PREDICT THE PRICE OF THE HOUSE

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Intordication

-Problem statement:

Due to the information gap about house prices and the difference in house prices from one neighborhood to another, the individual may face a problem estimating house prices and may be subject to deception by real estate owners. Therefore, we will build a model that predicts house prices.

-Project goal:

The main goal of this project is to study the Estates market and to train a model to predict the prices of the estates of and testing it using linear regression models .

EDA

Data Cleaning :

1-delet null values

2-Delete duplicated

EDA

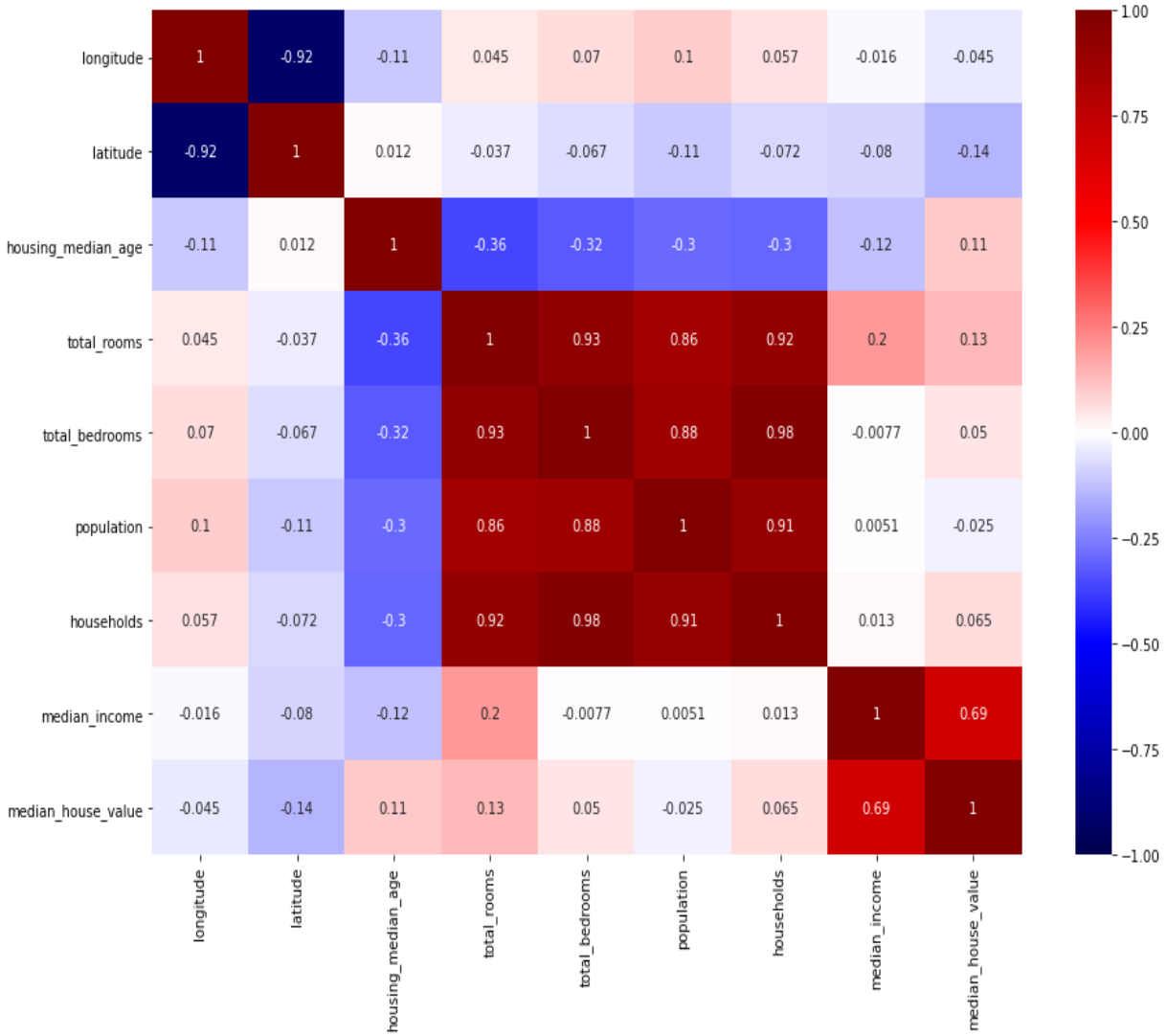
In [14]:
```
df = pd.read_csv('housing.csv')
df
```

Out[14]:

	longitude	latitude	housing_median_age	total_rooms	total_bedrooms	population	households	median_income	median_house_value	ocean_proximity
0	-122.23	37.88	41.0	880.0	129.0	322.0	126.0	8.3252	452600.0	NEAR BAY
1	-122.22	37.86	21.0	7099.0	1106.0	2401.0	1138.0	8.3014	358500.0	NEAR BAY
2	-122.24	37.85	52.0	1467.0	190.0	496.0	177.0	7.2574	352100.0	NEAR BAY
3	-122.25	37.85	52.0	1274.0	235.0	558.0	219.0	5.6431	341300.0	NEAR BAY
4	-122.25	37.85	52.0	1627.0	280.0	565.0	259.0	3.8462	342200.0	NEAR BAY
...	...	...	...	...	...	...	...	...	...	...
20635	-121.09	39.48	25.0	1665.0	374.0	845.0	330.0	1.5603	78100.0	INLAND
20636	-121.21	39.49	18.0	697.0	150.0	356.0	114.0	2.5568	77100.0	INLAND
20637	-121.22	39.43	17.0	2254.0	485.0	1007.0	433.0	1.7000	92300.0	INLAND
20638	-121.32	39.43	18.0	1860.0	409.0	741.0	349.0	1.8672	84700.0	INLAND
20639	-121.24	39.37	16.0	2785.0	616.0	1387.0	530.0	2.3886	89400.0	INLAND

20640 rows × 10 columns

EDA


longitude 1 -0.92 -0.11 0.045 0.07 0.1 0.057 -0.016 -0.045
latitude -0.92 1 0.012 -0.037 -0.067 -0.11 -0.072 -0.08 -0.14
housing_median_age -0.11 0.012 1 -0.36 -0.32 -0.3 -0.3 -0.12 0.11
total_rooms 0.045 -0.037 -0.36 1 0.93 0.86 0.92 0.2 0.13
total_bedrooms 0.07 -0.067 -0.32 0.93 1 0.88 0.98 -0.0077 0.05
population 0.1 -0.11 -0.3 0.86 0.88 1 0.91 0.0051 -0.025
households 0.057 -0.072 -0.3 0.92 0.98 0.91 1 0.013 0.065
median_income -0.016 -0.08 -0.12 0.2 -0.0077 0.0051 0.013 1 0.69
median_house_value -0.045 -0.14 0.11 0.13 0.05 -0.025 0.065 0.69 1
longitude
latitude
housing_median_age
total_rooms
total_bedrooms
population
households
median_income
median_house_value
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00

-Heat Map

Regression Models

R-squared (Cross-Validation)

Linear Regression

0.65

Polynomial

0.43

Ridge

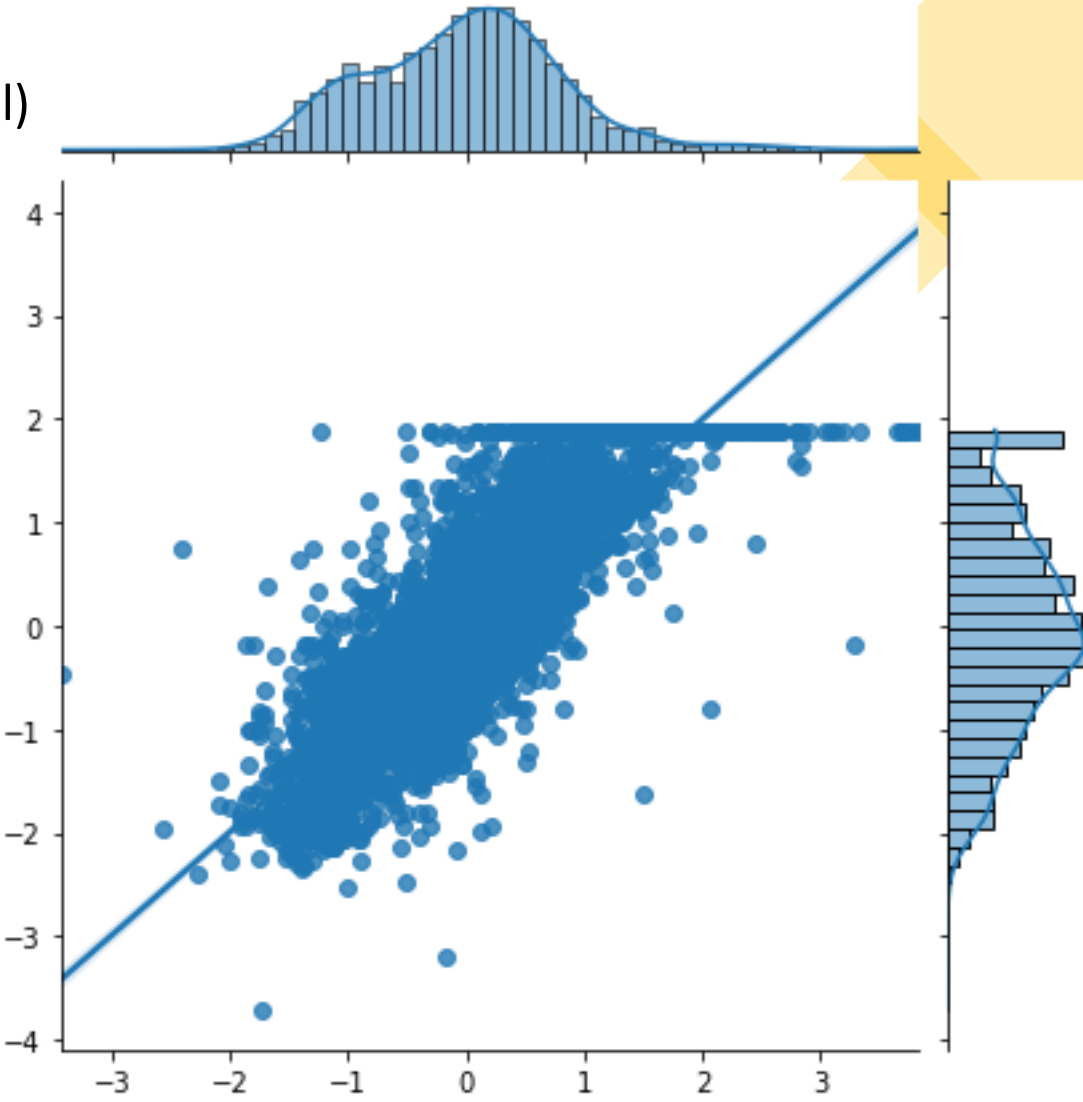
0.65

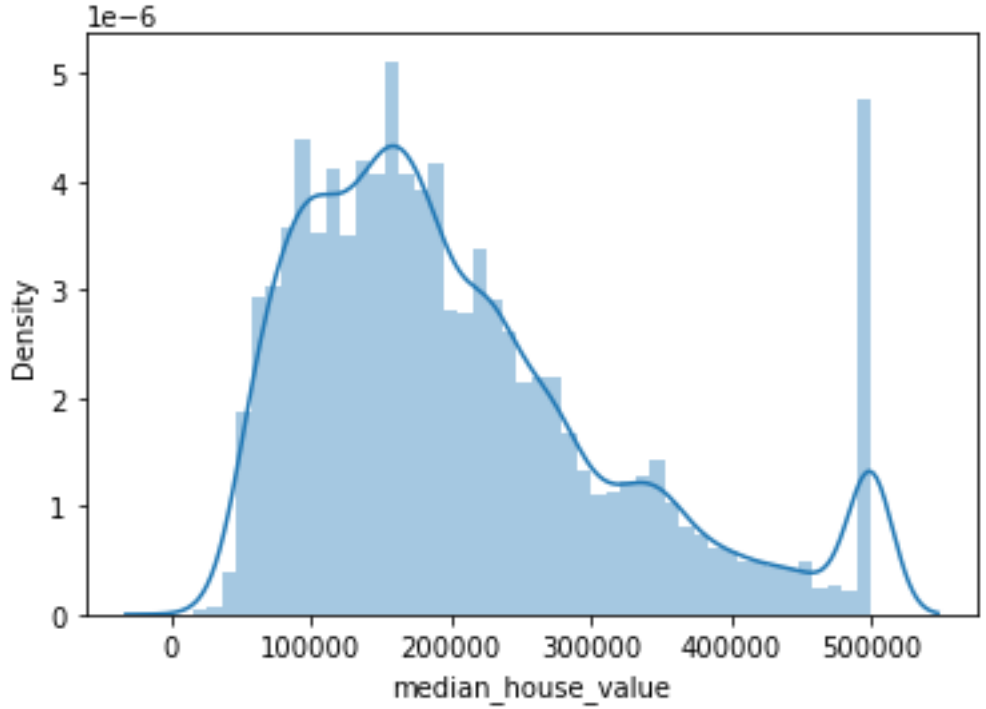
Regression Models

Prediction after the experiment(Use **Linear Regression** Model)

Training: 65%

Testing: 64%



Conclusion

We have made a model capable of predicting house prices at a high accuracy, We will develop the model with more features by increasing the number of rows to be an excellent model