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Property Management System

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Abstract: ***The price of a house is increased every year according to the location. It indicates the current economic situation so there is a need for a system to predict house sales in the future for both buyer and the seller. Here we use a dataset of Pune with more than 68,613 entries of train data and test data of housing sales in India. This analysis includes the effect of markdowns on sales and the extent of effects on the sales by size, price, area etc. has been analysed using different machine learning algorithms. Estimating home sales can help the developer determine the selling price of the home and the best time for the buyer to purchase the home. The output values of the algorithms are estimated based on the input characteristics from the data presented in the system and the analysis is a process. Physical conditions, concept and location are the three factors that determine the selling price of a property.***
Keywords: Admin, broker, Machine Learning, Python Django, Real Estate, Property

I. INTRODUCTION

In this world of Globalism, so many people are interested in investing in a business enterprise, gold, stocks and commodities are examples of investment assets. But Real estate investment is one of the most loved and important assets in today's world. Not only today but in the past several years. Real estate investment is not only an investment but also an emotion. People put their lifelong earnings into buying property for their loved ones for themselves and their coming generations. Property investment is also one of the safest investments in terms of valuable assets, good returns, and an asset of coming so many generations. Also, it is an asset which can generate a regular income. Although long established system of Buying and selling property has become outdated and insufficient today. This research paper's objective is to make buying and selling property easier and safer for buyers and sellers from their comfort. Also giving an opportunity to the Broker and making the overall process easy and fast without any problems.

II. LITERATURE REVIEW

A. Predicting House Price In India

This paper focuses on predicting the price trends in India depending on different Climates, and environments using machine learning and tells the reasons for changes in Real estate prices.

B. Real Estate Management System Using Blockchain

This paper discusses a central security system design using a JavaScript Development framework to record all the transactions between departments in India that deal with real estate.

C. Reviewing The Effects Of Spatial Features On Price Prediction

These papers talk about the spatial features considered to predict the House prices. This paper focuses on data of Istanbul, turkey.

D. Bangalore House Price Prediction

This paper focuses on data from Bangalore. It uses Machine Learning Algorithms to predict house prices. The focus of this paper is to predict house prices using real-time reasons and data. In this paper, they have named the app Heroku Cloud Application Platform.

III. METHODOLOGY

To Develop the system, we used Machine Learning and the web-development framework Python Django. Using Machine learning we developed the dynamic price prediction.
To develop the dynamic price prediction we have used pandas, NumPy, sklearn, skleran_pandas and sklearn. metrics. let's explain Model First to develop the model we have used the google colab

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A. Pre-processing

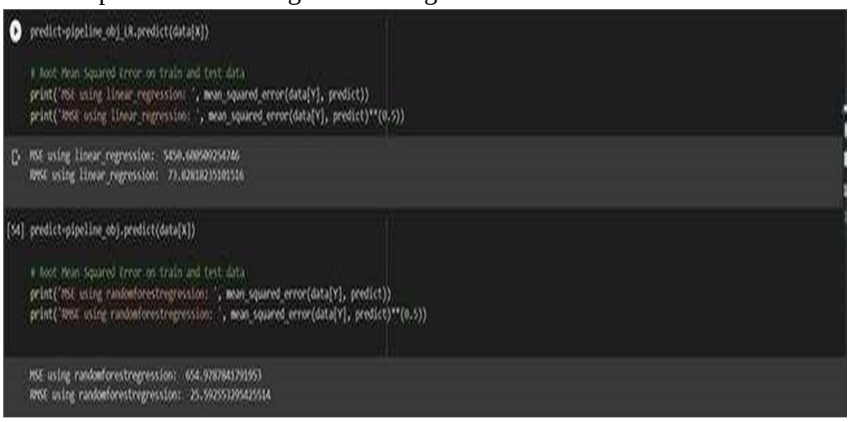
The data pre-processing is a process where we have raw data in the dataset and with some noise data so we make it suitable for the machine and it can predict something that we want accurately and more precisely

B. Algorithm Comparison

In this we come with some algorithm like linear Regression and Random Forest

1) *Linear Regression:* Linear Regression is an algo to used predict the value of a variable based on the value of Another variable is a linear approach to modelling the relationship between scaler response
2) *Random Forest:* Random Forest combines multiple o/p of the decision Tree to get a single result it is a method of ensemble learning method of Classification and Regression for comparison there are different methods for both Classification and Regression
3) *Classification:* In Classification, we compare the two algorithms using % method using it we get accurate like for e.g.: - 98% accuracy like this
4) *Regression:* In this regression model we compare the algorithm using the MSE and RMSE
5) *RMSE:* In RMSE (Root Mean Square Error) we see that the result we get is near to 0 or it should be 0 it means the model is best and it vastly
6) *MSE:* The MSE (Mean Square Error) value closer to 0 is a best fitted model but in it there is not good value for the MSE

The below (fig 1) the show the compare of the two-algorithm using MSE and the RMSE



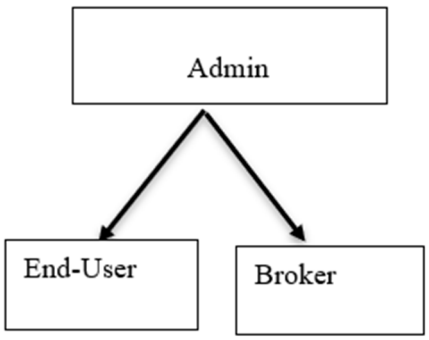
(Fig:1)

Now we explain the web application and Backend

C. Web Application and Backend

1) Web Application

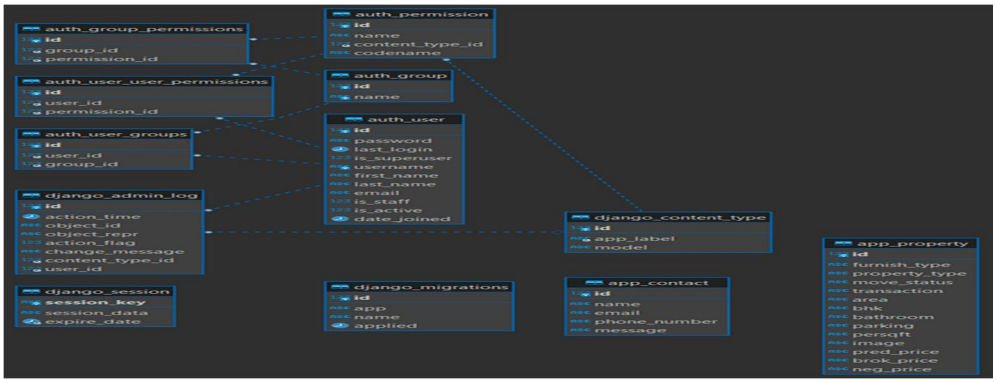
Using the python-Django framework we have developed the application for three types of users in the fig (1.1) it shows that in web application admin control both end-user and broker



(Fig:1.1)

2) Backend

Using the MYSQL workbench server and Deaver

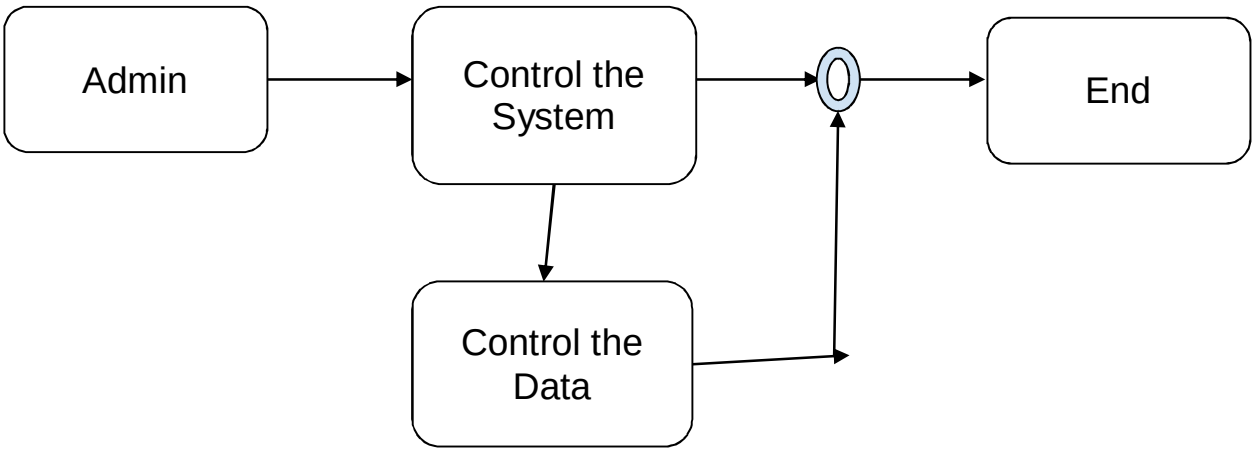


(Fig:2)

IV. PROPOSED SYSTEM

There are three types of users Admin, End-User and Broker the (fig:3) shows that the admin control the system and the data of the application

1) Admin



(Fig:3)

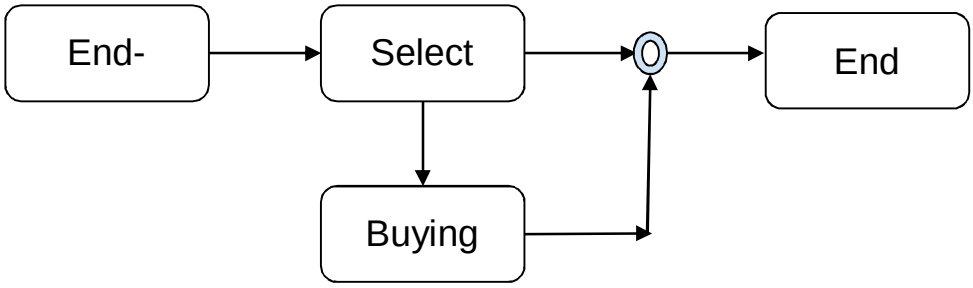
2) Broker



(Fig:3.1)

The (fig:3.1) show that can list it's a property on the application

3) User

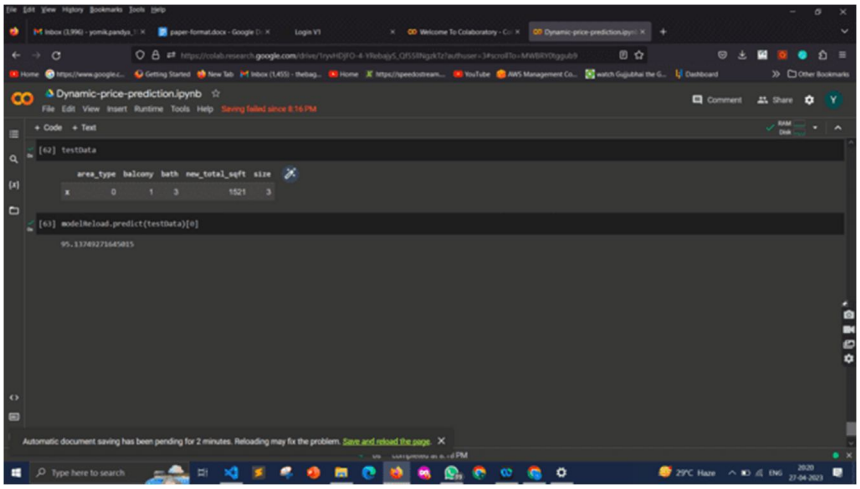


(Fig:3.2)

The (fig:3.2) shows that the end-user and select and go for the buying process of the property

V. RESULT

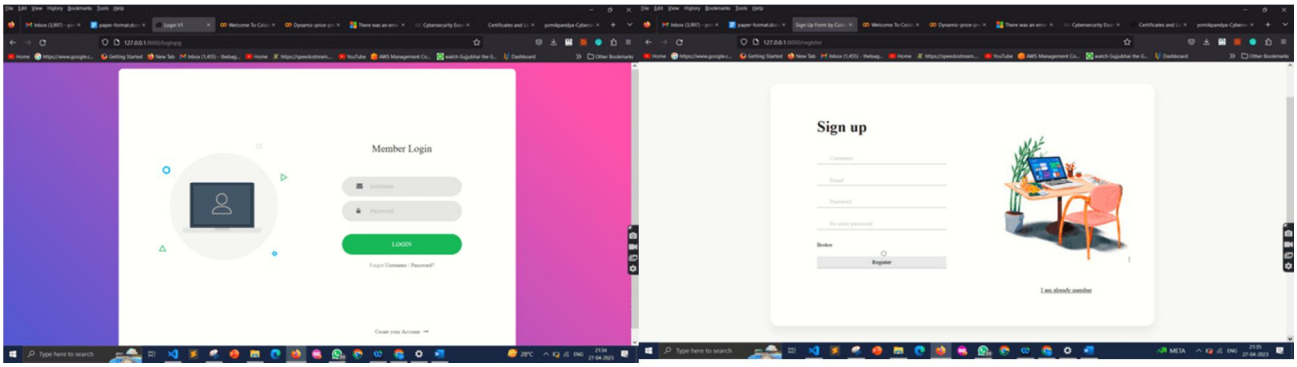
1) Model Output



(Fig: 4)

The (fig: 4) shows the successful prediction of the predicted price using the Machine Learning Model

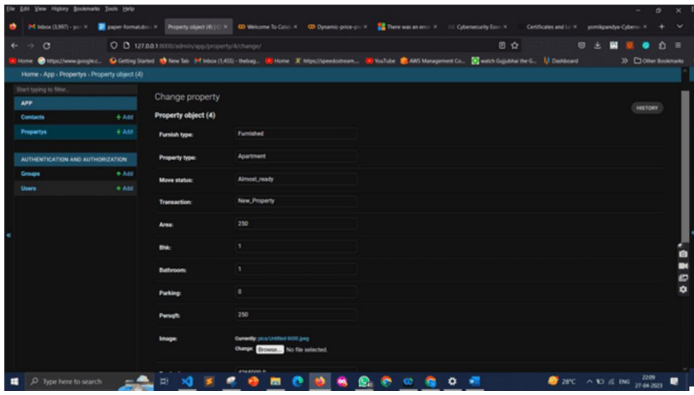
2) User Login



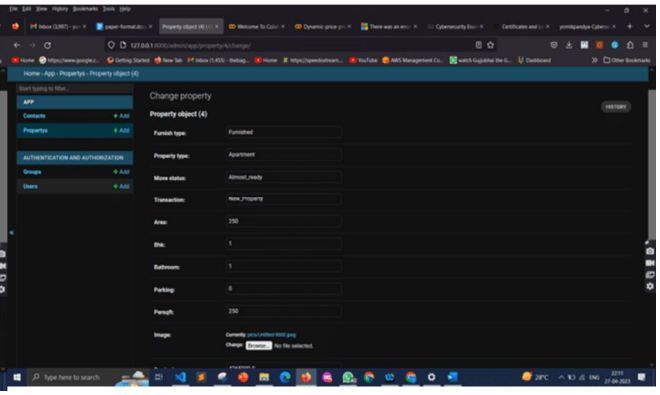
(Fig:5) (fig:5.1)

The (fig:5) & (fig:5.1) shows the login authentication for the End-User, Broker and Admin

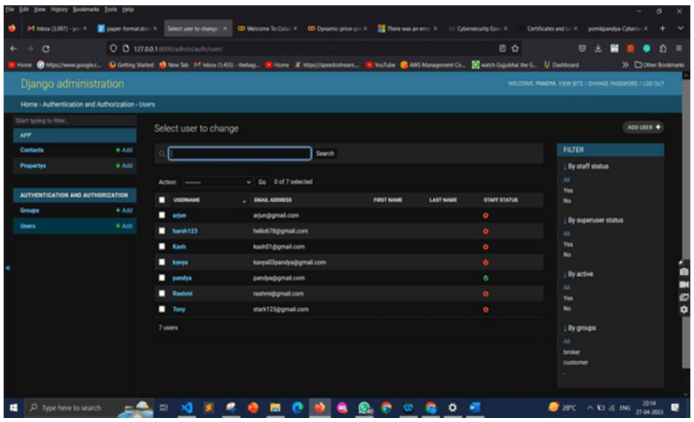
3) Admin



(Fig:6)



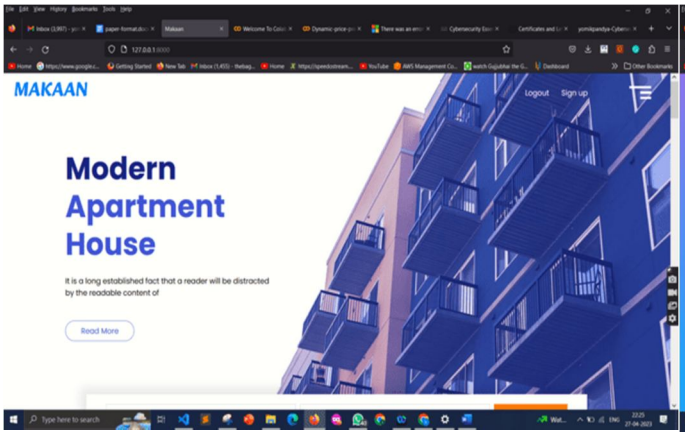
(Fig:6.1)



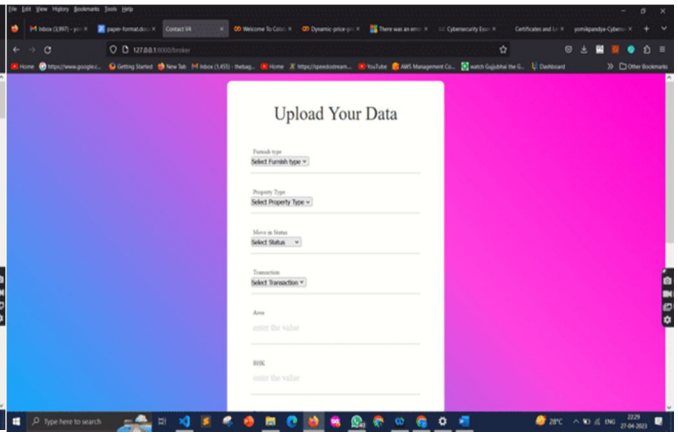
(Fig:6.2)

The (fig:6), (fig:6.1) and (fig:6.2) show the control of the user-data and the whole system

4) Broker



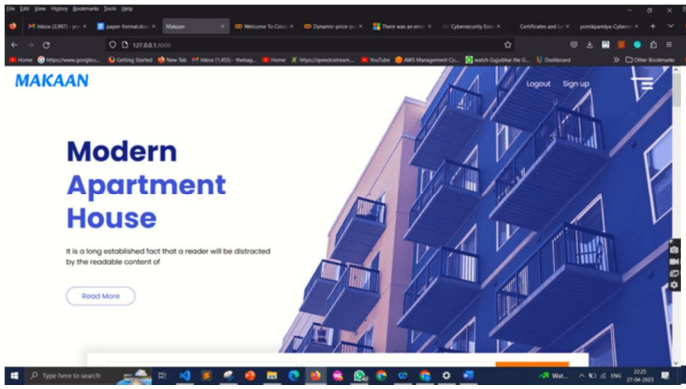
(Fig:7)



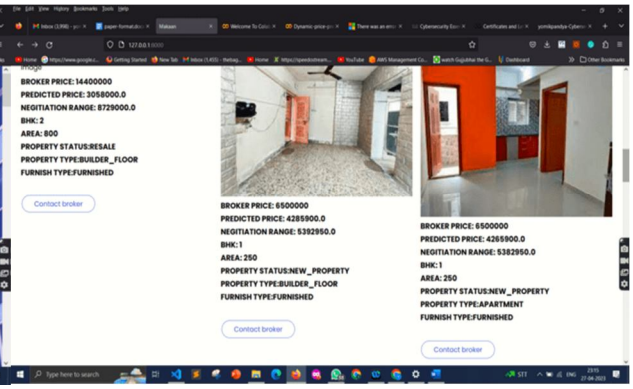
(fig:7.1)

The (fig:7) & (fig:7.1) shows the Broker listing its property in the application

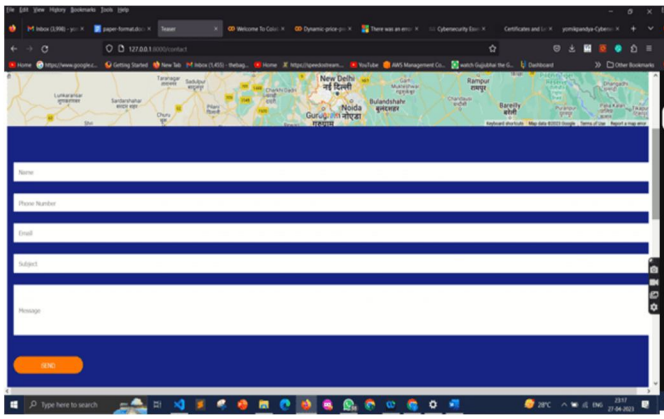
5) End-User



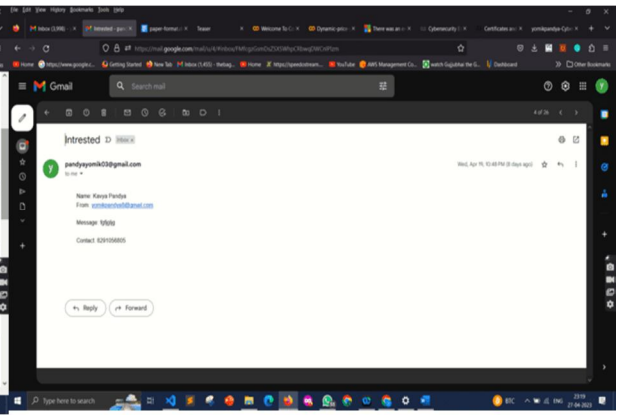
(Fig:8)



(fig:8.1)



(Fig:8.2)



(fig:8.3)

The (fig:8) & (fig:8.1) show that the user can select the property and after meeting with admin and broker the user can go for buying process

VI. CONCLUSION

In this application we conclude that we provided the one market place were both admin and the broker can sell their property in one application with the affordable price user can get and provide the best User Experience to the User and so because of it the admin can increase the business because of it and we have provided the dynamic price that we generated this is the reason with the help of it End-User can get best and the affordable price to buy it's a property with a lot's of expertise. and for our dynamic prediction, we use Google Collab where we have developed our model and get the best accuracy through which we predict the price of the property & we use the python-Django Framework to develop the application and for the backend, we use the MySQL workbench server and beaver for storing the data into our database

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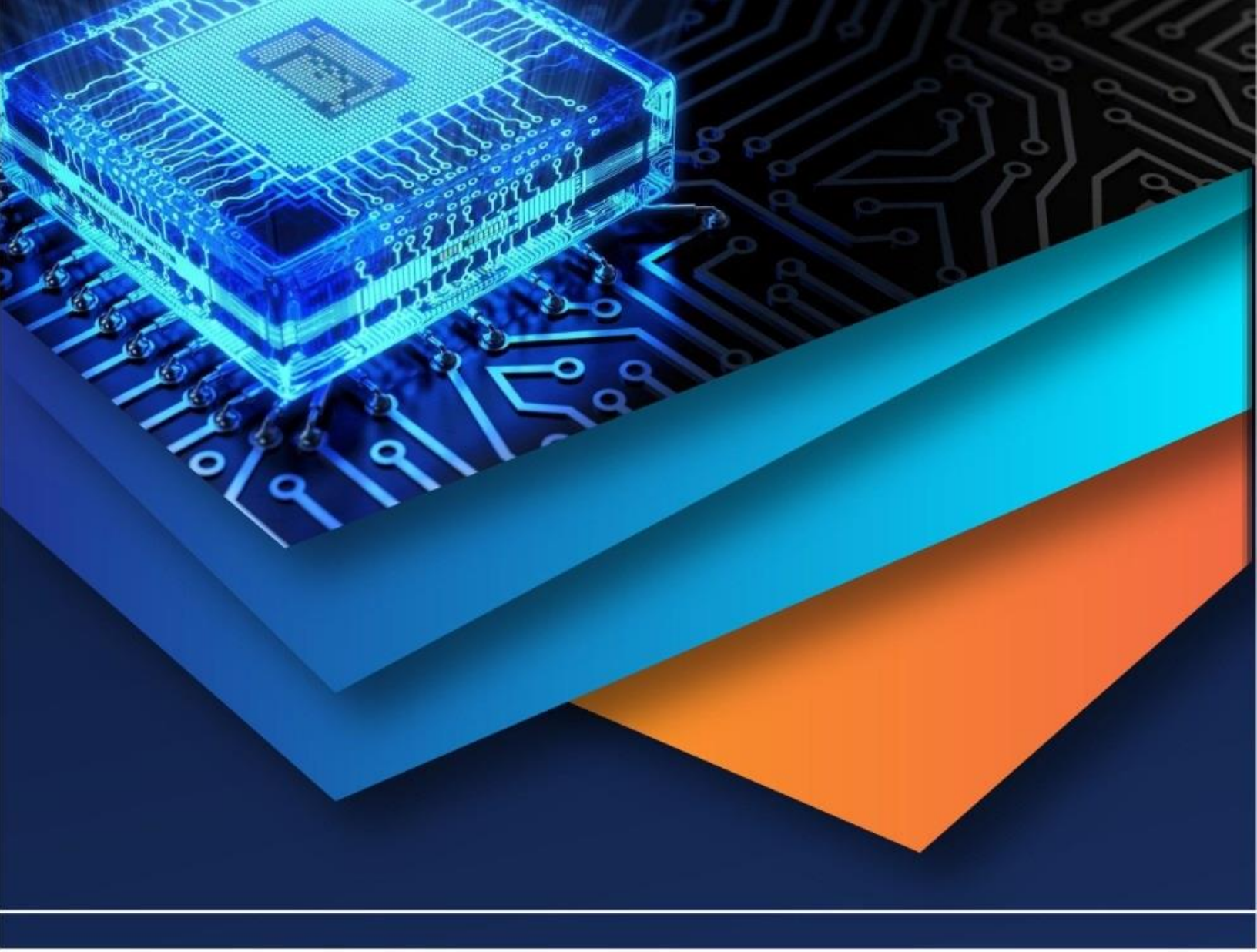
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