



# -BITCOIN-

AN ANALYSIS OF THE FIRST CRYPTOCURRENCY

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# WHAT IS BITCOIN / CRYPTOCURRENCY?

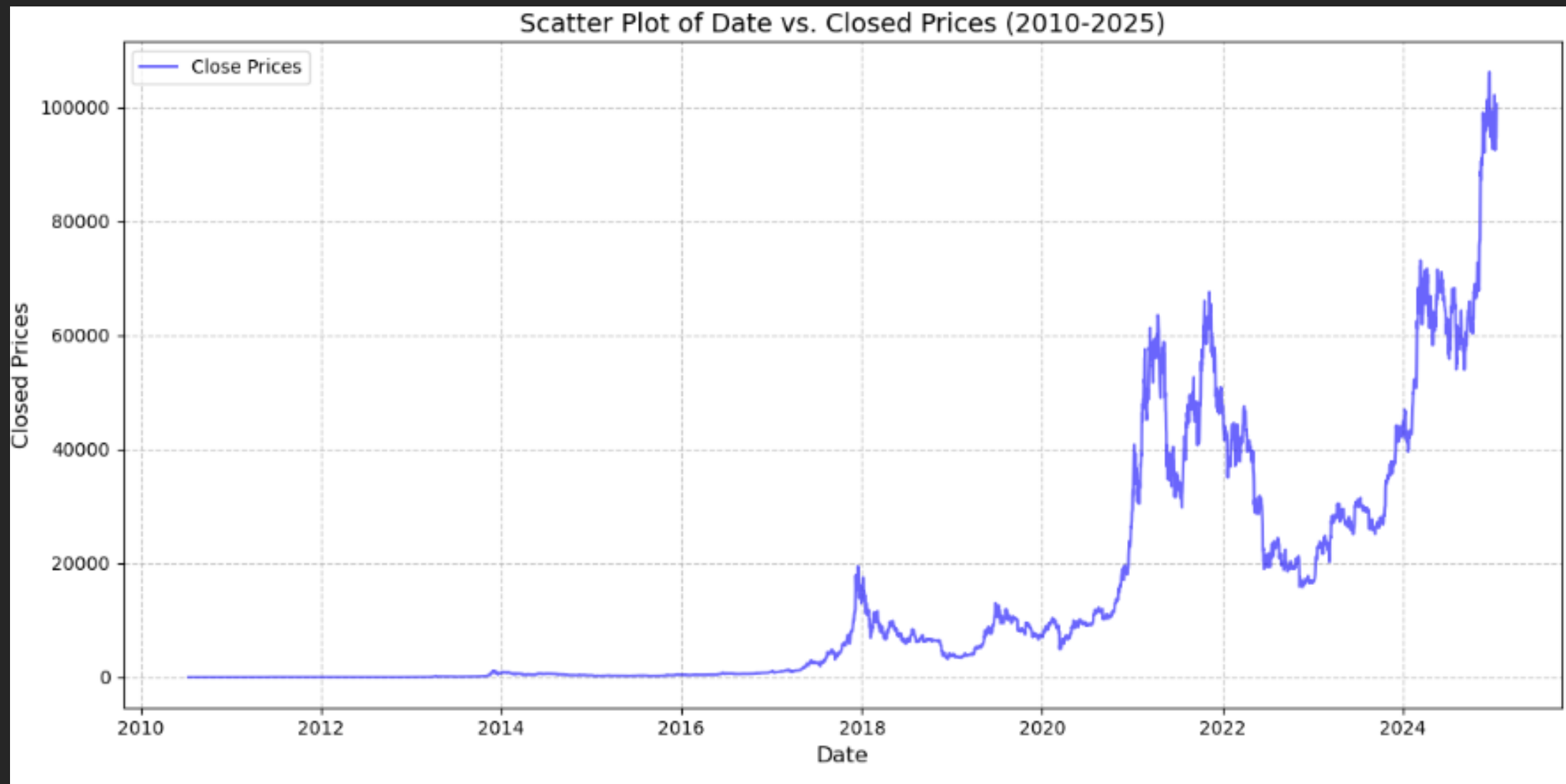
- Cryptocurrency is a digital currency that uses cryptography to allow secure transactions without a bank or central government.
- Cryptocurrency has many different variations, but bitcoin was the first and is the most popular / well-known.
- Bitcoin can be used as a payment option or as an alternative investment

## How long has bitcoin been around?

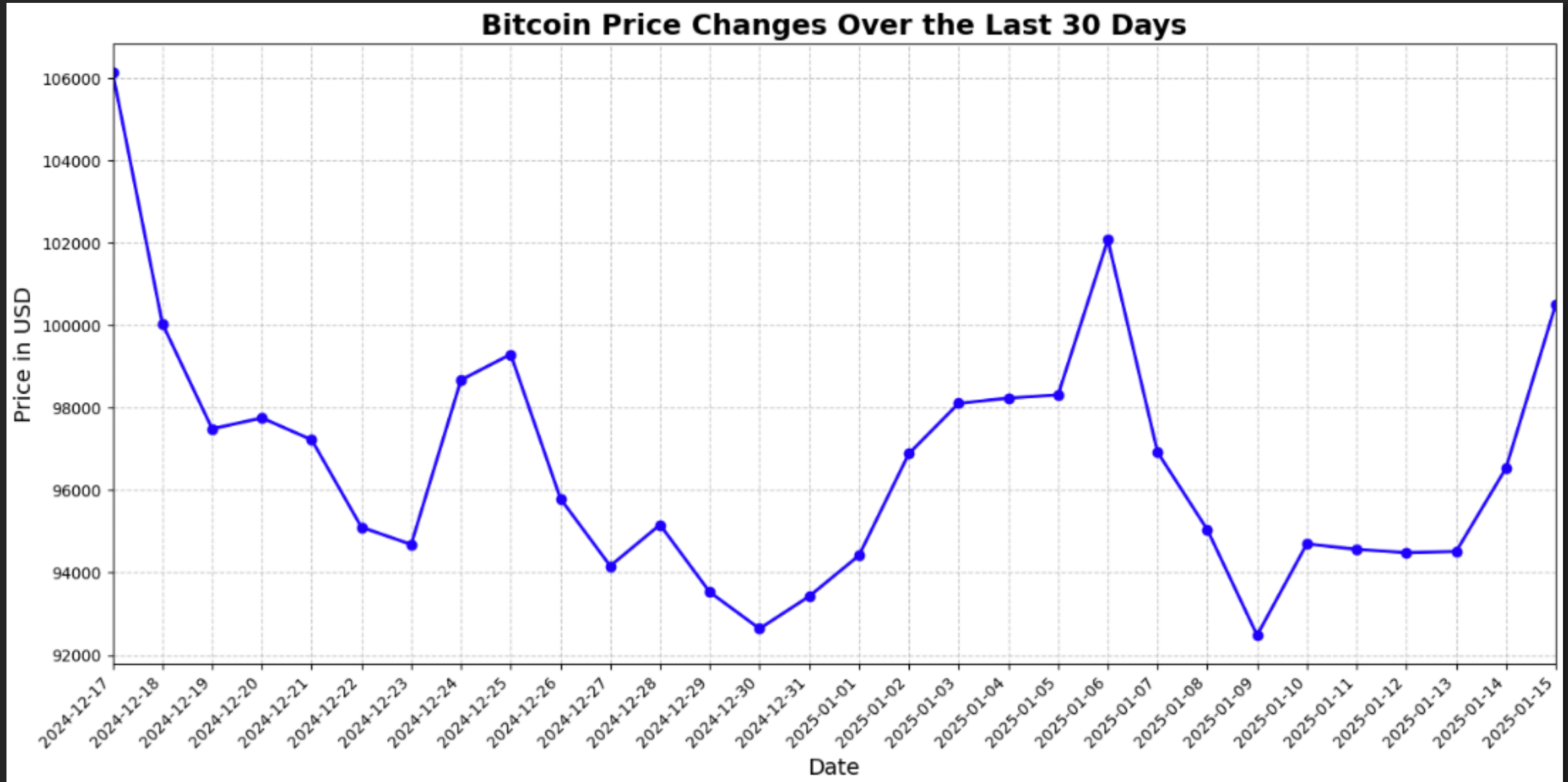
- Being invented in 2008 by Satoshi Nakamoto, the use of bitcoin as cryptocurrency began a year later in January of 2009.



# OVERALL BITCOIN PRICING



# HOW HAS BITCOIN PERFORMED IN THE MOST RECENT LAST 30 DAYS?

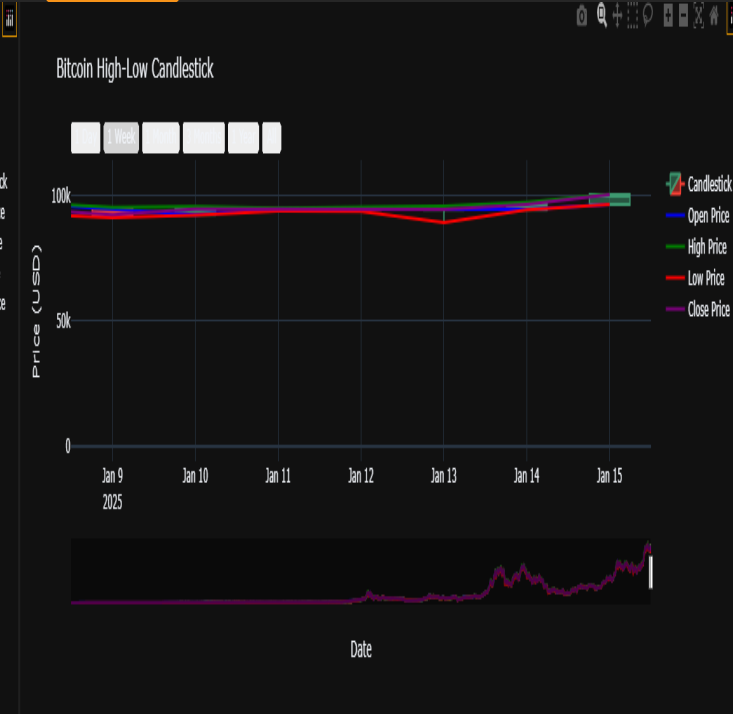
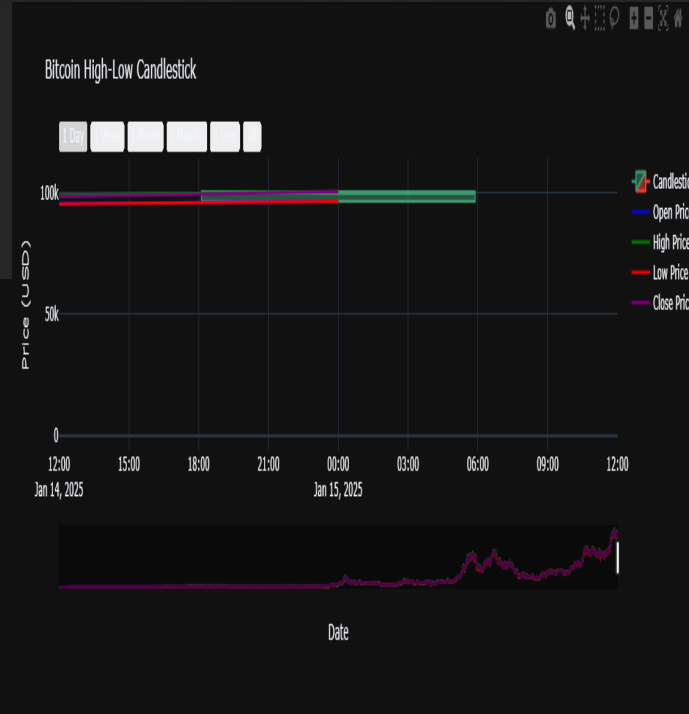


# CHANGE IN PRICE OVER YEARS



This graph visualizes the historical performance of Bitcoin over time. The candlestick shows periodic price movements including: open price, high price, low price, and close price.

Bitcoin High-Low Candlestick



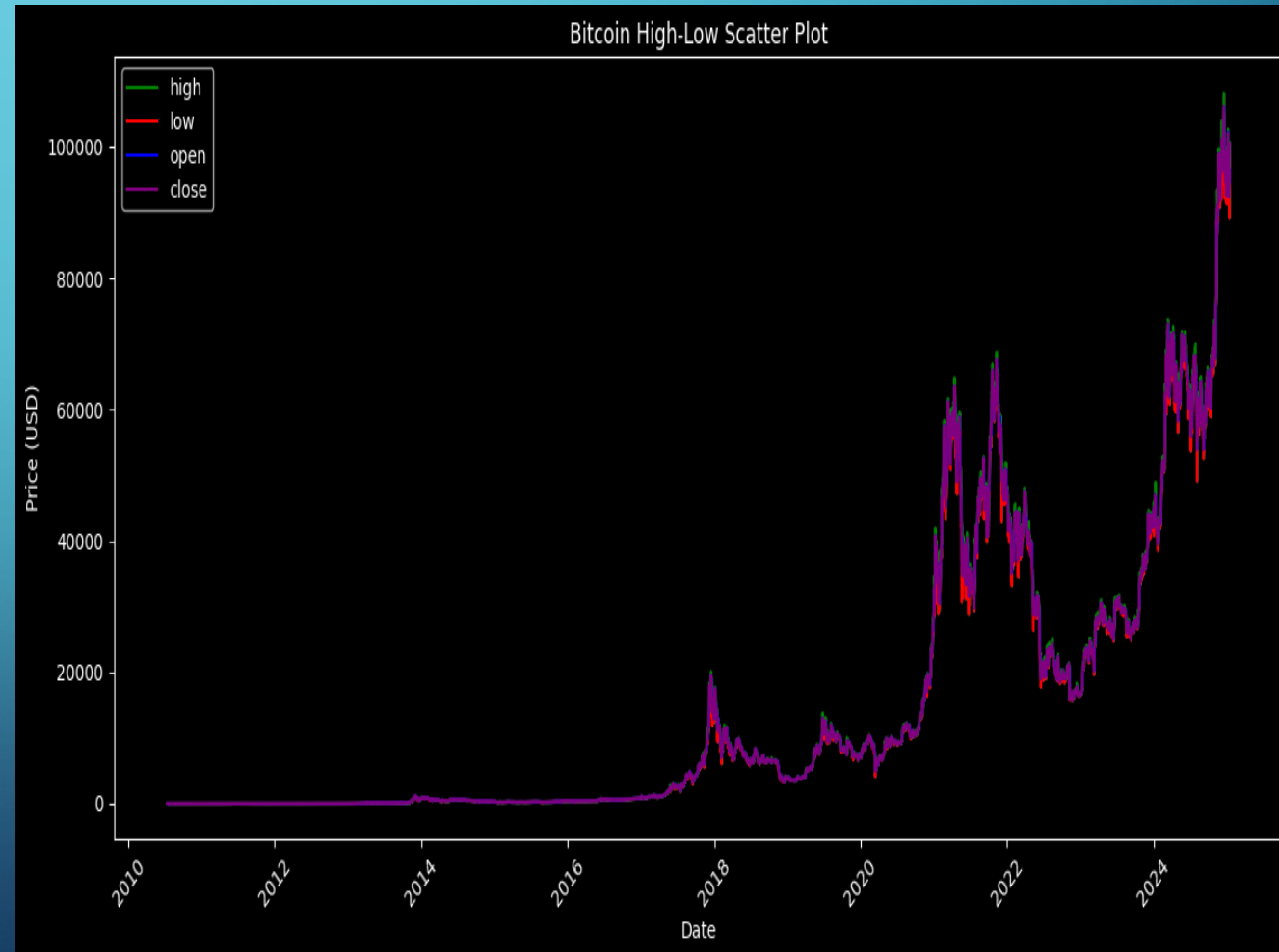
- Displays significant price growth and volatility
- Both 2021 and 2024 have notable peaks
- Candlestick body shows open and close prices, while the shadows represent high and low prices
- Green/white filled = close price > open price indicating bullish trend (sustained upward movement over time/asset is in growth phase)
- Red/black filled = close price < open price indicating bearish trend (sustained downward movement over time/asset is in declining phase)



# HIGH-LOW LINE GRAPH (MAX PRICE)

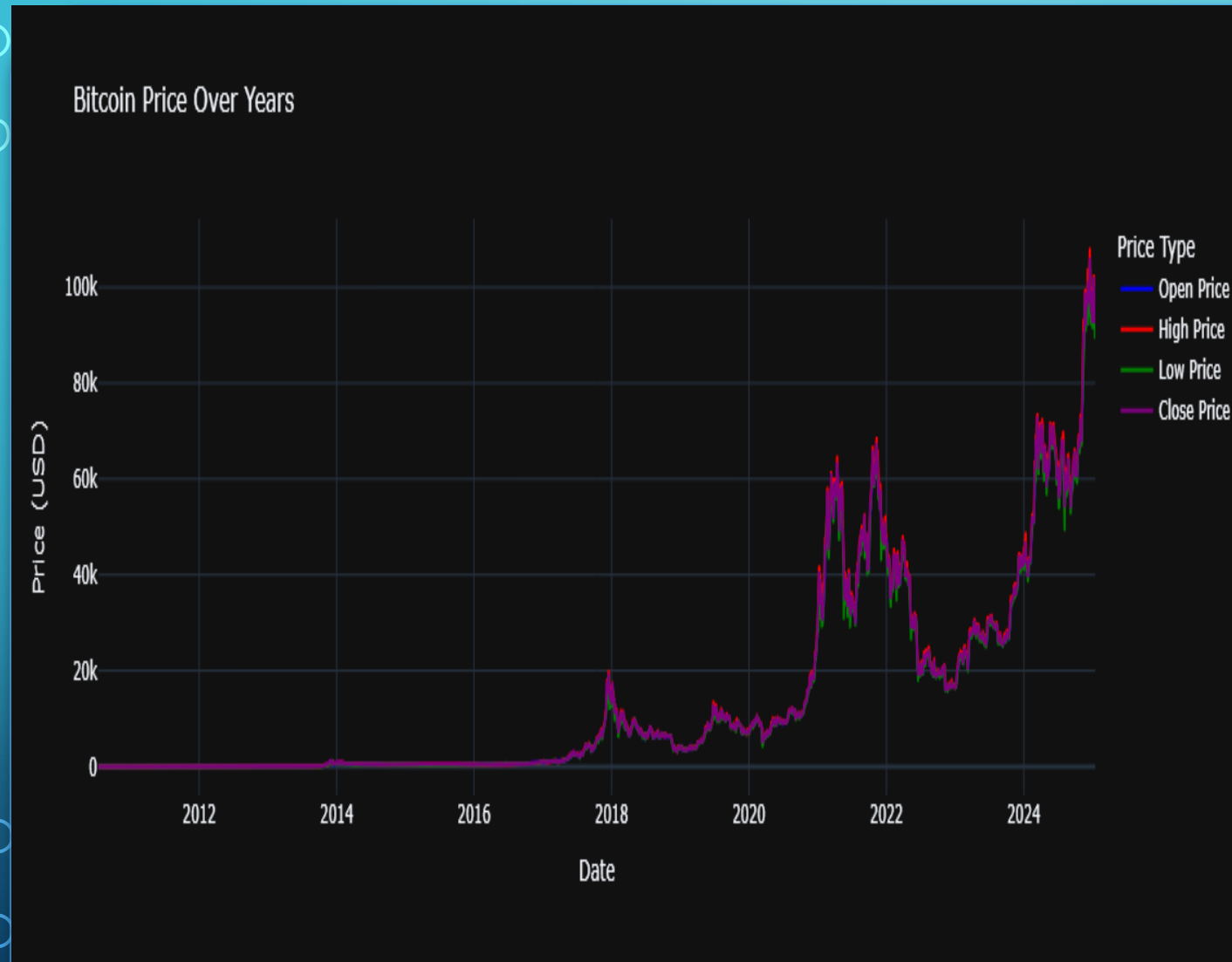
- Remained relatively flat before 2017
- Max price = \$108.29k
- Experienced major spikes in 2017, 2021, and 2024 which indicate significant bull runs (periods of rapid upward movement in the price)
- 2017 bull run = Bitcoin surged from under \$1000 to roughly \$20,000 fueled by media adoption
- 2021 bull run = Bitcoin > \$60,000
- Unlike candlestick, this overlays multiple price metrics directly. They both show similar historical trends while differing in how they are shown

This graph visualizes the historical price movements of Bitcoin over time showing max price, min price at each interval, and each of those prices throughout the entirety of Bitcoin's existence



# INTERACTIVE LINE CHART

- Identical to the high-low scatter plot but this is interactive
- Can hover over any point in graph to see each price type giving the time period and exact price
- 2012-2016 = low and stable Bitcoin prices
- 2017, 2021 & 2024 = price spikes correlating with bull markets
- High volatility reflected by gap between high and low prices during rapid market movements



# BITCOIN DASHBOARD

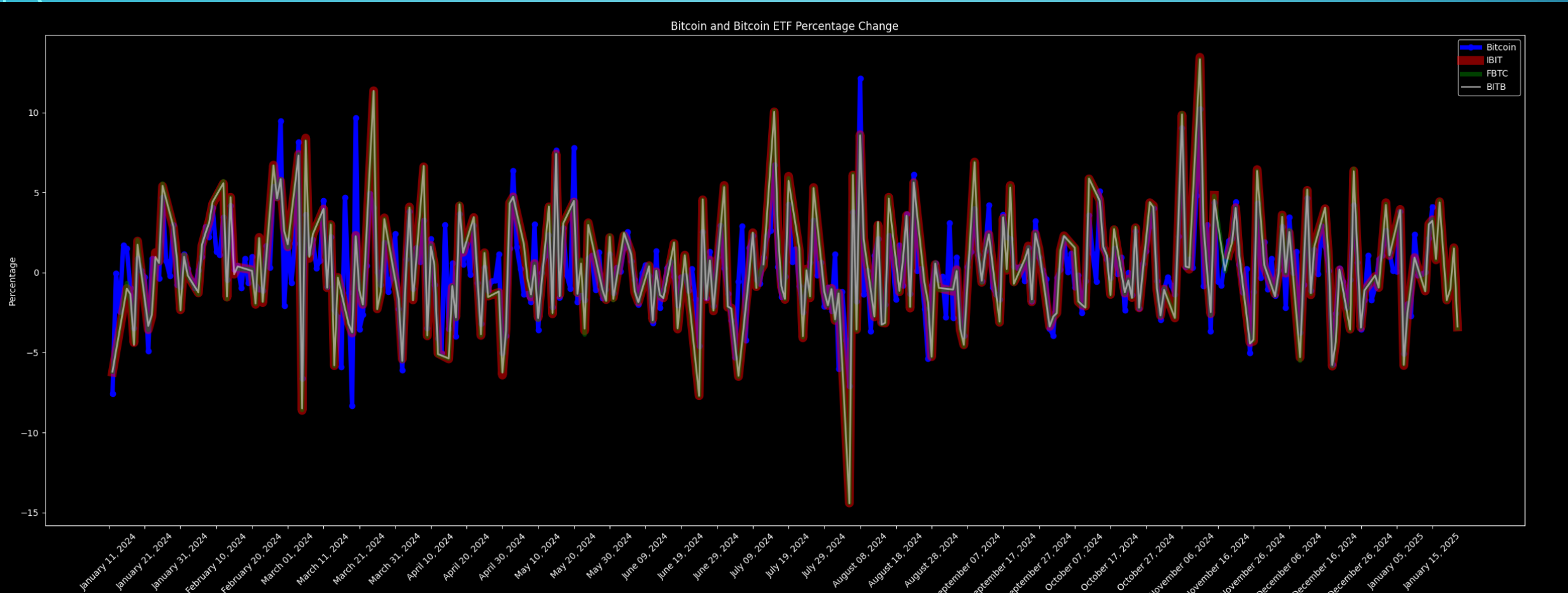


- Dashboard consists of 3 charts: price over time, heat map of dollar change vs. percentage change, and Google Trends map of Bitcoin search results.
- Switching the time units from days to months/years simplifies the graph (reduces volatility as there are less points)
- Most notably, Bitcoin had a large increase (100%) of 50k in the past year.
- Nevada has the highest search rating of Bitcoin since Bitcoin's inception.





# BITCOIN VS. BITCOIN ETF VOLATILITY



# Bitcoin Logo Visualization

August 01, 2010  
Price: \$0.06

- GIF created with PIL module in Python.
- Fill of Bitcoin logo dependent on price.
- Max price in data is 100% fill in logo



# Bitcoin and Ethics

## Positives

- Cryptocurrency offers the potential for greater financial inclusion, decentralization, and privacy.
- It can provide an alternative to traditional banking for people in regions of restrictive financial systems.

## Negatives

- Cryptocurrency is associated with illegal activities such as money laundering, tax evasion, and the dark web.
- The volatility and speculative nature of crypto markets creates risks for investors, especially for those who are inexperienced or vulnerable.

LOCAL NEWS

### Scammers turning to unregulated Bitcoin ATMs to steal millions, FBI warns

CBS NEWS  
TEXAS

By Brian New  
Updated on: January 23, 2025 / 9:17 AM CST / CBS Texas



COINTELEGRAPH  
The future of money

### AI-powered romance scams: The new frontier in crypto fraud

Since the start of 2021, more than 46,000 people have reported losing over \$1 billion in crypto to scams. Losses in 2021 were nearly sixty times what they were in 2018.

# Conclusion

- Bitcoin represents a revolutionary shift for the world of finance; However, its ethical implications are complex.
- The visualizations compiled clearly demonstrate Bitcoin's fluctuations.

## Project/Coding Challenges:

- Converting the 'timeOpen' to a useable column  
`df.rename(columns = {'timeOpen': 'timeOpen'}, inplace=True)`

Despite so many challenges, Bitcoin's influence is undeniable. As the world continues to explore its potential, cryptocurrency's development will require regulation, innovation and collaboration to make sure Bitcoin can truly benefit anyone who uses it.

# References

- [1] <https://coinmarketcap.com/currencies/bitcoin/historical-data/>
- [2] <https://www.forbes.com/sites/georgecalhoun/2022/10/11/the-ethics-of-crypto-sorting-out-good-intentions-and-bad-actors/>
- [3] <https://www.cbsnews.com/texas/news/scammers-turning-to-unregulated-bitcoin-atms-to-steal-millions/>
- [4] <https://www.tradingview.com/news/cointelegraph:653ebe49e094b:0-ai-powered-romance-scams-the-new-frontier-in-crypto-fraud/>