**Objective**

The primary goal of this file was to calculate two critical financial metrics for Bitcoin: **Daily Return %** and **Volatility %**. These values were calculated to understand Bitcoin's market behavior during 2024–2025 and to support the development of a comprehensive Power BI dashboard. These metrics provide meaningful insights into market stability, trends, and anomalies in trading behavior.

**Source File**

The calculations were executed in the Excel file titled: VolatilityReturnCalculations(Preprocessing).xlsx

This file contained raw daily Bitcoin market data with the following fields:

* Date
* Open Price
* Close Price
* High and Low Values
* Volume

Each row in the dataset represents a unique trading day for Bitcoin across the 2024–2025 period.

**Calculations Performed**

**1. Daily Return %**

**Formula Used:**

=(Close - Open) / Open \* 100

* Indicates how much the price changed during the trading day.
* Positive values represent a Bullish day; negative values represent a Bearish day.
* A new column, Daily Return %, was created using this formula.

**2. Volatility %**

**Formula Used:**

=(High - Low) / Open \* 100

* Measures the price fluctuation range in a single trading day.
* Helps identify the magnitude of intraday movements.
* A new column, Volatility %, was created in the Excel file to capture this.

**Additional Enhancements**

**3. Trend Flagging**

A new column Trend was created with the following logic:

* If Daily Return % > 0, Trend = **Bullish**
* If Daily Return % < 0, Trend = **Bearish**

This classification was later used for segmenting records and visualizing market momentum in Power BI charts such as pie charts, bar graphs, and slicers.

**4. Volume Spike Flag**

A Volume Spike Flag column was introduced manually by comparing the volume of a day with surrounding days. If the volume significantly deviated (spiked), it was labeled Spike, else Normal. This helped identify days with exceptional trading activity.

**Purpose of Calculations**

The newly derived columns enabled:

* Advanced filtering and dynamic slicers in Power BI
* More accurate segmenting of data for visual storytelling
* PivotTable summaries based on trends and spikes
* Drill-down analysis by year, month, trend, and volatility level

**Outcome**

Following the calculations:

* The data was saved and linked with the PivotTable summary sheet.
* The enriched dataset was then imported into Power BI.
* These calculations formed the foundation for several key insights, including:
  1. Monthly and yearly performance trends
  2. Correlation between volatility and return
  3. Trend distribution (Bullish vs Bearish)
  4. Impact of volume spikes on price returns