STOCK PORTFOLIO SUGGESTION ENGINE

CMPE 285 - SOFTWARE ENGINEERING

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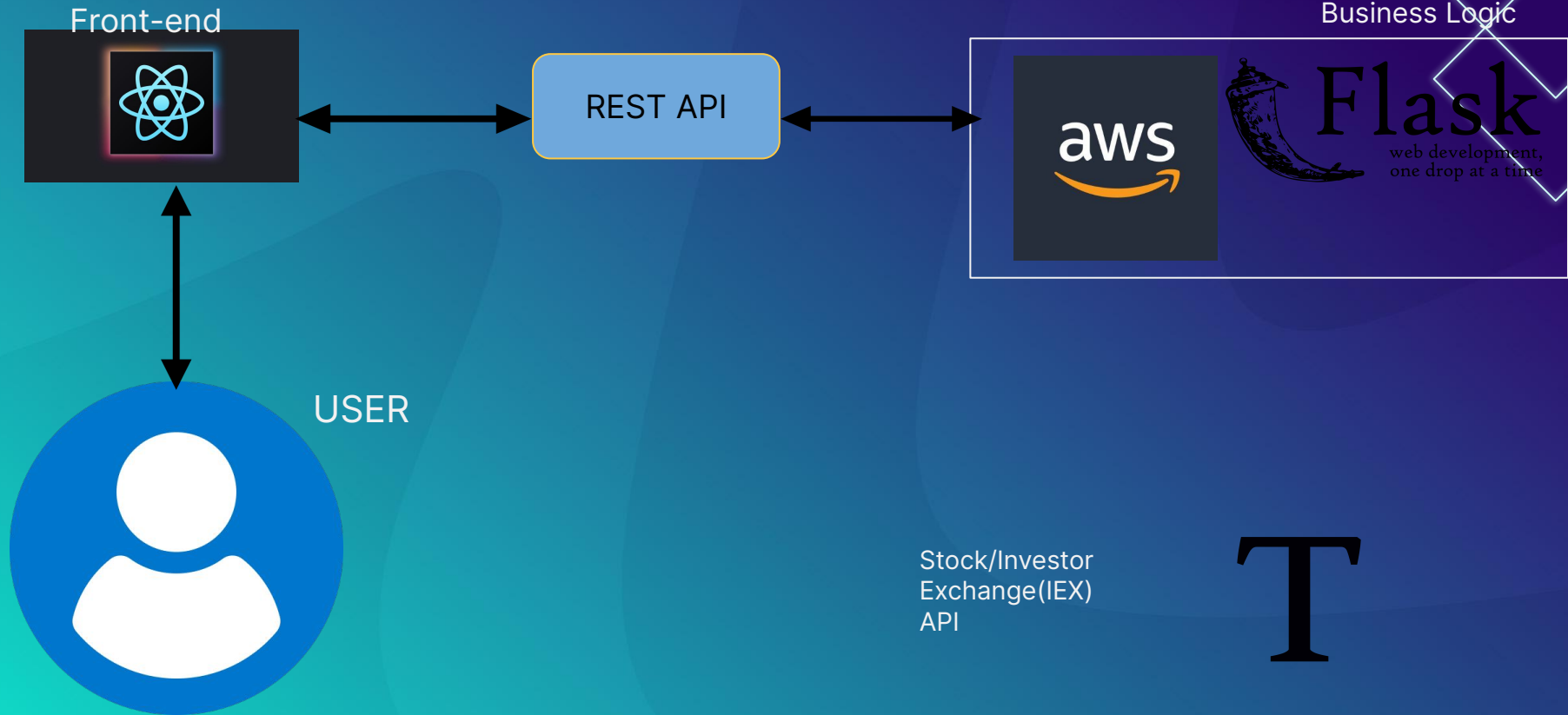
SYSTEM ARCHITECTURE

Front End: Developed using React, a JavaScript library for building user interfaces.

Back End: Written entirely in Python, utilizing Flask, a micro web framework.

Data Source: Real-time stock data is obtained through the IEX API.

Hosting: The entire infrastructure is deployed on Heroku, a cloud application platform.

SYSTEM ARCHITECTURE

Front-end

Business Logic

REST API

USER

Stock/Investor
Exchange(IEX)
API

FEATURES

Suggestions - Suggestions based on the investment strategy

Validation - Inputs checks for investment amount and strategy

Trends - Weekly trends in total portfolio and individual stocks

FEATURES

Security - Ensures secure signup and sign-in functionality

Ticker Updates - Implements a real-time ticker displaying the latest prices

Intuitive Design - Develop an intuitive material design frontend

CHALLENGES

CHALLENGES FACED

- **Understanding the Stock Market:** Gaining a comprehensive understanding of how the stock market functions.

- Developing an Intuitive UI: Creating a user-friendly interface for first-time users.

- Understanding Stock Strategies: Learning about various stock investment strategies like ethical, growth, index, and quality investing.

- Team Collaboration: Working effectively with team members and employing software design practices.

TEST CASES

No.#	Test Case Description	Expected Result	Actual Result	Status
1	Investment **amount entered is 1000$** (less than 5000 $) and presses next button	Application should give error message "Please select a valid amount"	Application displays error message "Please select a valid amount"	✅
2	Investment **amount entered is invalid** text Eg, "string" and presses next button	Application should give error message "Please select a valid amount"	Application displays error message "Please select a valid amount"	✅
3	User selected **no investment strategies** and presses next button	Application should give error message "Please select at-least 1 Investment strategy"	Application displays error message "Please select at-least 1 Investment strategy"	✅
4	User selected **more than two investment strategies** and presses next	Application should give error message "Select maximum of 2 Investment strategies"	Application displays error message "Select maximum of 2 Investment strategies"	✅
5	Investment amount selected is **blank** and presses next button	Application should give error message "Please select a valid amount"	Application displays error message "Please select a valid amount"	✅

No.#	Test Case Description	Expected Result	Actual Result	Status
6	User selects **Ethical and Growth** investing with **5000$** amount and presses submit button	Stocks (6 in count), based on Investment strategies should be displayed to user.	6 Stocks, based on Investment strategies are displayed to user.	✅
7	User selects **Index investing** with **10000$** amount	Stocks(3 in count), based on Index investing strategy should be displayed to user.	3 Stocks, based on Index investing strategy are displayed to user.	✅
8	User selects **Quality and Value investing** with **15000$** amount and presses submit button.	Stocks (6 in count), based on Investment strategies should be displayed to user.	6 Stocks, based on Investment strategies are displayed to user.	✅
9	User selects **Quality and Value investing with 15000$** amount and presses submit button. Then user clicks on any of the **Stock Tile**	User should be able to see historic data with open and close value details	User is able to see historic data with open and close value details on graph	✅
10	Click one of the items in the **Marquee**	User should be able to navigate to detailed stock page	User is able to navigate to detailed stock page	✅

FUTURE WORKS

MOBILITY
Introduce mobile app for on-the-go portfolio access.

ALERTS
Enable daily email alerts for portfolio value tracking

REAL-TIME
Save and suggest personalized investment strategies

PERSONALIZATION
Enhancing live dashboards for real-time updates

THANKS!