

Problem Statement: Investment Search Application Development

Background:

Investors keen on making informed decisions in the stock market often face challenges in accessing comprehensive financial insights about companies listed in stock exchanges such as NSE (National Stock Exchange) and BSE (Bombay Stock Exchange). To address this, an Investment Search application needs to be developed to provide investors with easy access to essential financial data and analysis of listed companies.

Use Case:

Investors look for financial insights about the company listed in NSE/BSE. As an Investor, I need to look for financial insights about the companies listed in NSE/BSE so that I can invest in good companies efficiently.

1) Login API

Endpoint: /api/auth/login

Functionality: Validates user credentials against the database and generates a JWT token upon successful authentication.

Input Parameters:

Email ID: The email address of the user attempting to log in. (string)

Password: The password associated with the user's account. (string)

Output:

Success/Failure status: Indicates whether the login attempt was successful or not.

Token: A JSON Web Token (JWT) generated upon successful login, used for authentication in subsequent requests.

Additional Features:

Implements secure password hashing and salting techniques to ensure user password security.

2)Search API

Endpoint: /api/stocks/search

Functionality: Retrieves comprehensive details of the requested stock from the database.

Input Parameters:

Stock Name: The name of the stock for which the user wants to retrieve details. (string)

Output:

Stock details: Detailed information about the requested stock if found.

Error message: An error message if the requested stock is not found in the database.

Additional Features:

Implements auto-suggestion feature for stock names based on user input.

3)View Details API

Endpoint: /api/stocks/details/{stockId}

Functionality: Retrieves detailed financial insights about the requested stock, including current trading price, SWOT analysis, financial ratings, company essentials, etc.

Input Parameters:

Stock ID: The unique identifier of the stock for which the user wants to view details. (integer)

Output:

Current trading price

SWOT analysis

Financial ratings

Company essentials

Additional Features:

Provides a comprehensive view of the selected stock's financial metrics and analysis.

***Database Tables:**

1)User Table:

Columns:

id (int, primary key): Unique identifier for the user.

email (varchar): Email address of the user.

password_hash (varchar): Hashed password of the user.

password_salt (varchar): Salt used for password hashing.

2) Stock Table:

Columns:

id (int, primary key): Unique identifier for the stock.

name (varchar): Name of the company.

current_trading_price (decimal): Current trading price of the stock.

closing_price (decimal): Closing price of the stock from the previous trading day.

today_high (decimal): Highest price of the stock reached during the current trading day.

today_low (decimal): Lowest price of the stock reached during the current trading day.

fifty_two_week_low (decimal): Lowest price of the stock in the past fifty-two weeks.

fifty_two_week_high (decimal): Highest price of the stock in the past fifty-two weeks.

face_value (decimal): Face value of the stock.

number_of_shares (int): Total number of shares.

market_capitalization (decimal): Market capitalization of the company.

cash (decimal): Cash reserves of the company.

debt (decimal): Debt of the company.

enterprise_value (decimal): Enterprise value of the company.

dividend_yield (decimal): Dividend yield of the stock.

3) SWOT Analysis Table:

Columns:

stock_id (int, foreign key): Foreign key referencing the stock table.

strengths (varchar[]): Array of strengths of the company.

weaknesses (varchar[]): Array of weaknesses of the company.

opportunities (varchar[]): Array of opportunities for the company.

threats (varchar[]): Array of threats faced by the company.

4) Rating Table:

Columns:

stock_id (int, foreign key): Foreign key referencing the stock table.

overall_rating (decimal): Overall rating of the company.

ownership_reviews_count (int): Count of reviews for ownership aspect.

valuation_reviews_count (int): Count of reviews for valuation aspect.

efficiency_reviews_count (int): Count of reviews for efficiency aspect.

financials_reviews_count (int): Count of reviews for financials aspect.