NAME OF THE PROJECT

HOUSING: PRICE PREDICTION

COMPANY NAME

SURPRISE HOUSING

Submitted by:

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ACKNOWLEDGMENT

I would like to express my deep and sincere gratitude to Flip robo for giving me the opportunity to do this project. As a great bridge between me and industry.
I would like to express my sincere thankfulness to Flip robo team for the continuous support of my research, for their patience, motivation and immense knowledge.

References

1. Firstly download USA housing csv file
2. Import libraries such as pandas, numpy, seaborn, matplotlib.
3. Using different variables.
4. Using diagram with help of the sns pairplot.
5. Import sklearn model for splitting train and test.
6. Import linear Regression.
7. Predict the price.

Research Paper

1. USA Housing CSV.
2. Import Train and Test CSV.

Data Sources

I used some major data sources for housing price prediction my data sources are

1. Head
2. Tail
3. Info
4. Shape
5. Describe
6. Columns
7. And some other

INTRODUCTION

The real estate sector is an important industry with many stakeholders ranging from regulatory bodies to private companies and investors. Among these stakeholders, there is a high demand for a better understanding of the industry operational mechanism and driving factors.
Today there is a large amount of data available on relevant statistics as well ason additional contextual factors, and it is natural to try to make use of these in order to improve our understanding of the industry.
This project can be considered as a further step towards more evidence-based decision making for the benefit of this company. The project focused on assessment value for residential properties. The aim of our project was to build a predictive model for change in house prices based on certain time and geography dependent variables.

- Business Problem Framing

  There are many business problem faced in real life business because every place full of challenging and every effort is different in differ-differ business. Businessman faced market problem for his business. So he want any machine like computer which that help in future predictions such as what happen in 1 month or what is the new business process. Every businessman want that he know future which that help decrease his loss and increase his profit and Data Science with machine learning is one of the best example for this because this run according to human and display all of which that hide human eyes and mind.

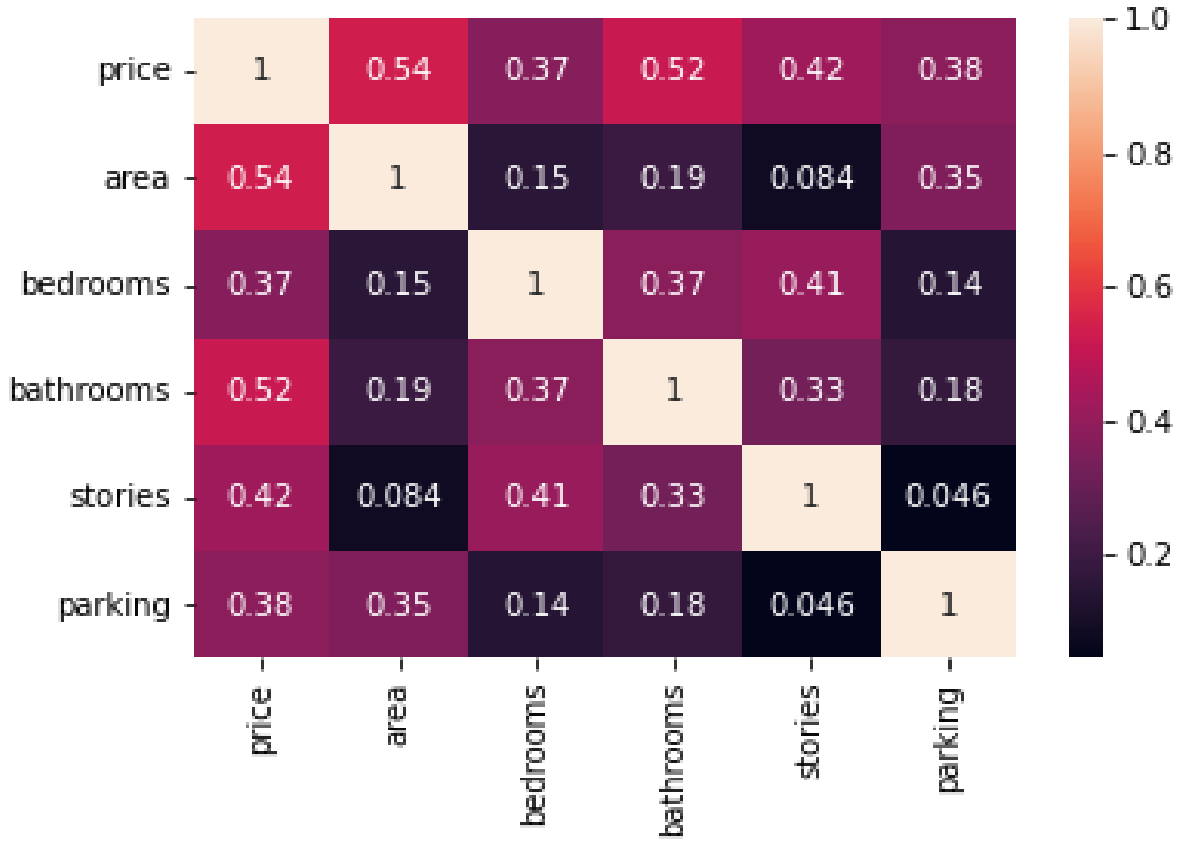
- Conceptual Background of the Domain Problem

  Visualization is very useful for better understanding the project, because visualization display the all of the data in format.

  There are differ differ visualization diagram which show that project in a small and statically format because graph is a very demanding option in every program or any other thing which make a report.

Diagram or Graph No.1

Diagram or Graph No.2



These diagram shows project display in a small format and shows that project dashboard.

- Review of Literature

  My topic is housing: price prediction and I research on the actual housing price because company shows interest in Australian real-state market and company want to know what the price of the house in this area is and company purchase this area in a reasonable price.

  Enumerate: Company collect the data (housing sale data) and calculate average price of house and my work on this data which that provide to company a final price of house which is actual and under budget.

Summarize: This is future prediction based on data which data provide by the company.

Evaluate and clarify: I collect the data and evaluate the data and find out the result who is display in my data and clarify the all thing which that company want.

- Motivation for the Problem Undertaken

My objects which that helps me to complete my project given below:

1. Head
2. Tail
3. Info
4. Shape
5. Describe
6. Columns
7. And some other

These object motivated what is the process of object and tell about every point about data.

Analytical Problem Framing

- Mathematical/ Analytical Modeling of the Problem

  I use linear Regression model and and Sk learn model which help me complete my project and describe everything in my project.

- Data Pre-processing Done

  Data pre-processing:-data pre-processing is a predominate step in machine learning to highly accurate and insightful results.

  Greater the quality of data, greater is the reliance on the produced.

  There are the number of data pre-processing techniques available such as…

  Data cleaning

  Data integration

  Data transformation

  Data reduction

- Data Inputs- Logic- Output Relationships

  I use some objects in my project which that effect the input to output when I import input data than use this object to define the output.

  Linear Regression is the major object which that effect on the data.

- Hardware and Software Requirements and Tools Used

  Jupiter Notebook is one key for any project Firstly install anaconda and python because all work done in Jupiter Notebook and libraries and packages install in python. You have a laptop or desktop computer and his conf. minimum 8gb ram and his processor 2.5 ghz and minimum 6^{th} generation specification.

Model/s Development and Evaluation

- Identification of possible problem-solving approaches (methods)

  A problem-solving approach is a technique people use to better understand the problems they face and to develop optimal solutions. They empower people to devise more innovative solutions by helping them overcome old or binary ways of thinking.

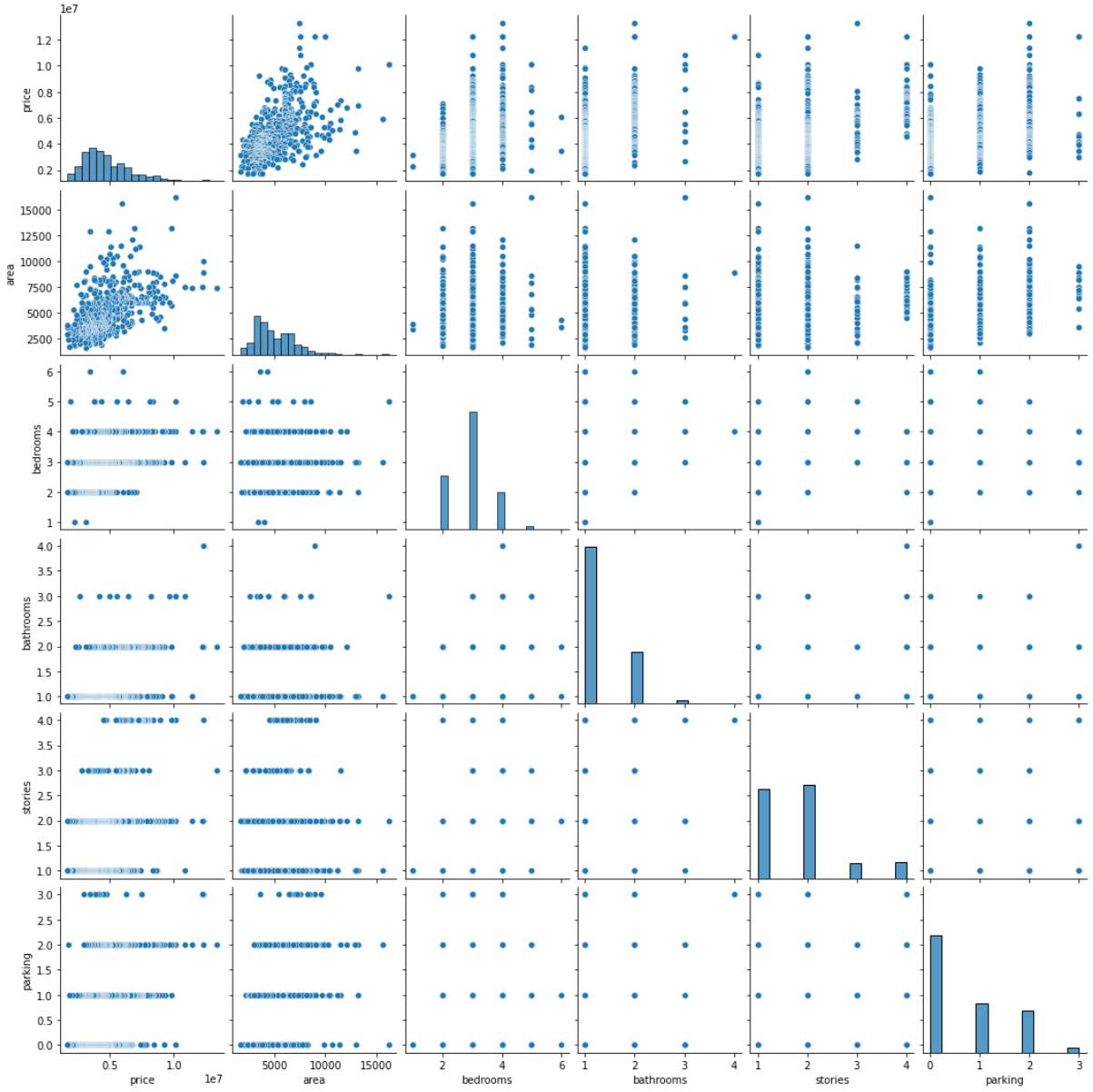
  I used statistical and analytical bot approaches which helps me come for output.

- Testing of Identified Approaches (Algorithms)

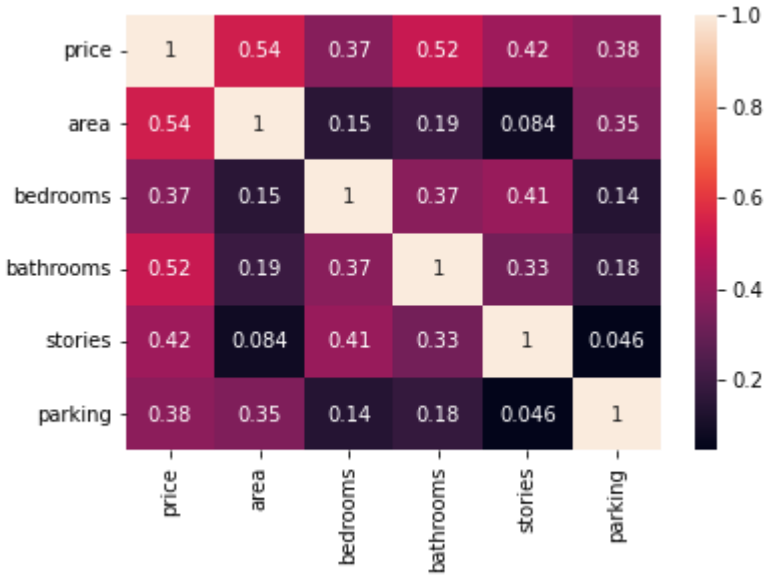
  I used Machine Learning algorithms:

  1. Supervised
  2. Unsupervised Learning
  3. Semi-supervised Learning
  4. Reinforcement Learning

- Visualizations
  1. sns.pairplot



2. sns.heatmap


price
area
bedrooms
bathrooms
stories
parking
1
0.54
0.37
0.52
0.42
0.38
0.54
1
0.15
0.19
0.084
0.35
0.37
0.15
1
0.37
0.41
0.14
0.52
0.19
0.37
1
0.33
0.18
0.42
0.084
0.41
0.33
1
0.046
0.38
0.35
0.14
0.18
0.046
1
price
area
bedrooms
bathrooms
stories
parking
1.0
0.8
0.6
0.4
0.2

- Interpretation of the Results

  Give a summary of what results were interpreted from the visualizations, preprocessing and modelling.

  Table of the Content.

  1. Introduction (The meaning of Machine learning is learning from data. Data plays a major role in building an accurate, efficient Machine learning model. Better the data will be the model. To make our data better, we need to perform data preprocessing followed by data analysis and then visualizing the data.
  2. Data pre-processing (The real-world data mostly contains noise, has null values, and might not be in a suitable format. So, we can't train our model with this data. To deal with this problem, we need to pre-process data.

     Data preprocessing is a technique to prepare the raw data such that a Machine learning model can learn from it.
     The following data preprocessing techniques make our data fit for training the model.
     1. Dealing with Null Values.
     2. Dealing with Categorical Variables.

  3. Data analysis (It is a technique to gain important information from data by manipulating, transforming, and visualizing the data. The goal is to find patterns in data.
     Exploratory Data Analysis (EDA) in this article as it is one of the most used techniques for data analysis.
     EDA is a method of analyzing data to outline principal characteristics, often using graphs and other visualization techniques.

  4. Data visualization (It is a method to present data in graphical format. It makes data easily understandable as the data is in summarized form. Even a large amount of data can be easily understood just by looking at a graph or plot. In python, we mostly use the MatPlotlib library for data visualization.

CONCLUSION

- Key Findings and Conclusions of the Study

  The constructs a fundamental algorithm based on the multiple linear regression method to predict housing price and combines it with the spearman correlation coefficient to determine the influential factor affecting housing prices…to train and test parameter of this multiple linear regression model, the author applies the dataset of the housing price in prediction model construction. From the simulation result it can be concluded that the proposed linear regression model can effectively analyse and predict the housing price some extent.