# Bitcoin Price Predictor

## Project Overview

This project aims to predict Bitcoin prices using historical data from 2018 to 2024. The model is built and trained using Google Colab.

## Dataset

* **Name**: BITCOIN Historical Datasets 2018-2024
* **Source**: [Kaggle](https://www.kaggle.com/datasets/novandraanugrah/bitcoin-historical-datasets-2018-2024" \t "https://copilot.microsoft.com/_blank)
* **Description**: The dataset contains daily historical data of Bitcoin prices, including columns such as Open, High, Low, Close, Volume, and more.

## Tools and Libraries

* **Google Colab**: For running the model
* **Python**: Programming language
* **Pandas**: Data manipulation and analysis
* **NumPy**: Numerical computing
* **Matplotlib/Seaborn**: Data visualization
* **Scikit-learn**: Machine learning library
* **TensorFlow/Keras**: Deep learning framework

## Steps Involved

**Data Preprocessing**:

* + Handling null values and outliers
  + Feature scaling and normalization
  + Splitting the data into training and testing sets

**Exploratory Data Analysis (EDA)**:

* + Visualizing trends and patterns in the data
  + Correlation analysis

**Feature Engineering**:

* + Creating new features based on existing data
  + Selecting the most relevant features for the model

**Model Selection**:

* + Trying different models (e.g., Linear Regression, LSTM, etc.)
  + Hyperparameter tuning

**Model Training and Testing**:

* + Training the model on the training set
  + Evaluating the model on the testing set
  + Avoiding overfitting and bias

**Deployment**:

* + Saving the trained model
  + Creating a user-friendly interface for predictions

## How to Run the Project

1. Clone the repository.
2. Download the dataset from Kaggle and place it in the appropriate directory.
3. Open the project in Google Colab.
4. Run the cells in the notebook to preprocess the data, train the model, and make predictions.

## Results

* The model’s performance metrics
* Visualizations of the predicted vs. actual prices

## Future Work

* Improving the model’s accuracy
* Adding more features
* Exploring other machine learning algorithms

## Contributing

Feel free to fork the repository and submit pull requests. For major changes, please open an issue first to discuss what you would like to change.