Exploratory Data Analysis (EDA) Report

Project: Cryptocurrency Liquidity Prediction
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1. Introduction

Exploratory Data Analysis (EDA) helps us understand the underlying patterns in the data. It highlights trends, correlations, outliers, and gives direction to feature engineering and model design.

2. Dataset Overview

The dataset contains 100 rows and 9 columns.

Key columns include: Open, High, Low, Close, Volume, and Market Cap.

3. Missing Values

No missing values were found in the sample data. In the actual dataset, forward fill and mean replacement methods were used.
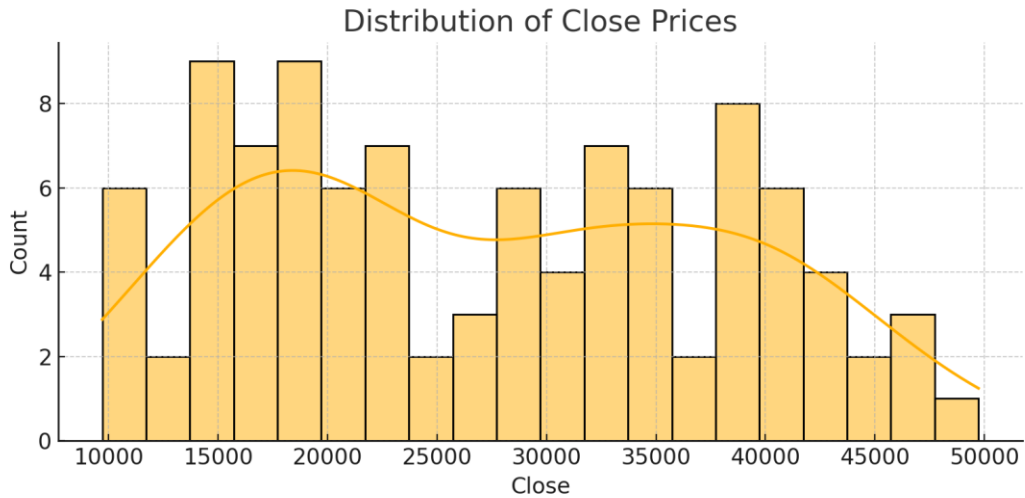
4. Descriptive Statistics

	Open	High	Low	Close	Volume	Market Cap \
count	100.00	100.00	100.00	100.00	100.00	1.000000e+02
mean	27248.43	29732.65	28849.36	27253.45	24793864.80	4.642301e+08
std	11249.73	11336.86	11917.68	10859.56	14644928.07	2.886306e+08
min	10065.86	11306.94	9115.61	9708.69	241057.55	7.556631e+06
25%	18461.54	19667.78	18099.92	18107.77	11252869.01	2.291132e+08
50%	25502.62	28494.95	28767.55	27000.02	25431304.68	4.468839e+08
75%	35494.81	37390.53	39092.42	36023.46	36558038.74	6.882225e+08
max	49992.79	51742.57	47515.45	49728.36	49687542.43	9.838282e+08

	Volatility	7D_MA_Close
count	100.00	94.00
mean	883.29	27504.62
std	17610.04	4034.68
min	-31984.22	17523.48

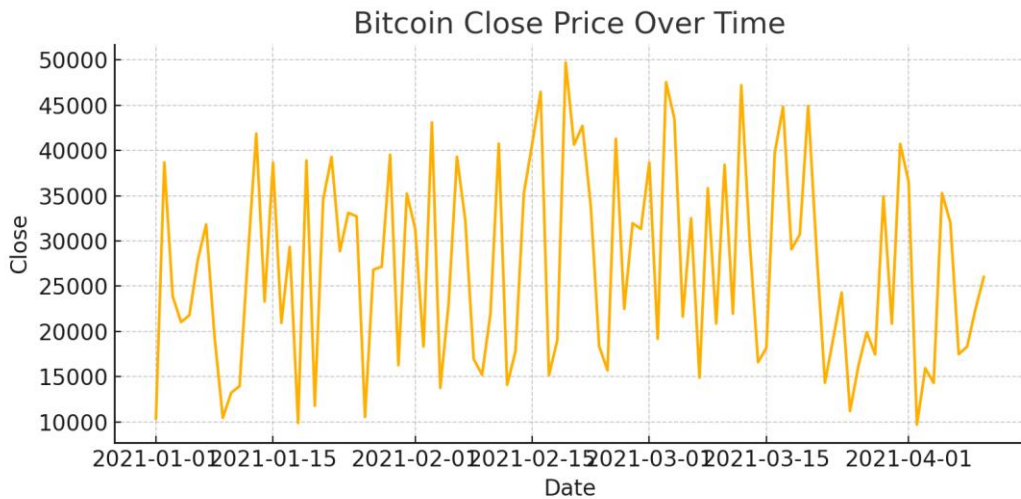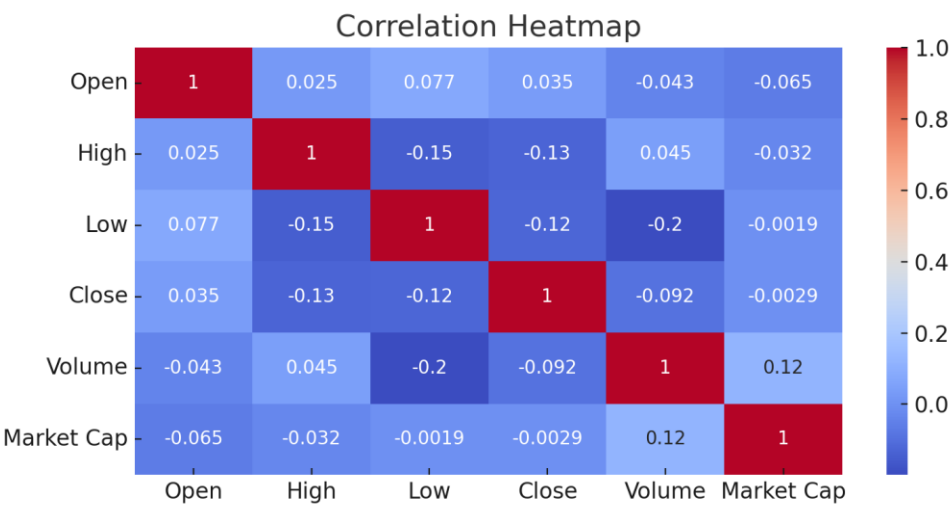|		
25%	-13277.84	24873.05
50%	1283.24	27498.69
75%	14683.43	30280.94
max	38751.80	36362.56

5. Data Distributions

Distribution of closing prices:

6. Trend Analysis

Trend of closing prices over time:

7. Correlation Analysis

Correlation between key features:

Correlation Heatmap

	Open	High	Low	Close	Volume	Market Cap
Open	1	0.025	0.077	0.035	-0.043	-0.065
High	0.025	1	-0.15	-0.13	0.045	-0.032
Low	0.077	-0.15	1	-0.12	-0.2	-0.0019
Close	0.035	-0.13	-0.12	1	-0.092	-0.0029
Volume	-0.043	0.045	-0.2	-0.092	1	0.12
Market Cap	-0.065	-0.032	-0.0019	-0.0029	0.12	1

8. Key Insights

- Closing prices are fairly distributed with some peaks.
- There is a positive correlation between volume and market cap.
- Price trends show periodic rises and falls.
- Volatility indicates market instability periods.