

Crypto Volatility and Risk Analyzer

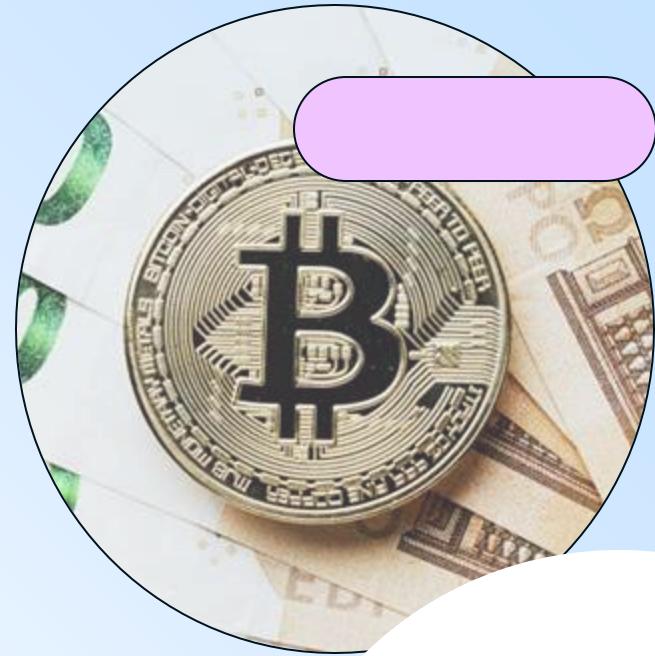
Milestone 2

- **Infosys Springboard Virtual Internship 6.0**

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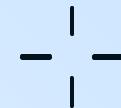
Project Overview

- Cryptocurrency markets are highly volatile and risky
 - Investors find it difficult to understand price movements and risk
 - **This project analyzes historical crypto data to:**
 - Measure volatility
 - Generate risk scores
 - Visualize trends clearly
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- **Current Status:**
Data-driven backend implemented (50%)

Data Collection

Data Source

- CoinGecko API (trusted & real-time capable)

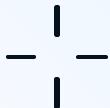


Historical price data for:

- BTC, ETH, BNB, SOL, XRP

Why CoinGecko?

- Free
- Reliable
- Supports future live data integration



Data Cleaning & Preprocessing

Steps Performed

- Converted timestamps to date format
- Removed missing and invalid entries
- Calculated daily returns
- Stored clean datasets as CSV files

Output

- Cleaned datasets ready for analysis
- Consistent structure across all cryptocurrencies



Data Analysis & Market Trends

Analysis Performed

1. Price trend analysis
2. Daily price movement observation
3. Identification of spikes and drops

Outcome

1. Helps understand historical market behavior
2. Foundation for volatility and risk analysis

Volatility Calculation



What is Volatility?

- Measure of price fluctuations over time
Indicates market uncertainty

Techniques Used

- Daily returns
- Standard deviation of returns
- Rolling volatility

Why Important?

- Higher volatility → higher investment risk

Risk Scoring & Classification

Risk Scoring Logic

- Volatility converted into risk score (0-100)

Categorized as:

- Low Risk
- Medium Risk
- High Risk

Risk Output

- Individual risk summary per coin
- Combined comparison table across all coins

Data Visualization

Visuals Implemented

1. Price trend plots for each cryptocurrency
2. Color-coded graphs for easy understanding
3. Risk comparison bar chart across coins

Purpose

1. Make complex data user-friendly
2. Support informed decision-making

Current Progress (50%)

1. Data collection via API
2. Data cleaning & preprocessing
3. Volatility computation
4. Risk scoring & comparison
5. Graphical visualizations



Future Scope

- Interactive User Interface (Streamlit dashboard)
- Live price tracking
- User-friendly investment insights
- Personalized risk recommendations



Thankyou!

