CRYPTOFORECAST

Introduction
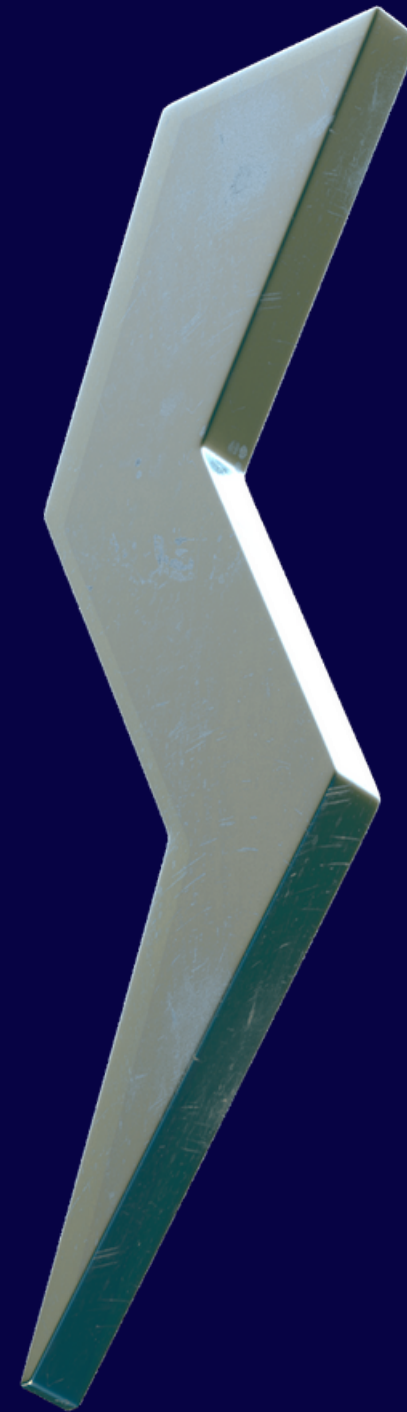
Technology Used

Flutter django Microsoft Azure

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Difficulties in investing in cryptocurrency?

Currently as there are many budding and booming cryptocurrencies many times investors get appalled by the trends and invest haphazardly.

Why Crypto Forecast?

- Crypto Forecast is an App Developed using Flutter Framework where Users can get all the Live Information of Crypto Currencies like Bitcoin, Ethereum, Dogecoin etc.

- User's will get to see Future Price Predictions of top cryptocurrencies so that they can make their investments keeping in mind the current state of the market and not invest their Hard earn money due to Fear of Missing Out.

- As the Market is quite Volatile in cryptocurrency our Portal will help retail investors make better Decisions regarding their Investment.

- We provide them with Real Time Charts, Real Time Prices, Real Time News and Real Time Analytics using Deep Learning Models like Future Forecasting, Fear Index and Sentiment Analysis of Current market based on Social Media Posts

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App Overview & Architecture

- We have Developed this App using Flutter Framework by Google. We have created a responsive mobile application that doesn't pixel out on various mobiles of different densities and resolutions. We have Implement Key Features like Searching, Business Logic (Bloc), API calls, error handling, dependency injection, Creating Charts and Running Real Time Jobs to get Real Time Data Continuously.

- The Clean Architecture is the most powerful solution for building clean apps that multiple teams can work on, independent data layers, scalable for adding/removing features, testable, independent frameworks/tools, and can be easily maintained at any time. It reduced unorganised code by 60%.

Flutter Clean Architecture
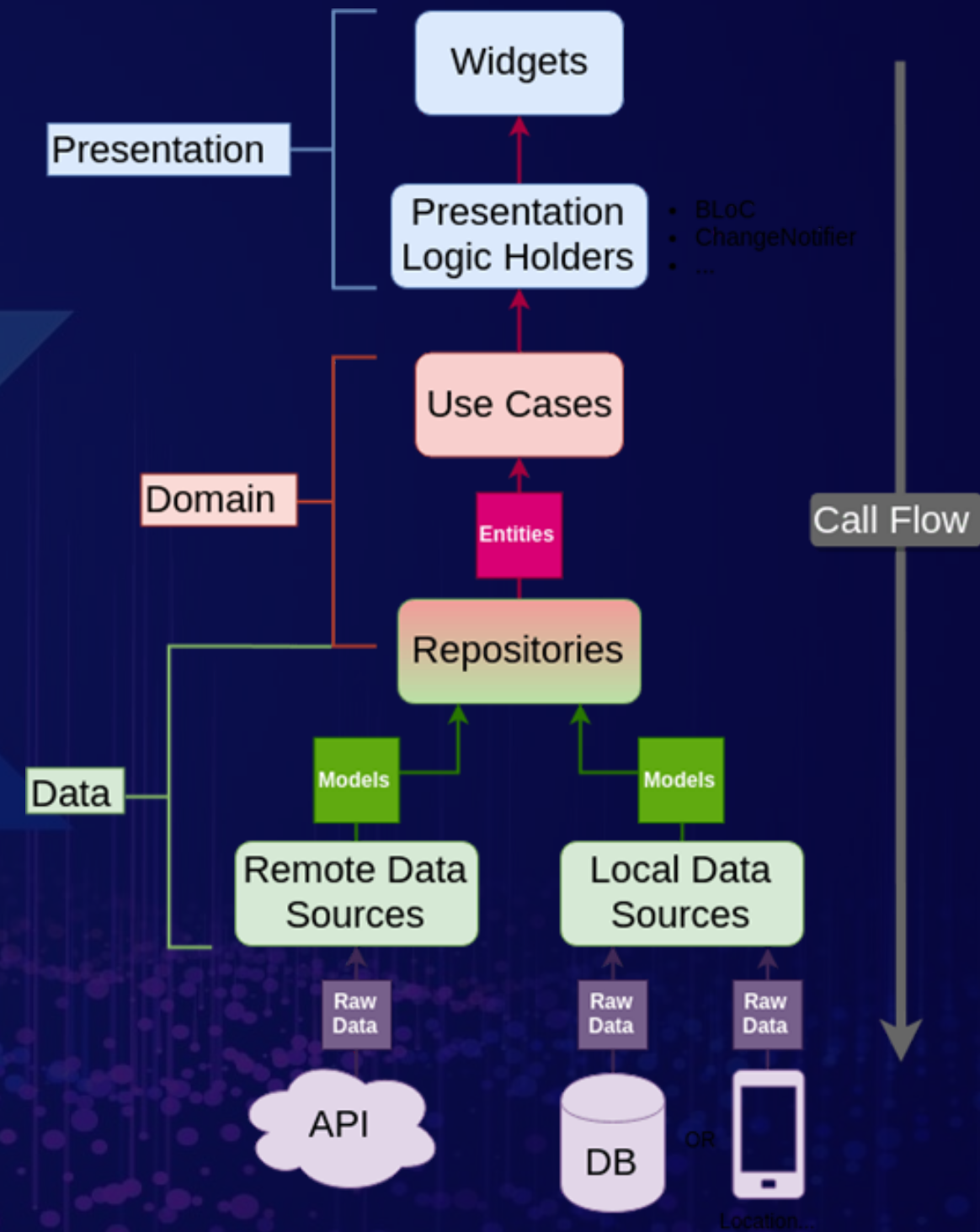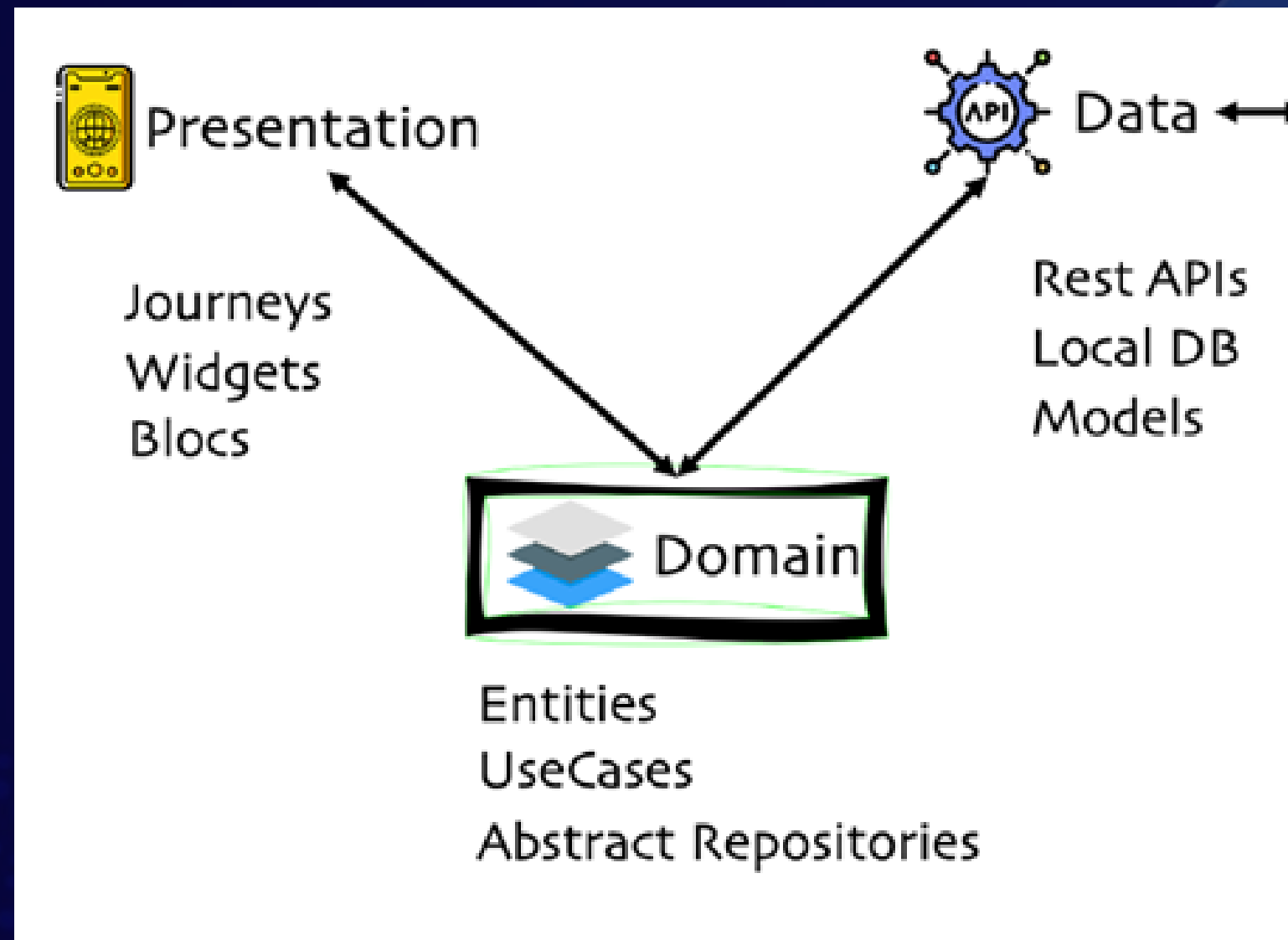
BackEnd Architecture and Twitter Sentiment Analaysis

- In Backend we have used Django Rest Framework for development of the REST APIs and developed the database in PostgreSQL, the Rest API endpoints include the APIs for getting sentiment details and prediction details. In Django, we deployed the prediction model and created a rest API to retrieve prediction details.

- For the deployment of the whole project we have used Microsoft Azure, under the students pack.

Tweets Sentiment analysis

- For getting tweets we have used twitter developer API
- Top 500 tweets ,that have particular cryptocurrency name in it ,is retrieved from api in single call.
- For sentiment analysis we have used Text blob.
- Sentiment Data is then stored in azure postgress database.

Cloud Architecture

- For Deployment of this whole project we have used Microsoft Azure, under the students pack.
- The Code is deployed in Microsoft azure as follow:
- 1. We have created a resource group in central India in azure.
- 2. Under this resource group we have created an App service We have used this App service to deploy our Django Backend and host it live on the internet.
- 3. Additionally, we have created an Azure Database for PostgreSQL and code is deployed using GitHub repository
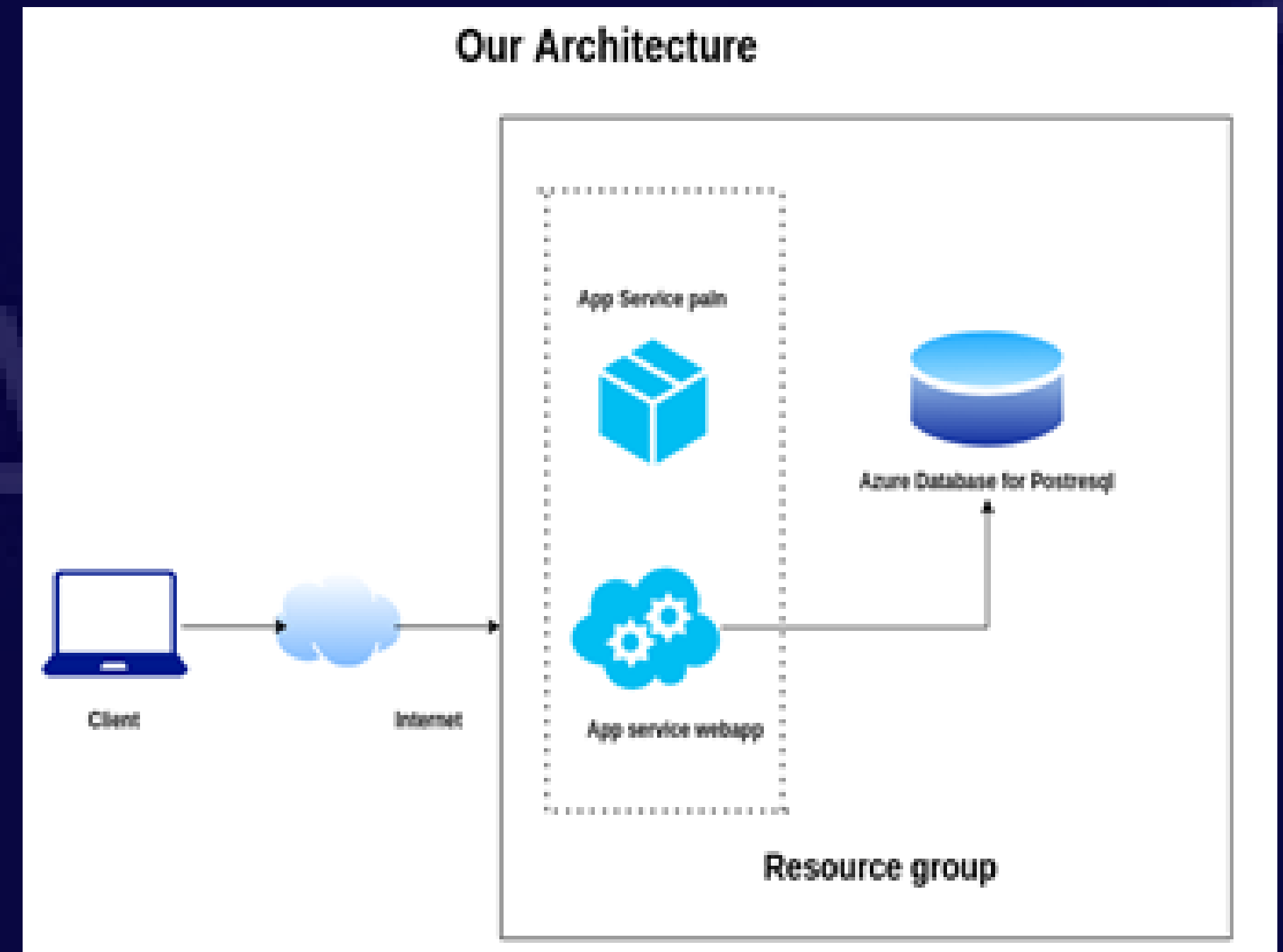
Our Architecture

Forecasting Deep Learning model using LSTM

- LSTM (Long Short-Term Memory) is a Recurrent Neural Network (RNN) based architecture that is widely used in natural language processing and time series forecasting. We have used it to Forecast Future Price of Cryptocurrencies Based on the Historical Data.

- Our Forecasting Model got Excellent Mean Absolute Error of just 0.0287 For 3 Months of Forecasting. Our Model's Mean Square Error is 0.00151.
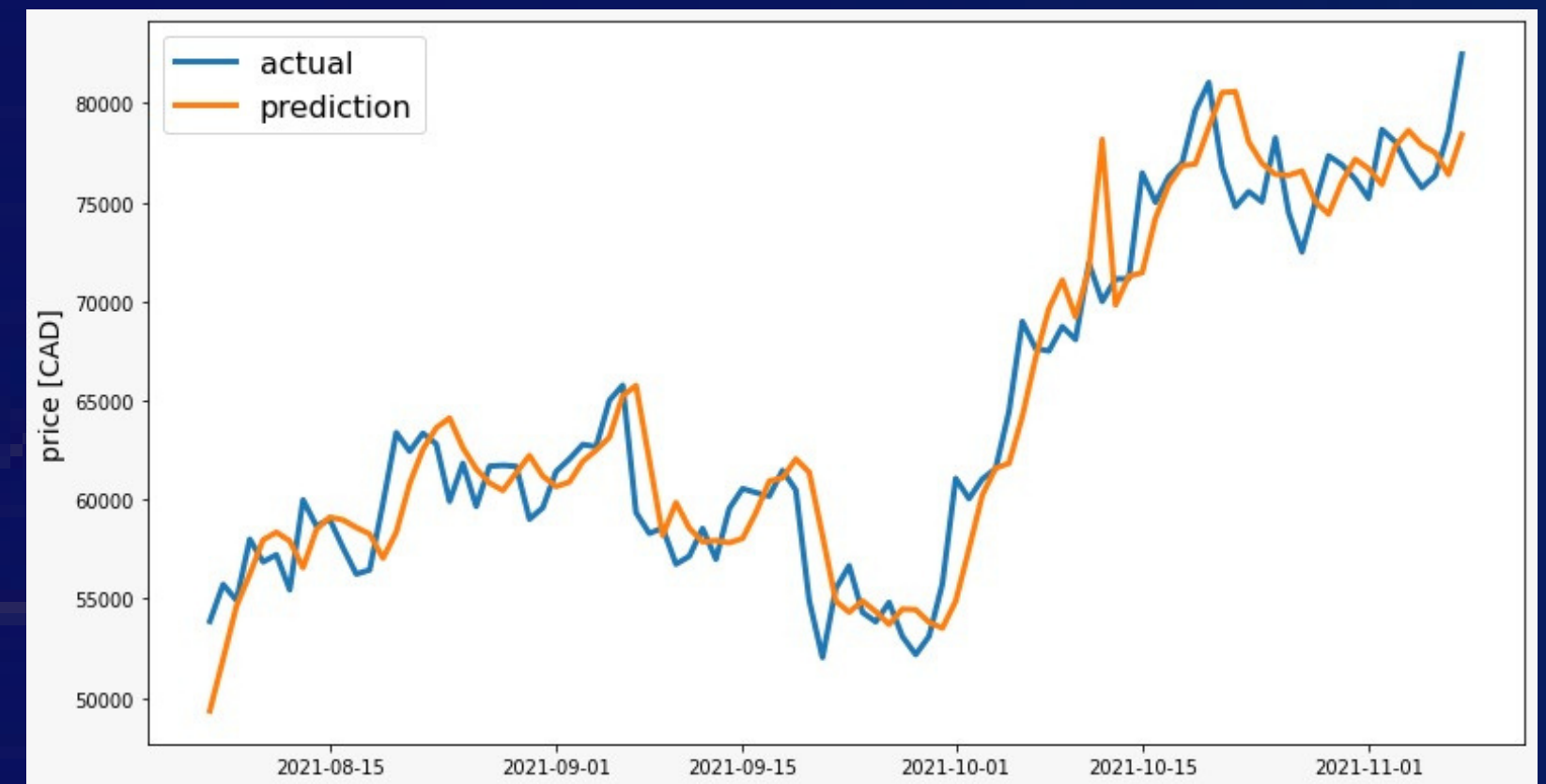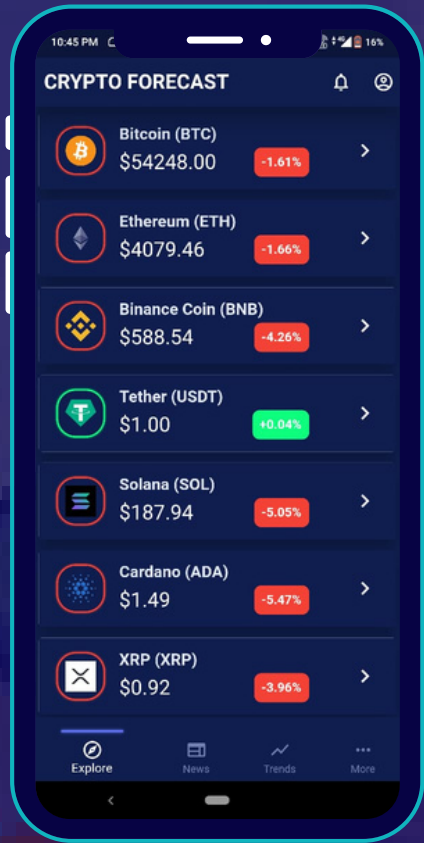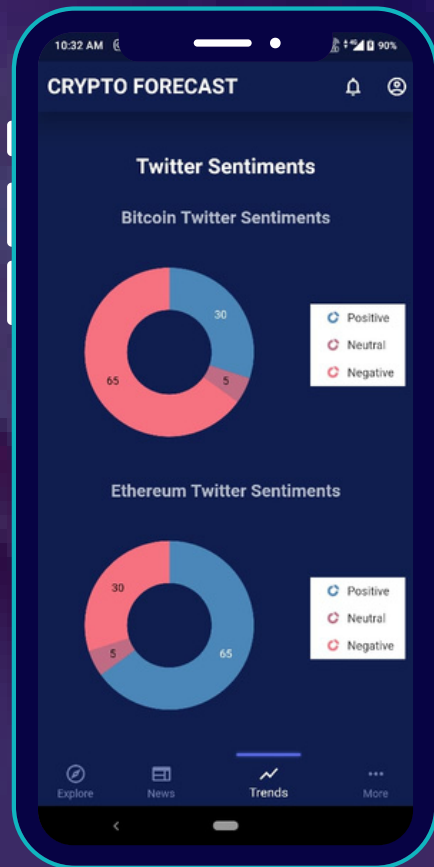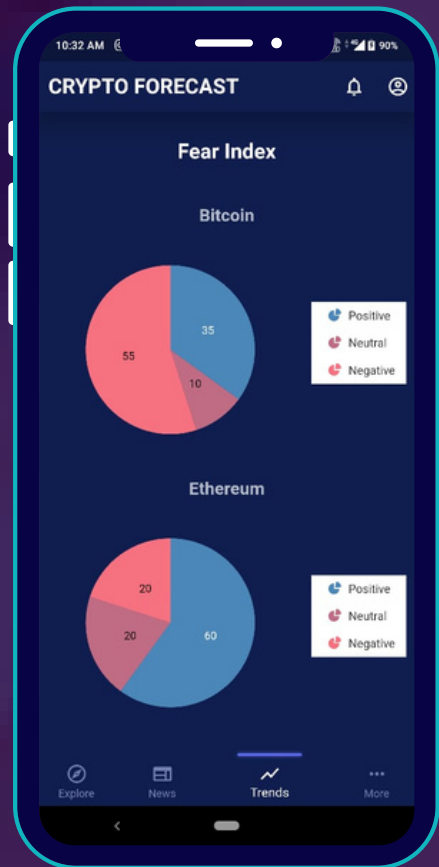

Predicted price vs Actual price

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Bitcoin (BTC) $54248.00	-1.61%	>
Ethereum (ETH) $4079.46	-1.66%	>
Binance Coin (BNB) $588.54	-4.26%	>
Tether (USDT) $1.00	+0.04%	>
Solana (SOL) $187.94	-5.05%	>
Cardano (ADA) $1.49	-5.47%	>
XRP (XRP) $0.92	-3.96%	>

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4

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CandleStick Graph

Predictions and Stats

Next 24h Prediction:	1.17%
Next 7 Days Prediction:	3.04%
Correct time to Buy?:	80%
Market Cap:	1638144000000
Total Volume:	2765946986.73
Last 24h Change:	0.68%

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Twitter Sentiments

Bitcoin Twitter Sentiments

Positive · Neutral · Negative

Ethereum Twitter Sentiments

Positive · Neutral · Negative

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Fear Index

Bitcoin

Positive · Neutral · Negative

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THANK YOU !