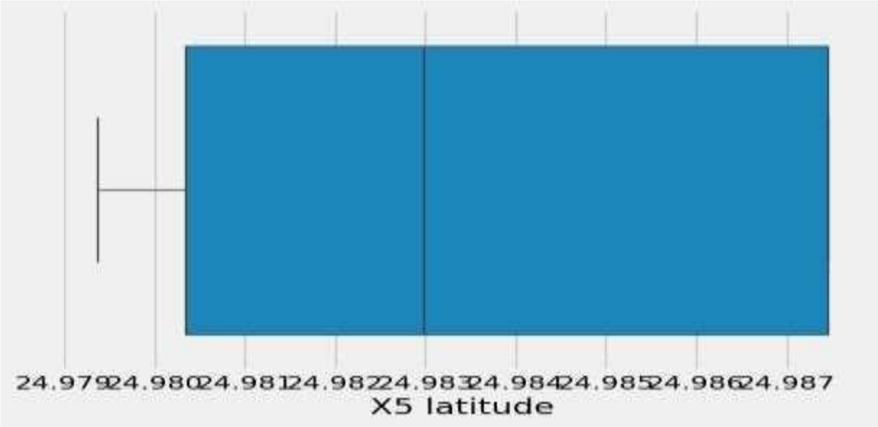
	

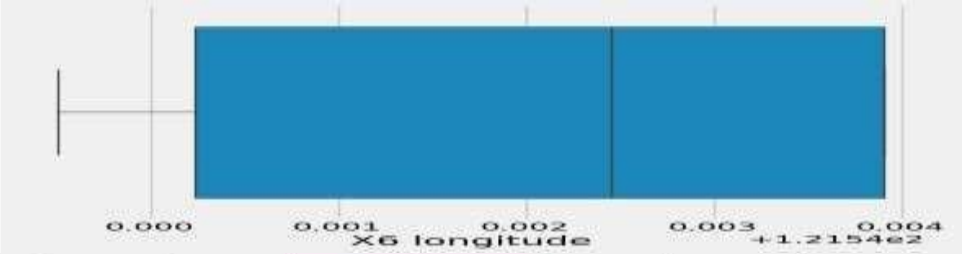
Bivariate Analysis	

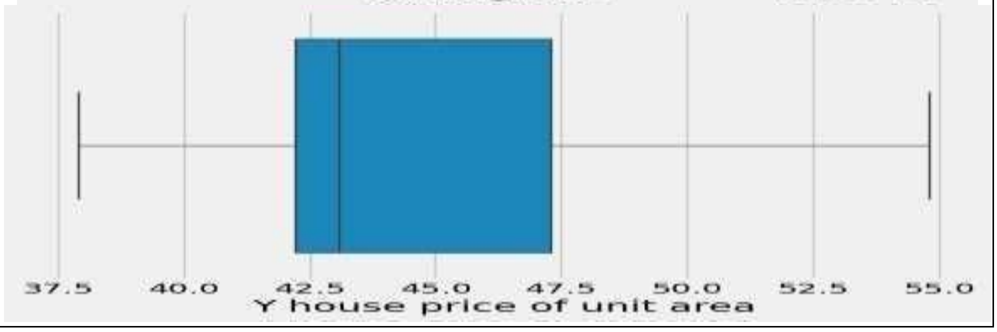
Multivariate Analysis	

<table>
<tr>
<td>Handled Outliers and Anomalies</td>
<td>




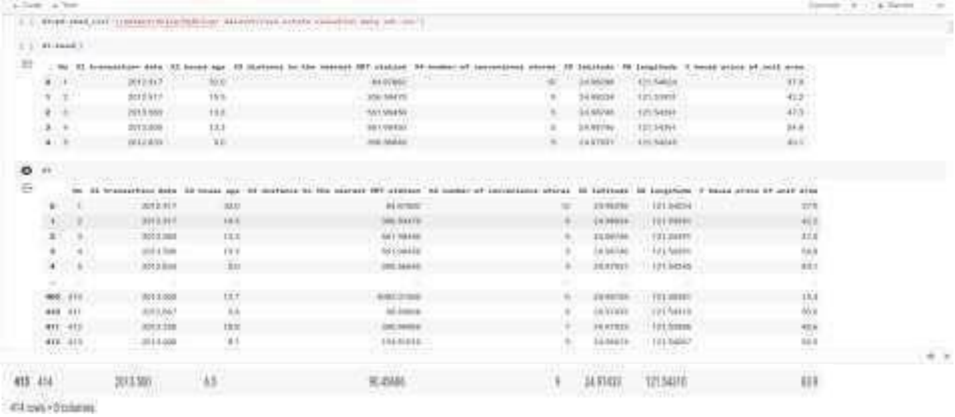






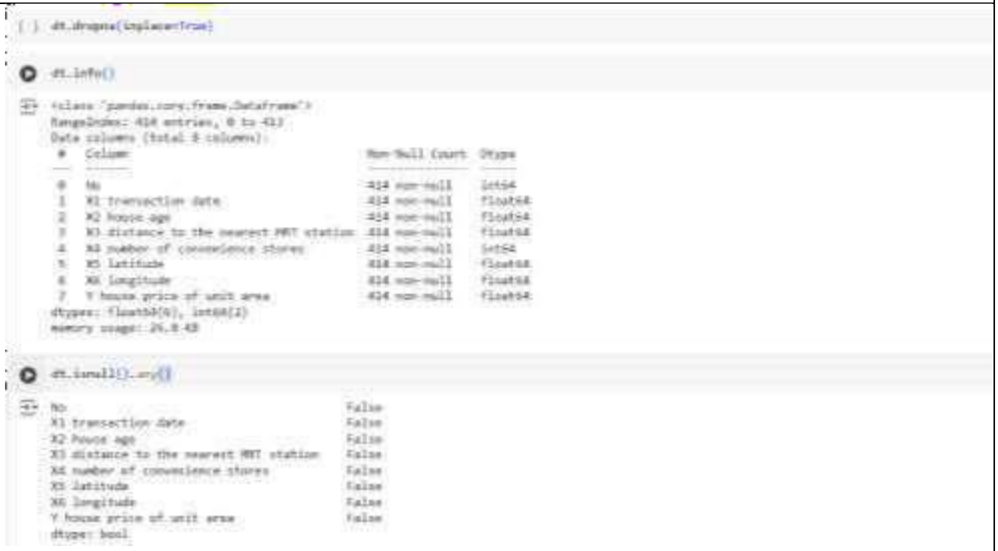
</td>
</tr>
</table>

<table>
<tr><th colspan="2">Data Preprocessing Code Screenshots</th></tr>
<tr><td>Loading Data</td><td>



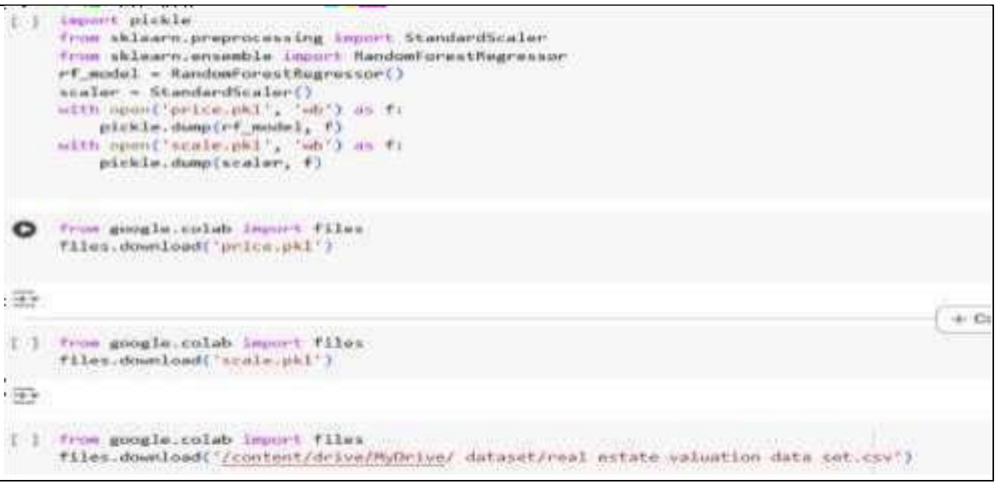
```
[ ] dt=pd.read_csv('[illegible]')

[ ] dt.head()

   No  X1 transaction date  X2 house age  X3 distance to the nearest MRT station  X4 number of convenience stores  X5 latitude  X6 longitude  Y house price of unit area
0   1             2012.917          32.0                                84.87882                               10     24.98298     121.54024                        37.9
1   2             2012.917          19.5                               306.59470                                9     24.98034     121.53951                        42.2
2   3             2013.583          13.3                               561.98450                                5     24.98746     121.54391                        47.3
3   4             2013.500          13.3                               561.98450                                5     24.98746     121.54391                        54.8
4   5             2012.833           5.0                               390.56840                                5     24.97937     121.54245                        43.1

dt

     No  X1 transaction date  X2 house age  X3 distance to the nearest MRT station  X4 number of convenience stores  X5 latitude  X6 longitude  Y house price of unit area
0     1             2012.917          32.0                                84.87882                               10     24.98298     121.54024                        37.9
1     2             2012.917          19.5                               306.59470                                9     24.98034     121.53951                        42.2
2     3             2013.583          13.3                               561.98450                                5     24.98746     121.54391                        47.3
3     4             2013.500          13.3                               561.98450                                5     24.98746     121.54391                        54.8
4     5             2012.833           5.0                               390.56840                                5     24.97937     121.54245                        43.1
...  ...                 ...           ...                                     ...                              ...          ...           ...                         ...
409  410            2013.000          13.7                              4082.01500                                0     24.94155     121.50381                        15.4
410  411            2012.667           5.6                                90.45606                                9     24.97433     121.54310                        50.0
411  412            2013.250          18.8                               390.96960                                7     24.97923     121.53986                        40.6
412  413            2013.000           8.1                               104.81010                                5     24.96674     121.54067                        52.5
413  414            2013.500           6.5                                90.45606                                9     24.97433     121.54310                        63.9
414 rows × 8 columns
```

</td></tr>
<tr><td>Finding &Handling Missing Data</td><td>



```
[ ] dt.dropna(inplace=True)

dt.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 414 entries, 0 to 413
Data columns (total 8 columns):
 #   Column                                  Non-Null Count  Dtype
---  ------                                  --------------  -----
 0   No                                      414 non-null    int64
 1   X1 transaction date                     414 non-null    float64
 2   X2 house age                            414 non-null    float64
 3   X3 distance to the nearest MRT station  414 non-null    float64
 4   X4 number of convenience stores         414 non-null    int64
 5   X5 latitude                             414 non-null    float64
 6   X6 longitude                            414 non-null    float64
 7   Y house price of unit area              414 non-null    float64
dtypes: float64(6), int64(2)
memory usage: 26.0 KB

dt.isnull().any()

No                                        False
X1 transaction date                       False
X2 house age                              False
X3 distance to the nearest MRT station    False
X4 number of convenience stores           False
X5 latitude                               False
X6 longitude                              False
Y house price of unit area                False
dtype: bool
```

</td></tr>
<tr><td>Data Transformation</td><td>-</td></tr>
<tr><td>Feature Engineering</td><td>Attached the code in final submission</td></tr>
</table>

Save Processed Data	

```
import pickle
from sklearn.preprocessing import StandardScaler
from sklearn.ensemble import RandomForestRegressor
rf_model = RandomForestRegressor()
scaler = StandardScaler()
with open('price.pkl', 'wb') as f:
    pickle.dump(rf_model, f)
with open('scale.pkl', 'wb') as f:
    pickle.dump(scaler, f)
```

```
from google.colab import files
files.download('price.pkl')
```

```
from google.colab import files
files.download('scale.pkl')
```

```
from google.colab import files
files.download('/content/drive/MyDrive/ dataset/real estate valuation data set.csv')
```