**Crypto APIs and Market Indicators**

* **What is Cryptocurrency?**

Cryptocurrency is a type of **digital or virtual money** that uses cryptography for security. Unlike traditional money issued by governments (like rupees or dollars), cryptocurrencies are **decentralized**—meaning they are not controlled by any central authority like a bank or government.

The most well-known cryptocurrency is **Bitcoin**, created in 2009. Since then, many others have been created, such as **Ethereum, Binance Coin, Solana, and Dogecoin**.

* **How Does It Work?**

Cryptocurrencies run on a technology called **blockchain**—a digital ledger that records all transactions across a network of computers. Each transaction is verified and added to the blockchain, making it **secure, transparent, and permanent**.

* The crypto market has **grown rapidly** over the past decade. Bitcoin started with almost no value, but now it's worth **tens of thousands of dollars**.
* Cryptocurrency prices **change very quickly**, which means there's a high risk—but also a high chance of a reward. This **volatility** makes crypto attractive for traders but risky for beginners.

**MARKET INDICATORS:**

Market indicators are tools used to **analyze cryptocurrency price movements**, trading volume, volatility, and investor sentiment. They help traders make smarter decisions by identifying market trends and potential entry/exit points.

**1. Price-Based Indicators**

* **Moving Averages (MA)**: Show average price over time; help identify uptrends/downtrends.
* **RSI (Relative Strength Index)**: Ranges from 0–100; >70 = overbought, <30 = oversold.
* **MACD**: Tracks momentum using two moving averages; shows buy/sell signals.

**2. Volume-Based Indicators**

* **OBV (On-Balance Volume)**: Combines price and volume to show buying/selling pressure.
* **Volume Oscillator**: Measures volume strength to indicate rising or falling interest.

**3. Volatility Indicators**

* **Bollinger Bands**: Wide bands = high volatility; narrow bands = low volatility.
* **ATR (Average True Range)**: Measures how much price moves; higher ATR = higher risk.

**4. Sentiment Indicators**

* **Fear & Greed Index**: Ranges from 0 (fear) to 100 (greed); gauges market emotion.
* **Social Media Trends**: Tracks hype across platforms; spikes may signal breakouts.

**There are many more indicators than the above stated.We Use Indicators because** They help in

* Understanding market trends
* Reducing emotional trading
* Improving timing of trades

To pull crypto data we are going to use API of some websites which can provide access to real-time and past crypto data. Some of them are

**yfinance** (Yahoo Finance Python Library) : Free Python package to access financial data, including some major cryptocurrencies

Binance API for real-time market data.

CoinMarketCap API, CoinGecko API, CoinDesk

Refrences:

1. <https://www.kraken.com/learn/crypto-technical-indicators>
2. <https://www.tokenmetrics.com/blog/best-indicators-for-crypto-trading-and-analysis>
3. <https://coinmarketcap.com/charts/cmc100/>
4. <https://www.gemini.com/cryptopedia/crypto-indicators-token-metrics-crypto-fear-and-greed-index>
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