

House rent price prediction: machine learning regression for predicting house rent price.

### Abstract:

**So to deal with this kind of issues Today we will be preparing a MACHINE LEARNING Based model, trained on the House Price Prediction Dataset.**

## INTRODUCTION:

In recent times, finding the ideal housing option according to budget and preferences is such a hassle. The cost of house rent depends on many factors such as; the house size, number of bedrooms, locality, number of bathrooms, halls, and kitchen, furnishing status, and a lot more. With the use of appropriate machine learning algorithms, real estate owners can find the ideal house according to customers' budgets and preferences with ease.

**The basic procedures implemented to achieve the goals of this research are:**

1. **Data collection**
2. **Data cleaning and exploration**
3. **Feature encoding**
4. **Train-test split validation**
5. **Feature scaling**
6. **Modeling**
7. **Model evaluation.**

### Feature Encoding:

The categorical features have to be converted to numerical features for efficient modeling. Further examination shows that the categorical features have pretty much labels, therefore using one hot encoding will likely lead to high dimensionality. Therefore, Scikit-learn's label encoder was used to encode the features.

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Feature Encoding

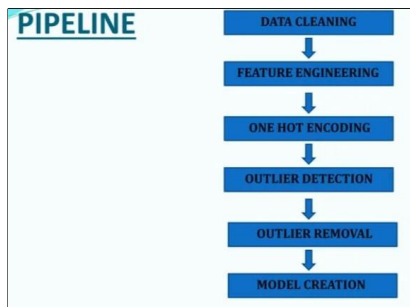
[13]: encoding the categorical variables into numerical variables
from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
for cat_col in cat_cols:
    df[cat_col] = le.fit_transform(df[cat_col])

[14]: df

```

	Poised On	RM	Km	Size	Floor	Area	Locality	City	Furnishing Status	Tenant Preferred	Bathroom	Point of Contact
0	2022-05-10	2	10000	1100	455	2	221	4	2	1	2	2
1	2022-05-13	2	20000	800	14	2	1527	4	1	1	1	2
2	2022-05-10	2	17000	1000	14	2	1750	4	1	1	1	2
3	2022-07-04	2	15000	800	10	2	526	4	2	1	1	2
4	2022-05-09	2	7500	850	10	1	1690	4	2	0	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...
4741	2022-05-10	2	15000	1000	271	1	219	3	1	1	2	2
4742	2022-05-10	3	26000	2000	16	2	1214	3	1	1	3	2
4743	2022-07-10	3	30000	1750	271	1	724	3	1	1	3	3
4744	2022-07-06	3	40000	1500	236	1	596	3	1	2	2	3
4745	2022-05-04	2	10000	1000	313	1	1910	3	2	0	2	2

4745 rows x 12 columns



### Importing Libraries and Datasets:

**Pandas** – To load the Dataframe

**Matplotlib** – To visualize the data features i.e. barplot

**Seaborn** – To see the correlation between features using heatmap

### Conclusion:

Through this project, I've been able to develop an optimal model that predicts the rent of homes. With more training data, the model's performance will be significantly improved. We created a function to predict house price.

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