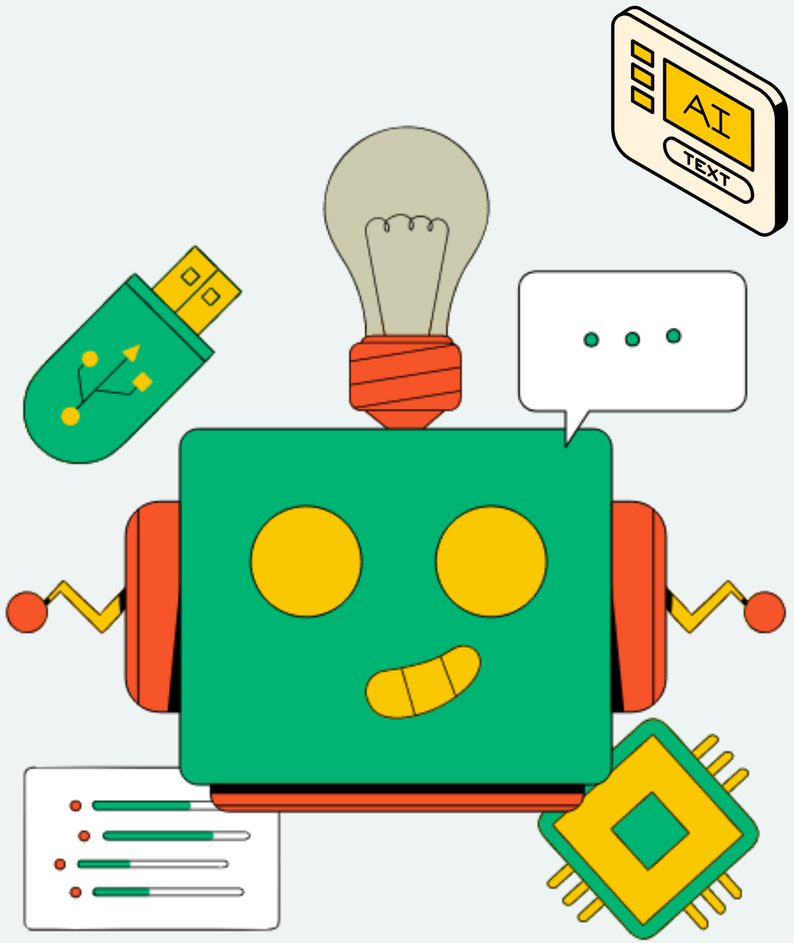
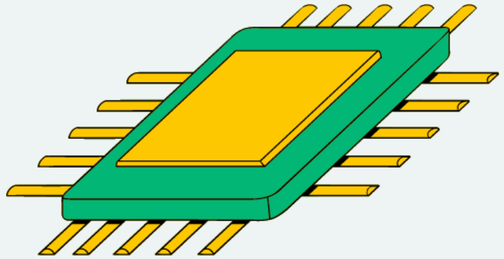
CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Affiliated to Osmania University



MACHINE LEARNING COURSE END PROJECT

PRESENTED BY:

RAMYA
160122771085



HOUSE PRICE PREDICTION USING MACHINE LEARNING

INTRODUCTION

Predicting house prices is a critical task in the real estate industry, enabling stakeholders to make informed decisions.

This project aims to build a machine learning model to predict house prices using various features such as the number of rooms, location, and other relevant attributes.

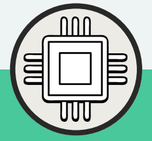
DATASET

HousePricePrediction.csv

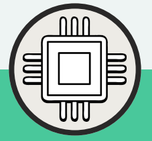
Features :

- Id
- MSSubClass
- MSZoning
- LotArea
- LotConfig
- BldgType
- OverallCond
- YearBuilt
- YearRemodAdd
- Exterior1st
- BsmtFinSF2
- TotalBsmtSF
- SalePrice

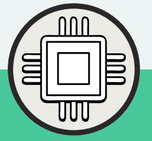
DATA PREPROCESSING



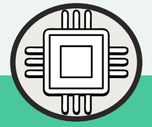
Identifying and separating categorical, integer, and float variables.



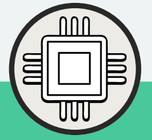
Conducting exploratory data analysis.



Handling missing values.



Encoding categorical variables using One-Hot Encoding.



Splitting the dataset

ALGORITHMS POSSIBLE

- SVM–Support Vector Machine
- Random Forest Regressor
- Linear Regressor
- CatBoost Classifier

I used here is SVM.
SVM is a powerful and flexible machine learning algorithm that can be used forclassification and regression problems, goal is to categorize data into different classes.

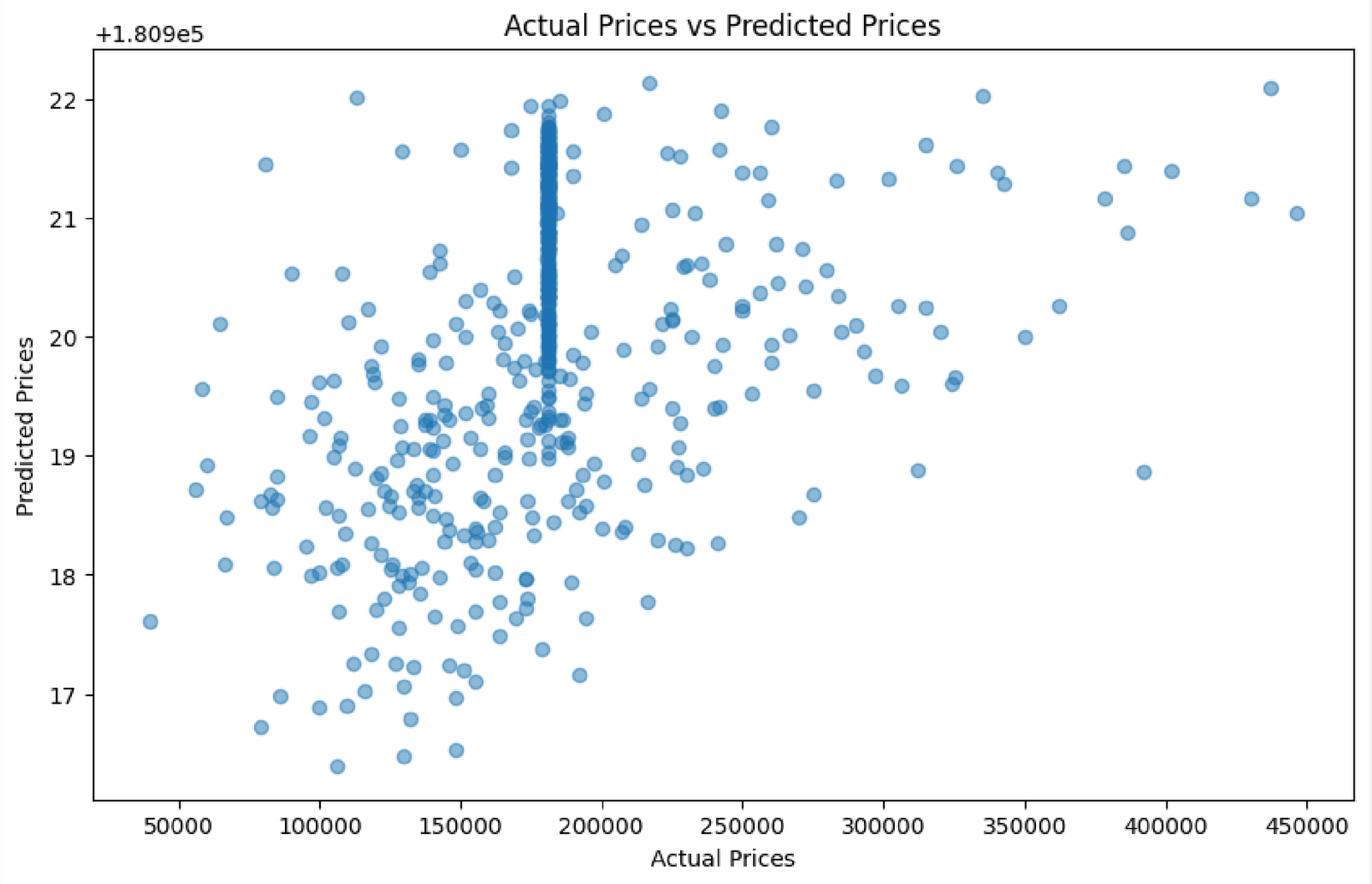
EXECUTION

```
from sklearn import svm
from sklearn.svm import SVC
from sklearn.metrics import mean_absolute_percentage_error
model_SVR = svm.SVR()
model_SVR.fit(X_train,Y_train)
Y_pred = model_SVR.predict(X_valid)
print("Mean Absolute Percentage Error:",
mean_absolute_percentage_error(Y_valid, Y_pred))

plt.figure(figsize=(10, 6))
plt.scatter(Y_valid, Y_pred, alpha=0.5)
plt.xlabel("Actual Prices")
plt.ylabel("Predicted Prices")
plt.title("Actual Prices vs Predicted Prices")
plt.show()
```

RESULTS

Mean Absolute Percentage Error: 0.18704778826125987



THANK YOU