

CRYPTO VOLATILITY AND RISK ANALYZER

Flask & Streamlit Based

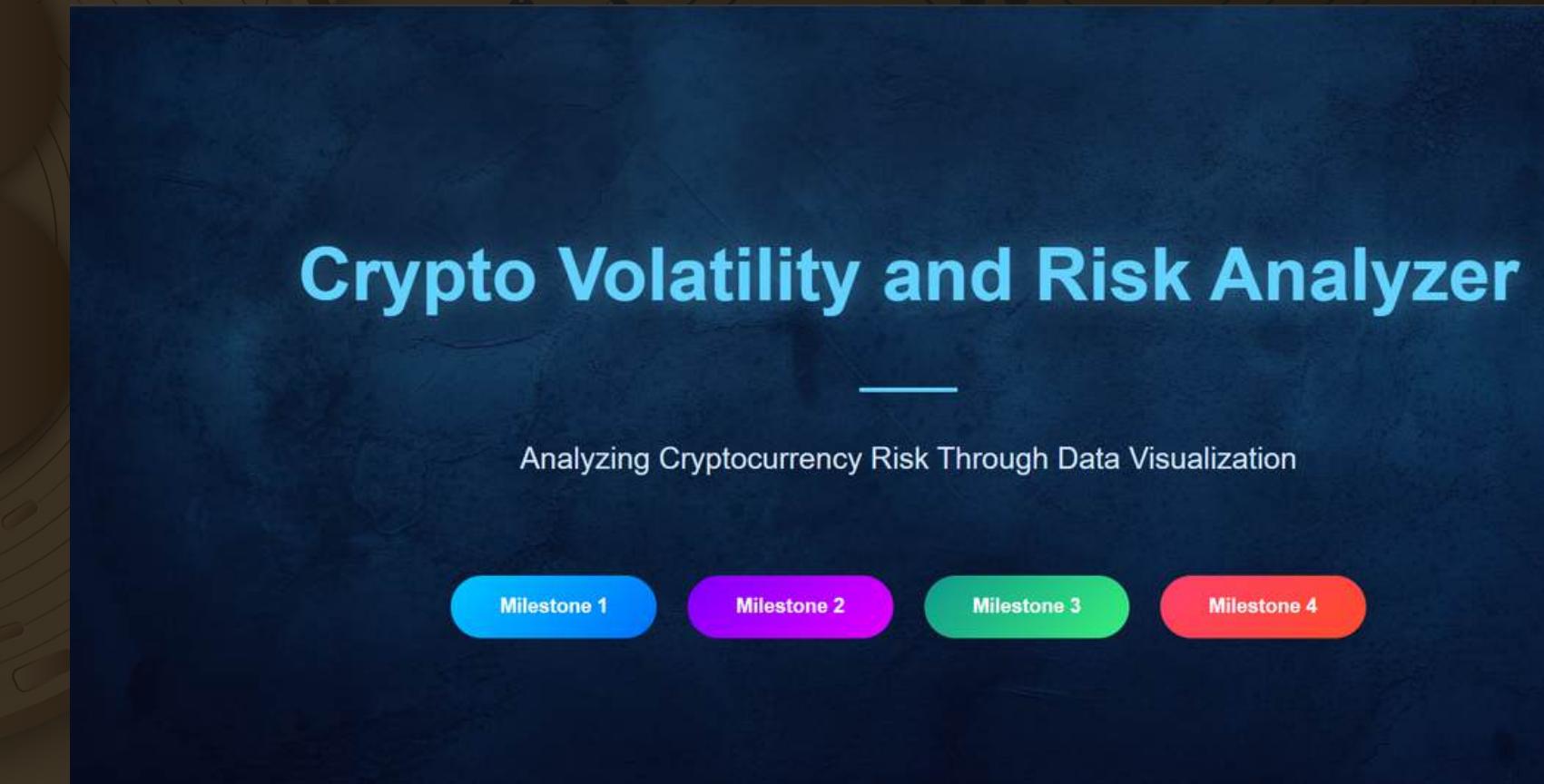
Project

Team -B

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INTRODUCTION

- Cryptocurrency markets are highly dynamic and volatile
- Prices fluctuate rapidly due to market demand and global events
- Investors require analytical tools to understand risk
- This project focuses on analyzing crypto risk using data visualization



PROBLEM STATEMENT

- Cryptocurrency investments involve high uncertainty
- Manual analysis of crypto risk is complex and time-consuming
- Lack of simple dashboards for risk and volatility analysis
- Need for an interactive and visual risk analysis system



OBJECTIVES



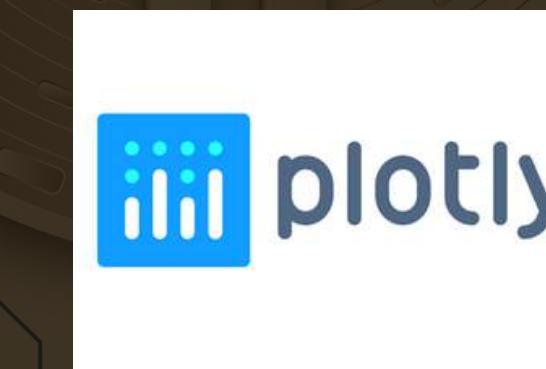
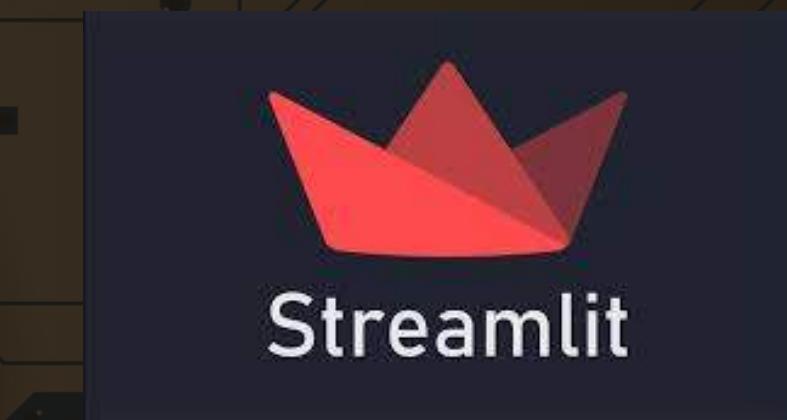
- To collect real-time and historical cryptocurrency data
- To analyze price volatility and returns
- To visualize risk metrics using charts and dashboards
- To classify cryptocurrencies based on risk levels

SCOPE OF THE PROJECT

- Analysis limited to major cryptocurrencies (BTC, ETH, etc.)
- Focus on short-term and long-term volatility
- Academic and learning-based implementation
- Can be extended for real-world investment analysis



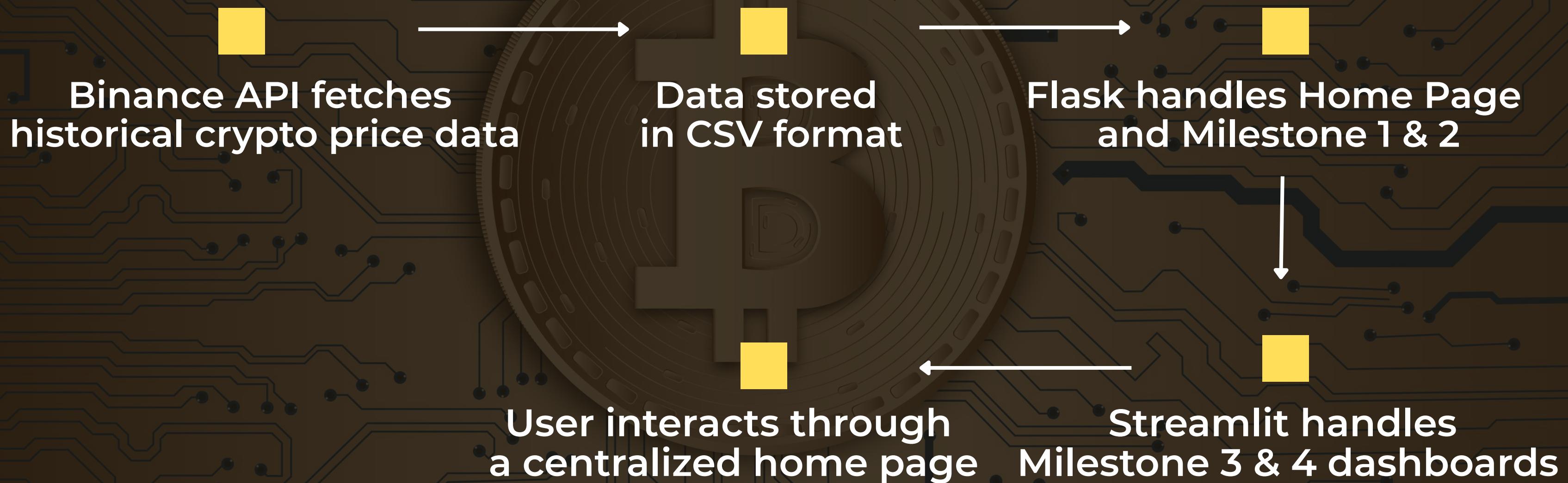
TECHNOLOGIES USED



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SYSTEM ARCHITECTURE

Slide 7



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MILESTONE 1 - DATA ACQUISITION

- Fetches live and historical crypto prices
- Uses Binance API for reliable data
- Displays live price table
 - Shows 7-day price trend using line chart



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MILESTONE 2 - DATA ANALYSIS

- Calculates volatility of cryptocurrencies
- Computes Sharpe Ratio and Beta values
- Compares risk metrics using bar charts
- Helps understand risk level of each asset



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Milestone 3- Interactive Dashboard

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- Built using Streamlit
- Displays price trends and volatility trends
- Risk-return scatter plot visualization
- User can filter cryptocurrencies and time range



Milestone 4 - Risk Classification

- Classifies cryptocurrencies into:
 - Low Risk
 - Medium Risk
 - High Risk
- Classification based on volatility thresholds
- Displays risk distribution using pie chart



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Reports & Outputs

- Generates downloadable CSV risk report
- Displays summary of average volatility and returns
- Provides visual and numerical insights
- Helps in quick decision-making

Future Scope

- Add more cryptocurrencies
- Implement machine learning for price prediction
- Enable real-time auto-refresh dashboards
- Add user login and authentication
- Deploy project on cloud platform



Conclusion

- Developed a complete crypto risk analysis system
- Provides interactive dashboards and reports
- Simplifies understanding of crypto volatility
- Useful for academic learning and practical analysis

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THANK YOU!