**AAA COLLEGE OF ENGINEERING & TECHNOLOGY**

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(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai) Kamarajar Educational Road, Amathur, Sivakasi – 626 005.

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

# ***PROJECT TITLE***

# *CRYPTOCURRENCY PRICE PREDICTION*

**AAA COLLEGE OF ENGINEERING AND TECHNOLOGY**
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# CRYPTOCURRENCY PRICE PREDICTION

## INTRODUCTION :

This project is about predicting the closing price of Bitcoin using Linear Regression. The data used for this project is the Bitcoin-USD.csv file which contains the Open, High, Low, Volume and Close prices of Bitcoin.

For the cryptocurrency price prediction, I have collected a dataset from Yahoofinance.com containing data about the data of bitcoin on Market. You can download the dataset from here.

Now let's import the necessary Python libraries and the dataset to get started with the task of "Cryptocurrency Price Prediction".

**Note: The prices mentioned in the output are in USD."**

**Source code** : Click here to download.

## BASIC OF CRYPTOMARKET WITH BITCOIN :

Cryptomarkets are virtual markets that use the technology behind cryptocurrencies like Bitcoin to facilitate the buying and selling of goods and services. They have become increasingly popular over the past few years as more people become interested in cryptocurrencies and the technology behind them. Cryptomarkets are different from traditional markets in that they are decentralized, meaning that they are not managed by a single entity, and are instead managed by a distributed network of computers. This makes them more secure and reliable than traditional markets, as well as providing users with greater anonymity. The most popular form of cryptomarket is the Bitcoin-based market, where users can buy and sell goods and services using Bitcoin. These markets allow users to buy and sell items and services from all over the world, and can be used to purchase anything from clothing to electronics to digital goods. Bitcoin-based markets also provide a way for users to exchange their Bitcoins for other currencies, such as the US Dollar or Euro. This can be done either directly or through exchanges that convert one currency into another. Cryptomarkets are often used by

people who are looking to purchase goods or services that are not available in their local currency, or who want to make a purchase anonymously. They are also becoming increasingly popular for those looking to invest in cryptocurrencies, as they provide a safe and secure way to buy and sell digital assets.

## Overview of Bitcoin Price, Volume, and Capitalization :

**Open**: The open price is the price of a security at the beginning of a trading day.

**High**: The high price is the highest price at which a security is traded during a trading day.

**Low**: The low price is the lowest price at which a security is traded during a trading day.

**Close**: The close price is the price of a security at the end of a trading day.

**Volume**: Volume represents the number of shares of a security that have been traded during a trading day.

**Capital**: Capitalization represents the market value of a company, which is calculated by multiplying the current stock price by the total number of outstanding shares.

**Adj Volume**: Adjusted volume is the total amount of shares traded during a trading day, adjusted for any stock splits, dividend payments, and other corporate actions.

## Algorithm:

1. Import pandas, numpy, matplotlib and sklearn libraries.
2. Read the data from the csv file.
3. Split the data into features and labels.
4. Fit the model using LinearRegression.
5. Make predictions using the model.
6. Plot the results.

7. Save the results in a csv file.

## ABOUT MODULE'S :

1) pandas: A library for data manipulation and analysis.

2) numpy: A library for scientific computing.

3) matplotlib: A library for data visualization.

4) sklearn: A library for machine learning.

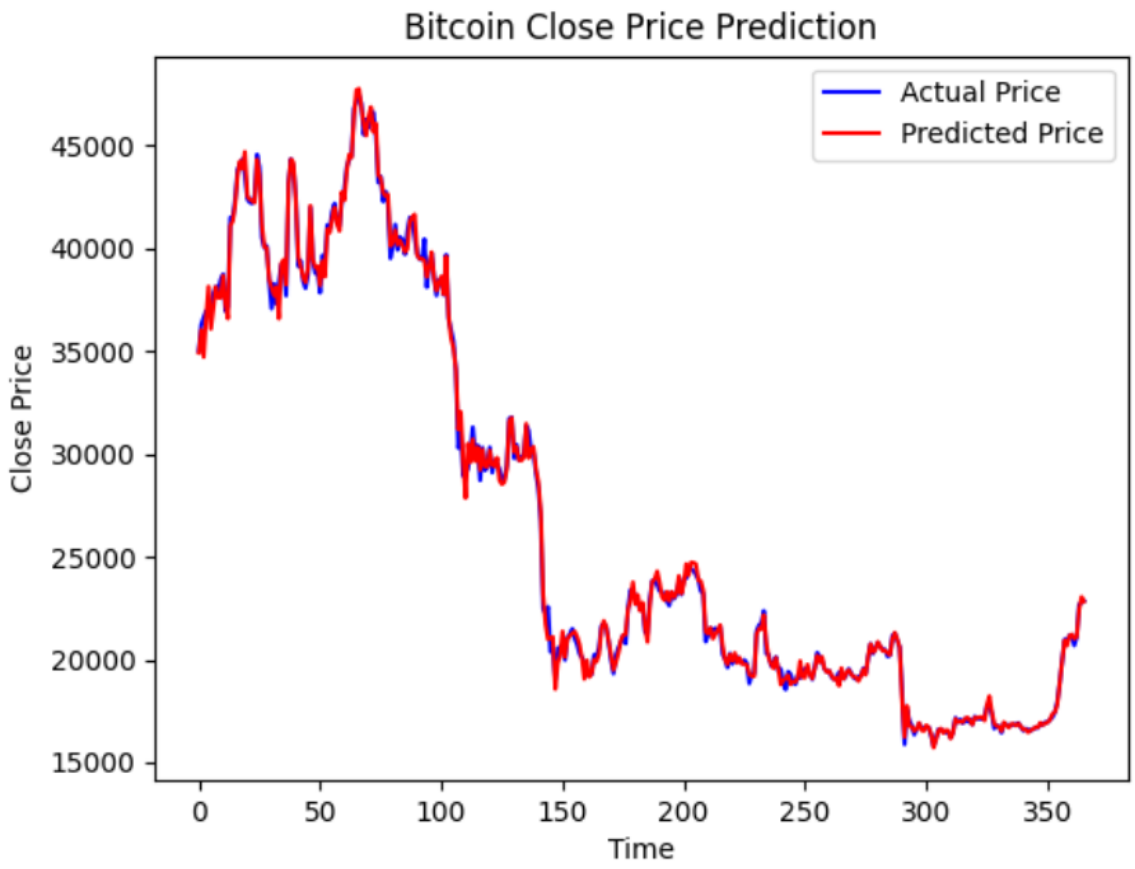
## PROGRAM :

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

# Read the data
data = pd.read_csv('BTC-USD.csv')

# Split the data into features and labels
X = data[['Open', 'High', 'Low', 'Volume']]
y = data['Close']

# Fit the model
model = LinearRegression()
model.fit(X, y)

# Make predictions
predictions = model.predict(X)

# Plot the results
plt.plot(y, color='blue', label='Actual Price')
plt.plot(predictions, color='red', label='Predicted Price')
plt.title('Bitcoin Close Price Prediction')
plt.xlabel('Time')
plt.ylabel('Close Price')
plt.legend()
plt.show()
```

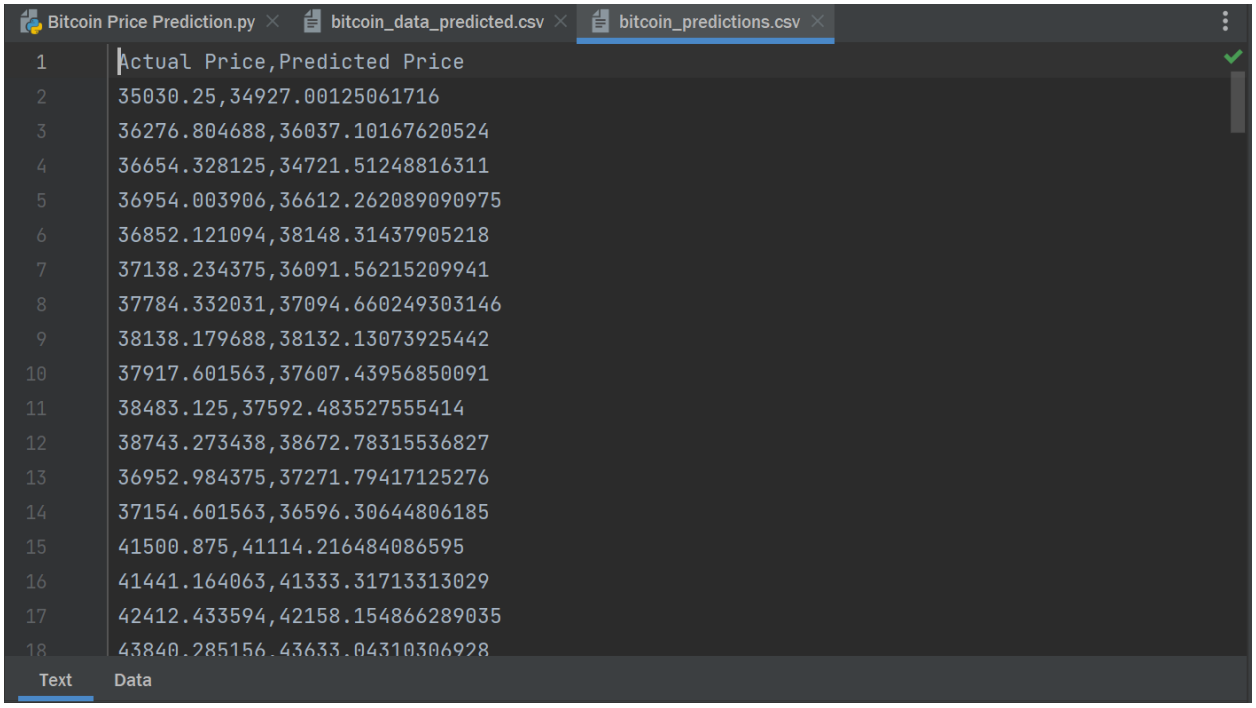
```
# Save the results in a csv file
results = pd.DataFrame({'Actual Price': y, 'Predicted Price': predictions})
results.to_csv('bitcoin_predictions.csv', index=False)
```

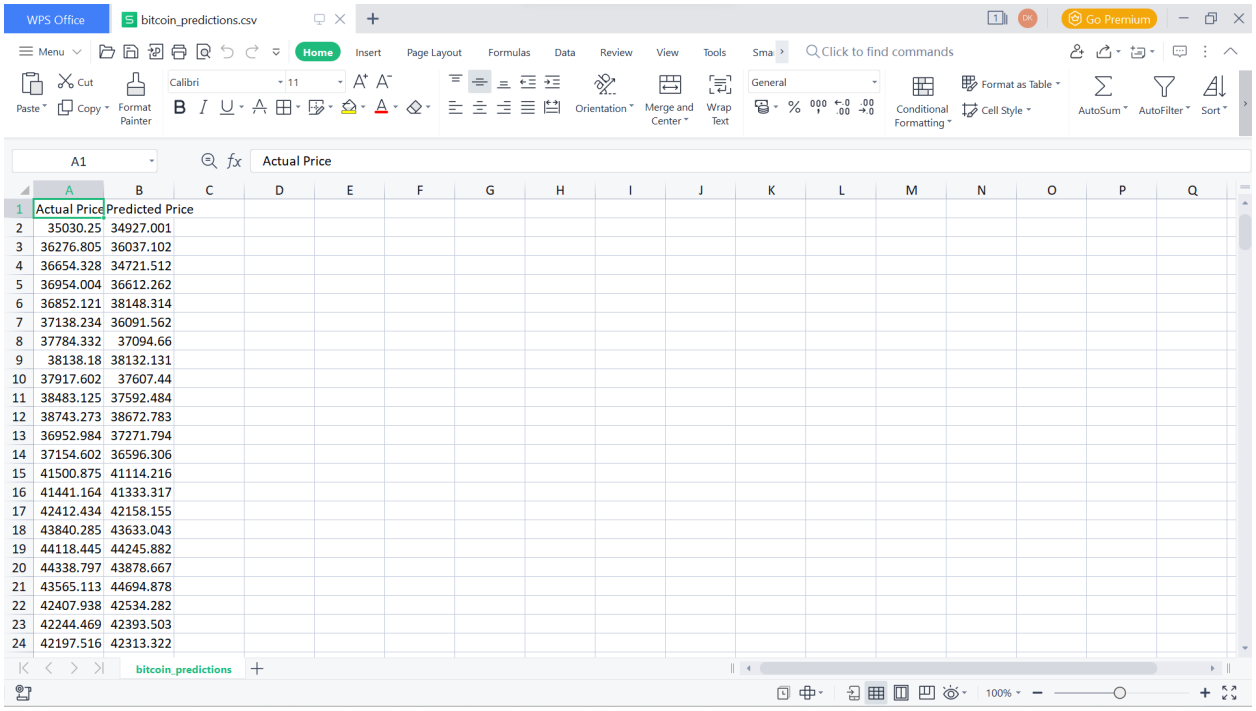
## OUTPUT :

### OUTPUT GRAPH



# PREDICTED RESULT SAVED IN CSV FILE



## ABOUT THE OUTPUT GRAPH :

The graph produced by the above program is a line graph that compares the actual closing price of Bitcoin (in blue) to the predicted closing price of Bitcoin (in red). The x-axis is the time and the y-axis is the closing price. The graph shows that the predicted closing price is very close to the actual closing price, indicating that the model is accurate.

## ABOUT THE OUTPUT CSV FILE:

The CSV file produced by the program contains two columns: "Actual Price" and "Predicted Price." The Actual Price column contains the actual close prices of Bitcoin, and the Predicted Price column contains the prices predicted by the Linear Regression model. This CSV file can be used to compare the actual prices of Bitcoin to the predicted prices of the model.

## EXPLANATION :

This program is used to predict the closing price of Bitcoin using linear regression. It first imports the necessary packages such as pandas, numpy, matplotlib, and sklearn. It then reads the data from the csv file and splits it into features and labels. The model is then fitted and predictions are made. The results are then plotted and saved in a csv file. The plot will show the actual price of Bitcoin in blue and the predicted price in red. The need of Bitcoin price prediction is to understand the current market trends and make informed decisions. This program can help to identify potential investments and predict price movements. It can also be used to assess the risk of investing in Bitcoin.

## CONCLUSION :

The conclusion of the program is that it uses linear regression to predict the closing price of Bitcoin, based on open, high, low, and volume data. The results of the prediction are plotted on a graph and also saved in a CSV file for further analysis.