

SVKM'S NMIMS

Mukesh Patel School of Technology Management and Engineering

Advanced Web Programming Report

for Course

AWP (Department Elective)

by

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Program	B.Tech	B.Tech
Branch	Computer Engineering	Computer Engineering

B.Tech CE

AY 2024-25

Project Title – StockWise : Stock Market Tracker

Github Repo – [StockWise](#)

Website Link – <https://stockwise.sidlakhani.tech>

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1. Project Overview

StockWise is a comprehensive stock market tracking platform designed to give users real-time insights into market trends, stock performance, and financial news. The application includes a robust market overview, portfolio management, customizable watchlists, stock purchasing, financial news aggregation, and payment options for premium features. Users can monitor key indices, track sector performance, and analyze detailed stock data. Additionally, **StockWise** provides advanced portfolio tracking tools, educational resources for financial literacy, and personalized notifications for price and market updates. Integrating features such as sentiment analysis on news and customizable dashboards, **StockWise** aims to empower users with the information and tools needed to make informed investment decisions and stay connected with market movements in an intuitive and user-friendly environment.

- **Project Objectives:**
 - Real-Time Market Data
 - Portfolio Management
 - Mobile-Friendly
 - Secure and Private
 - Market at your Fingertips.
 - All your Bills in one place.

2. Software Requirements

2.1 Functional Requirements

- **User Authentication:** Users must be able to register, log in, and log out securely.
- **Market Data Retrieval:** System should display real-time stock market data.
- **Portfolio Management:** Users can create, view, and manage their portfolios.
- **Transaction Handling:** Implement payment methods for transactions and premium services.

4.2 Non-Functional Requirements

- **Performance:** The application must update market data within 2 seconds of retrieval.
- **Scalability:** Should support up to 100,000 concurrent users.
- **Reliability:** System should maintain 99.9% uptime.
- **Security:** All transactions and user data must be encrypted using industry standards.
- **User Interface:** Intuitive and responsive design across desktop and mobile devices.

4.3 External Interface Requirements

- **APIs:**
 - Alpha Vantage and Finnhub for stock data.
 - Clerk Authentication for Standard user authentication.
 - Supabase for feedback form database.

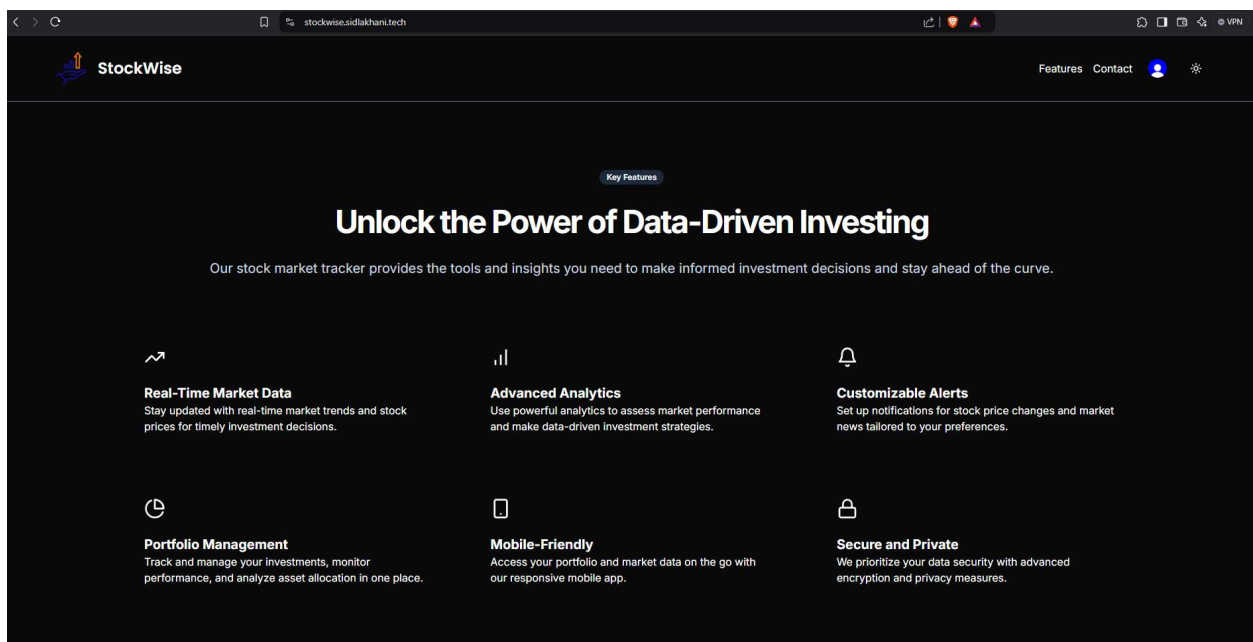
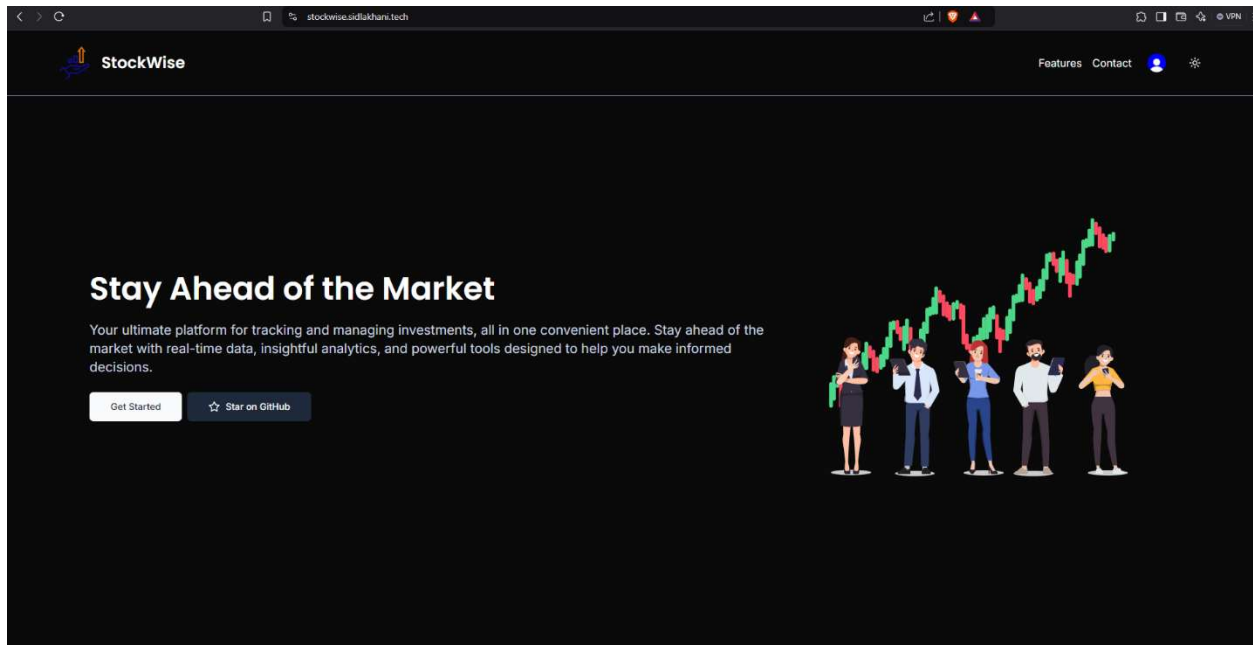
4.4 Software and Technology Stack

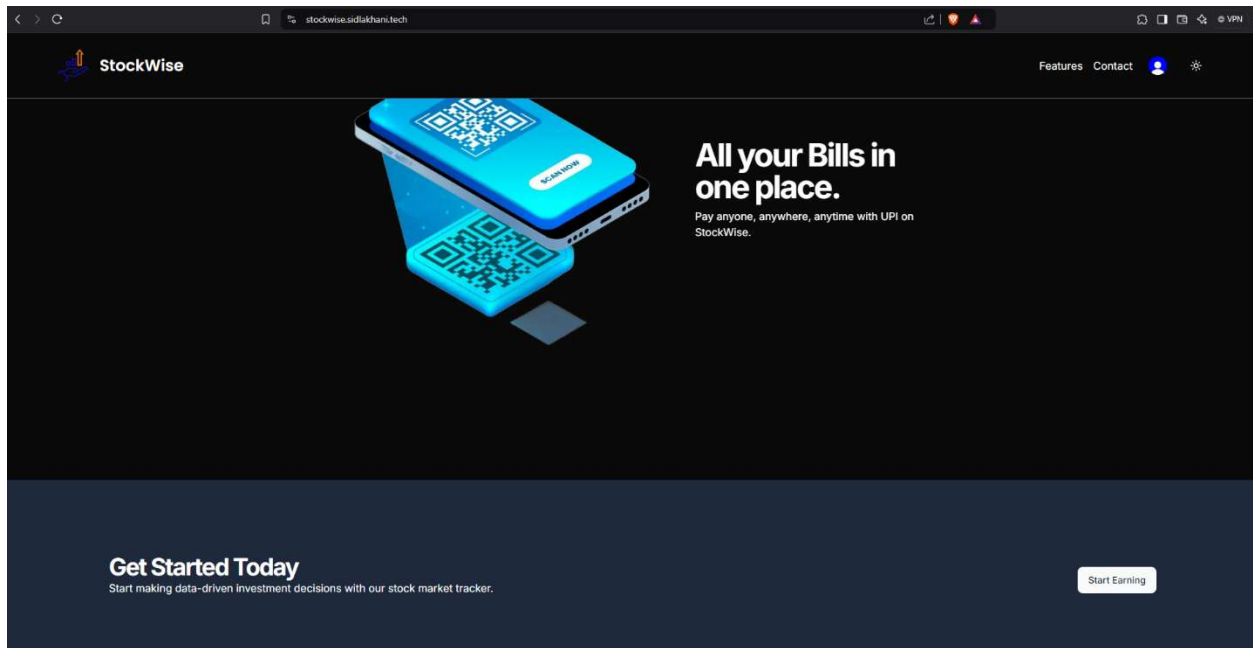
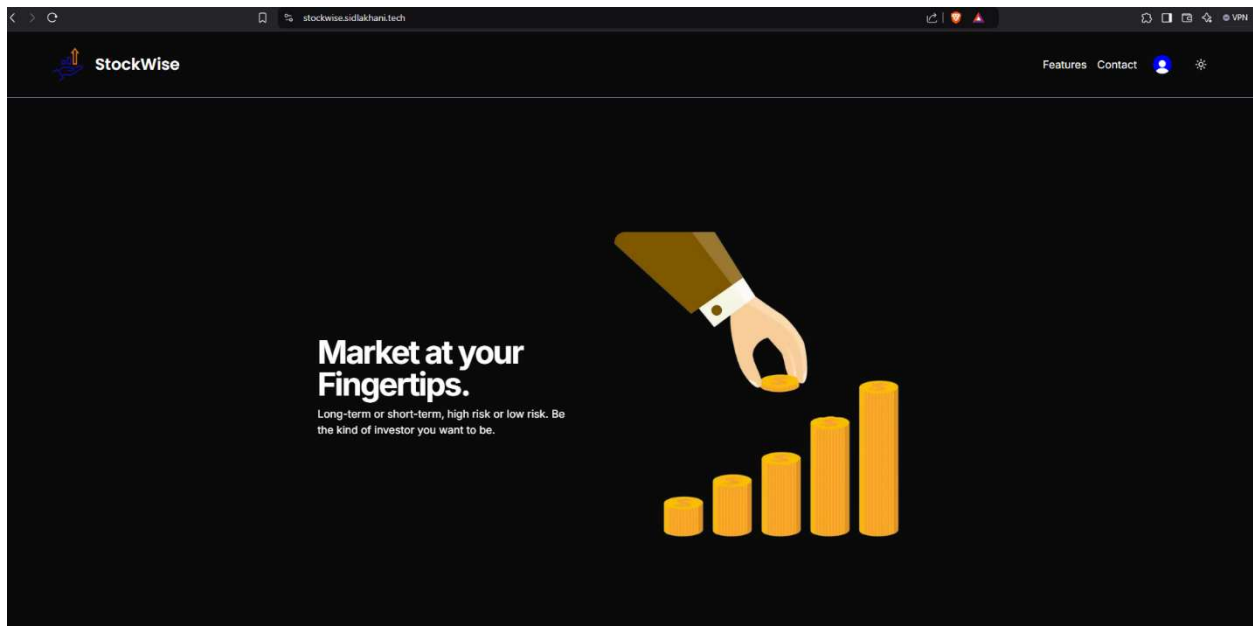
- **Programming Languages:**
 - TypeScript (main programming language for logic and component structure)
 - JavaScript (underlying language used by Next.js)
- **Frameworks and Libraries:**
 - **React:** For creating reusable UI components and managing the component lifecycle.
 - **Next.js:** Full-featured React framework used for server-side rendering, routing, and generating static pages.
 - **Clerk:** Used for managing user authentication and authorization flows.
 - **Radix UI:** Provides accessible and customizable UI components (e.g., dialog, scroll area, separator, tabs) that integrate well with React.
 - **Lucide React:** An icon library providing a variety of customizable icons used within the UI.
 - **Framer Motion:** Adds animations and transitions to the interface for enhanced user experience.
 - **Tailwind CSS:** Utility-first CSS framework for styling components with responsive, customizable designs.
- **Databases:**
 - **Supabase (PostgreSQL):** Acts as the backend service for handling database operations, real-time updates, authentication, and API endpoints. Utilizes PostgreSQL as the primary database.
- **Hosting/Deployment:**
 - **Vercel:** Primary cloud provider and hosting solution for deploying the Next.js application, leveraging serverless functions and global CDN.

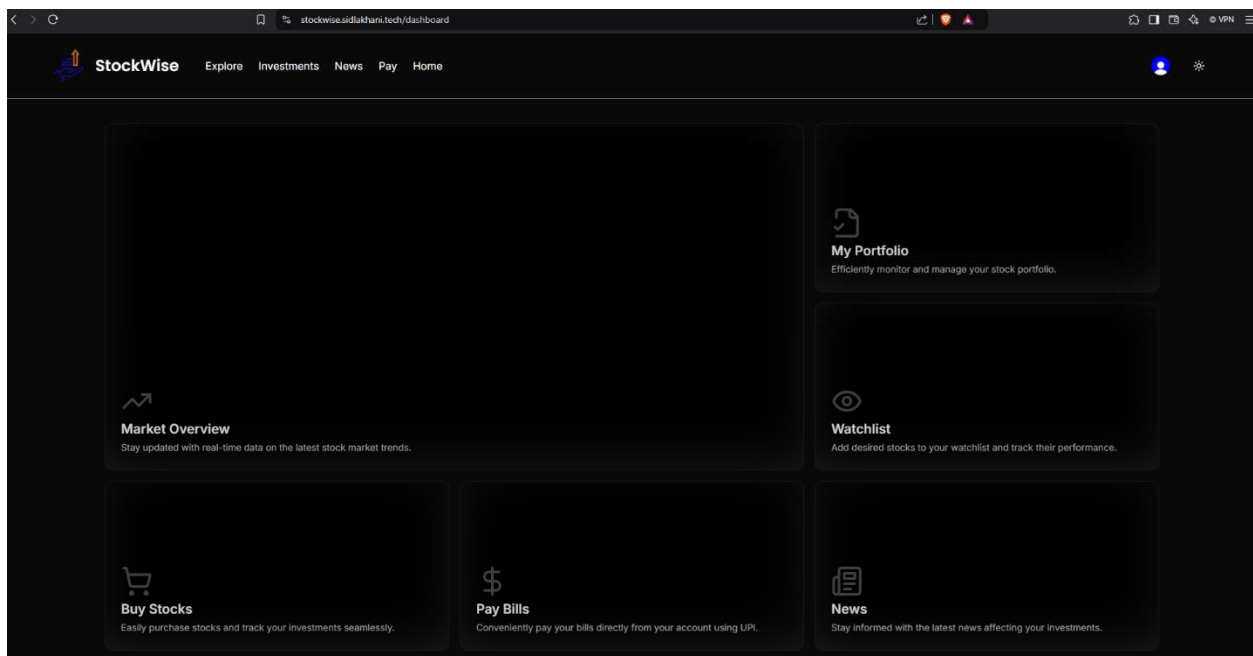
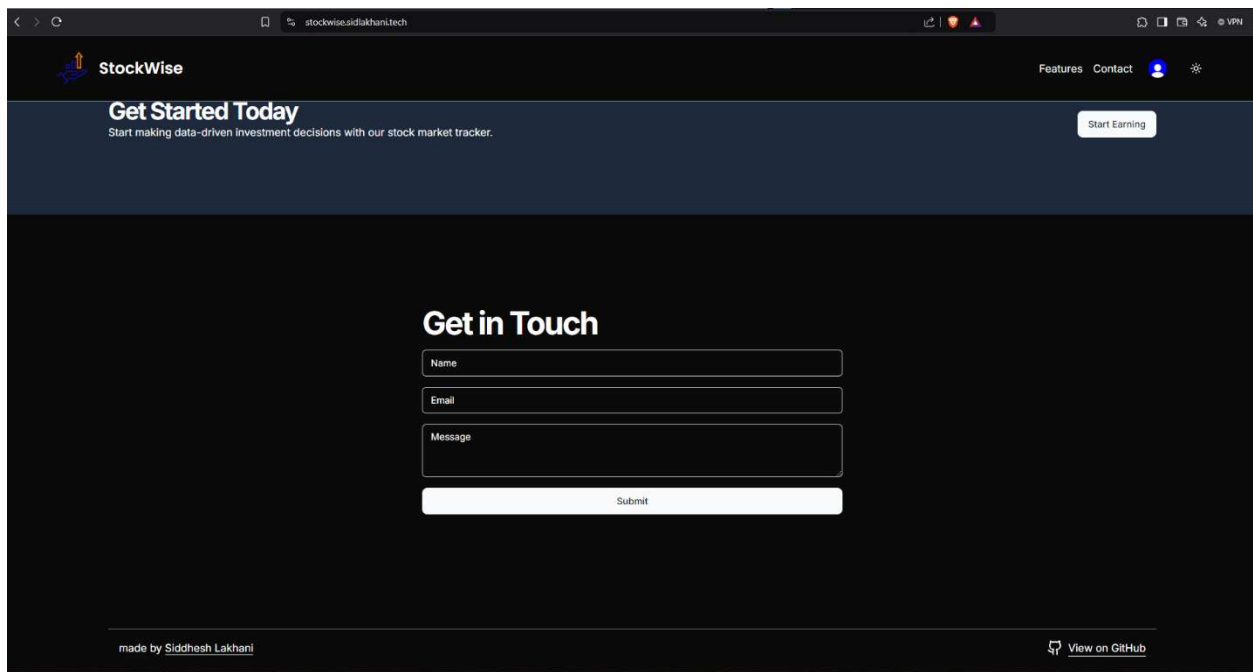
4.5 Constraints

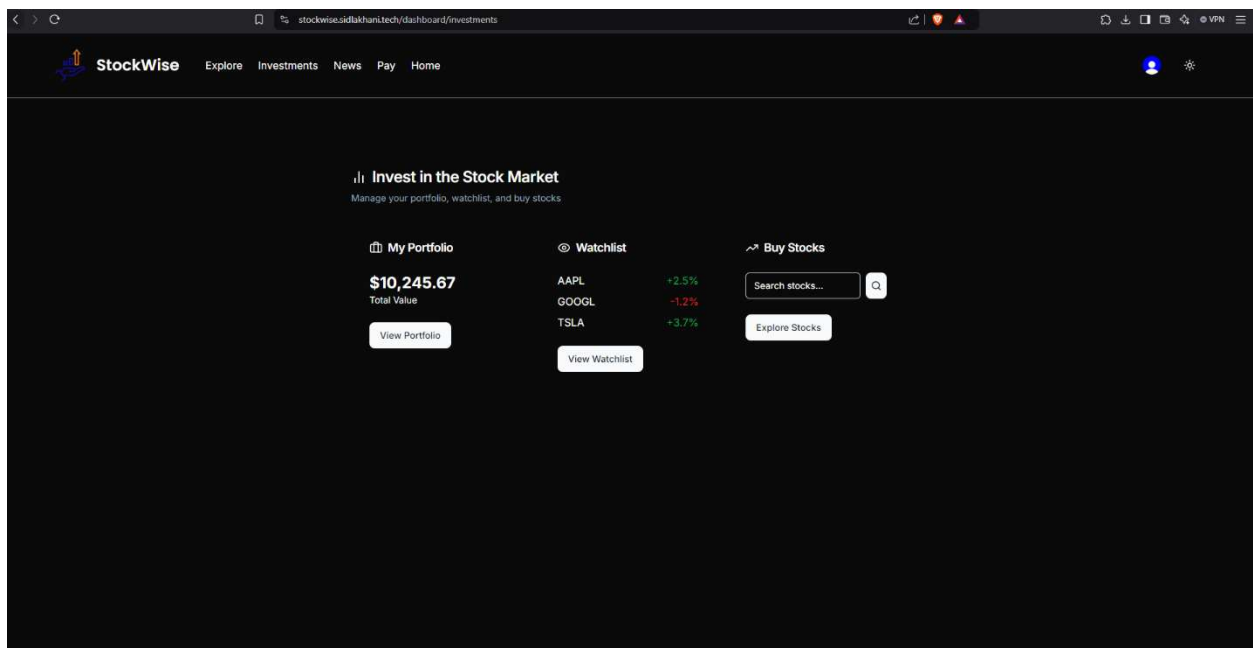
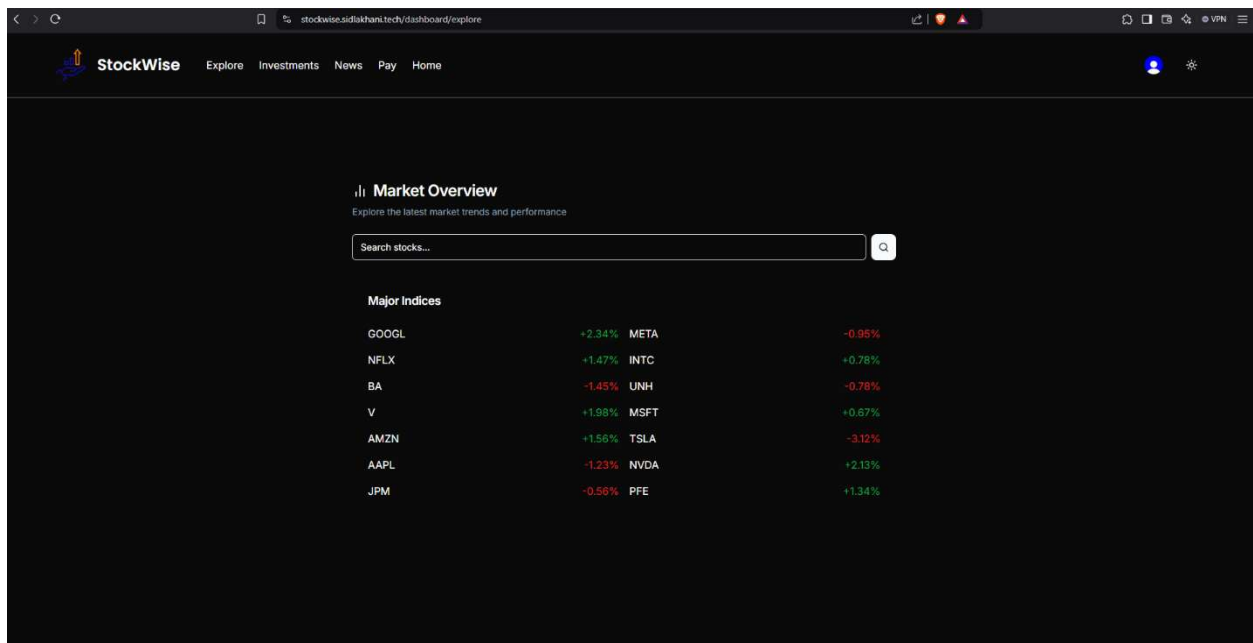
- **API Limitations:** Free APIs for stock data often have strict rate limits, limited access to detailed information, and reduced update frequencies, restricting the ability to display real-time stock data. Due to these constraints, dummy data was used in some areas, and an additional “/result” page was created to call APIs without exhausting limits.
- **Data Accuracy:** Since dummy data was used to supplement real-time data, the application may not display exact, real-time stock prices, impacting overall data accuracy for users.
- **Authentication Provider Limits:** Clerk handles user authentication, but its free plan also has rate limits and user restrictions. This constraint affects how many users can be managed before encountering additional costs.

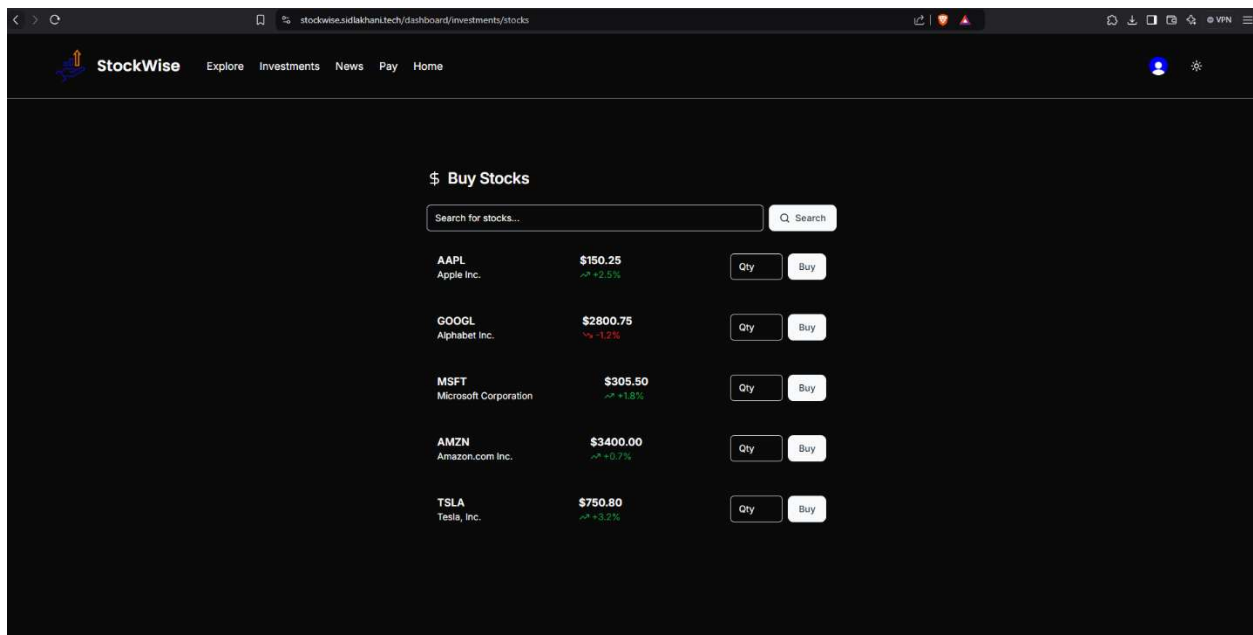
3. Web-Pages Overview

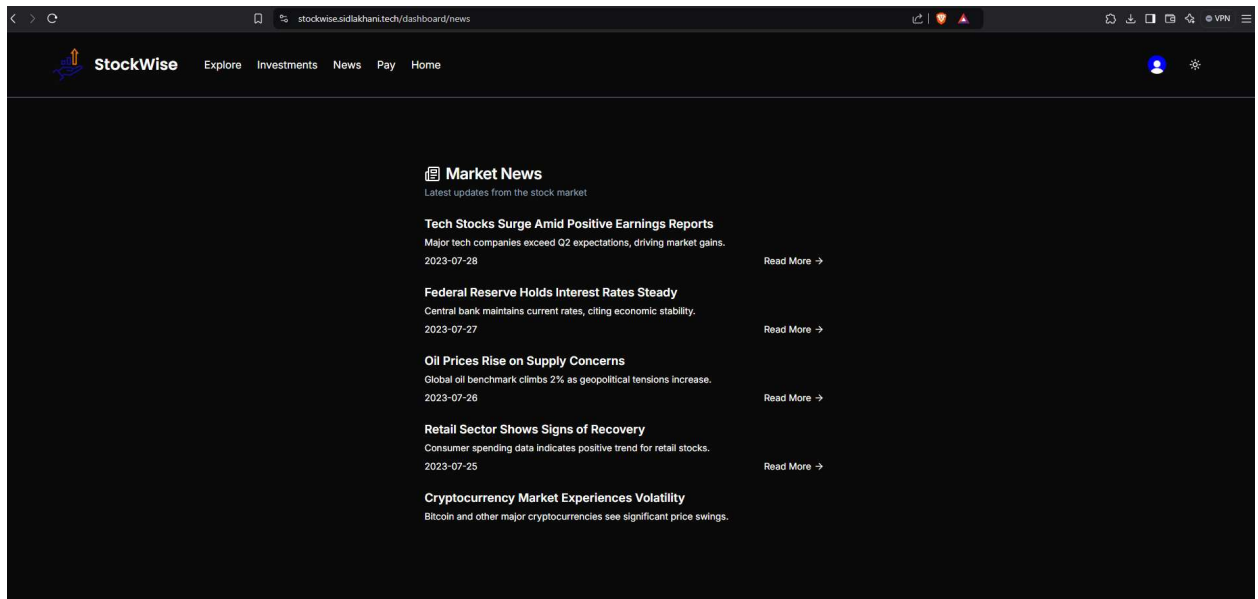
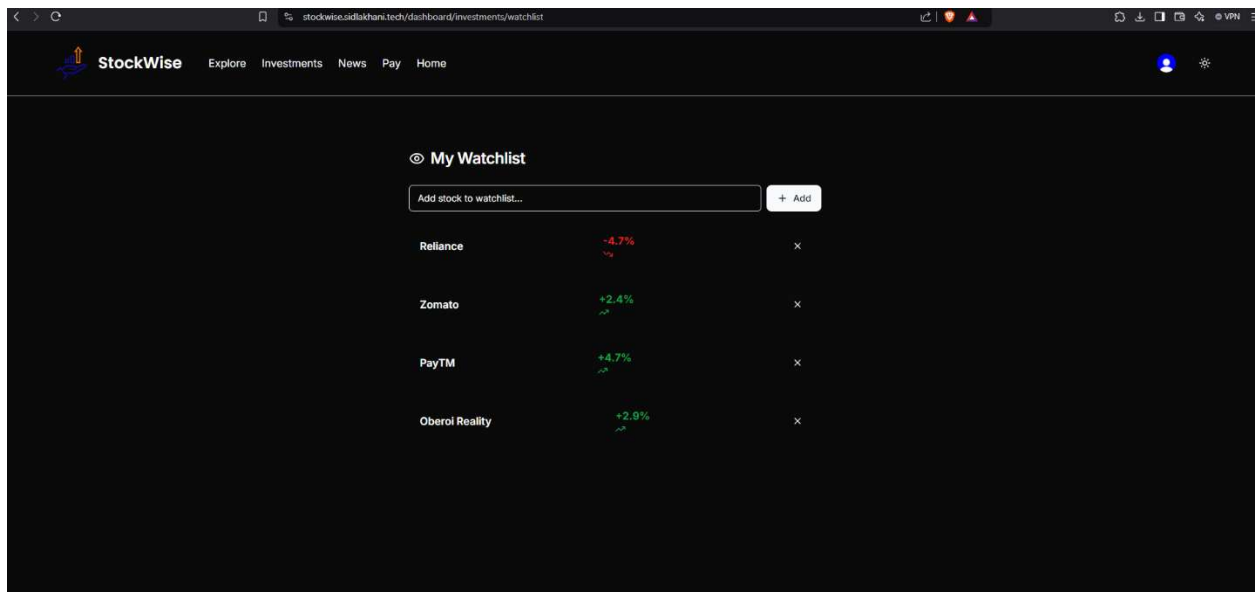


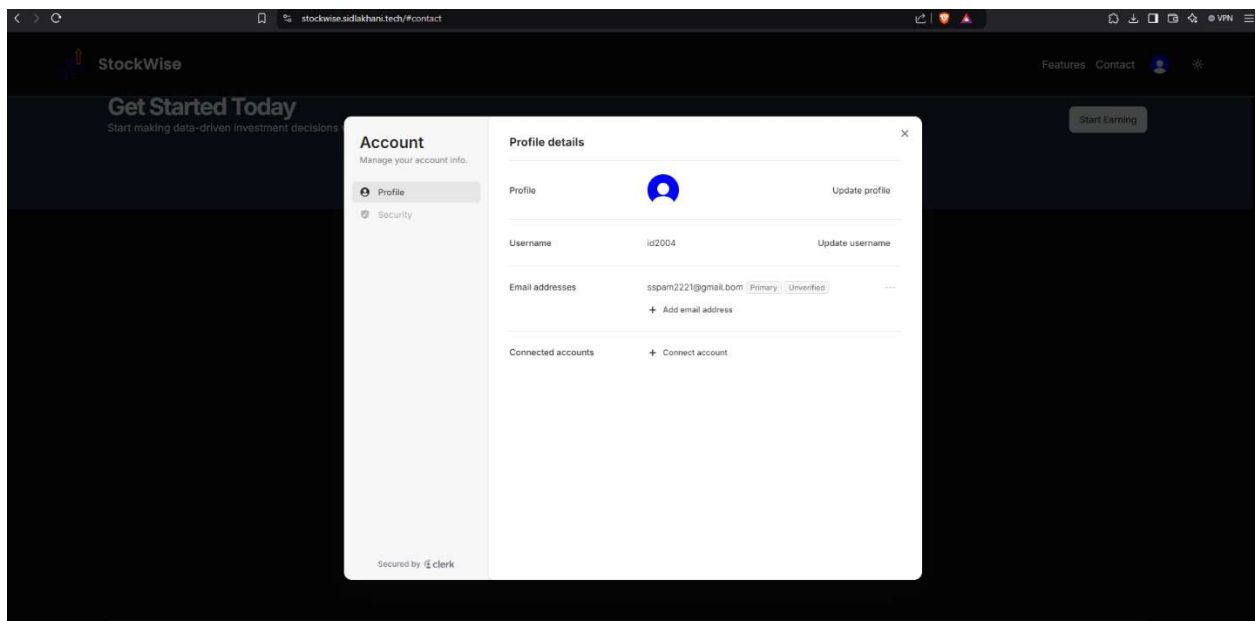
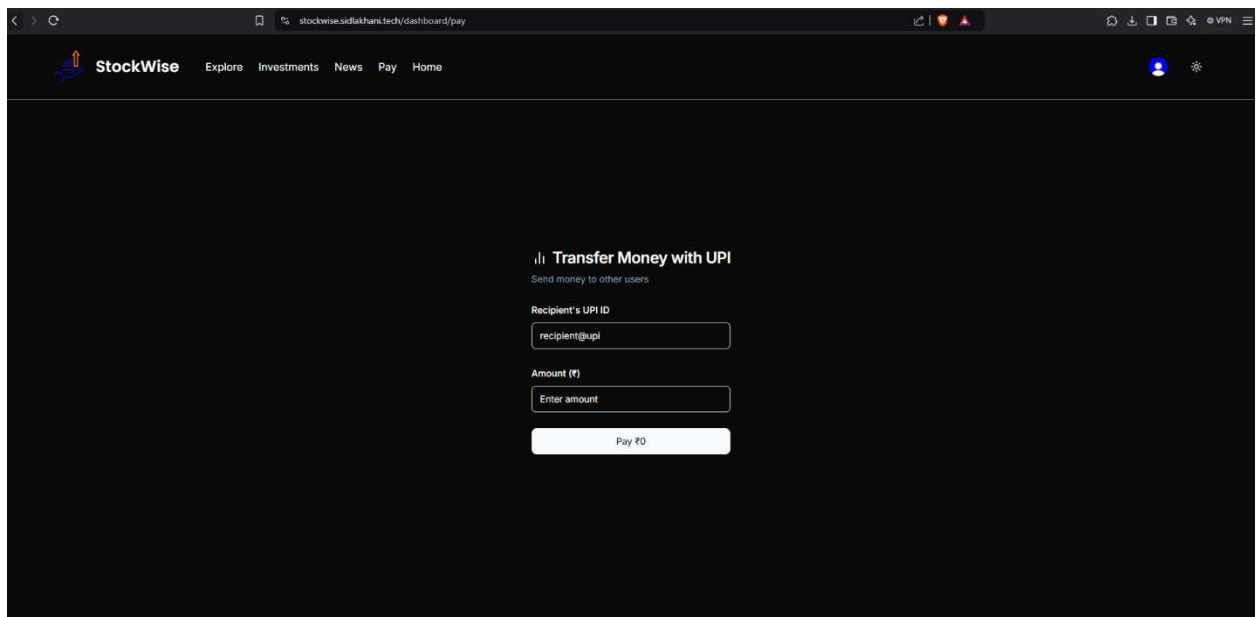












```
< > C stockwise.sidiakhan.tech/result
Stock Symbol Search and Data
Search Stock Symbols
Apple Search
APLE - Apple Hospitality REIT Inc
AAPL - Apple Inc
AAPL34.SAO - Apple Inc
APC.DEX - Apple Inc
APC.FRK - Apple Inc
AGPL - Apple Green Holding Inc
OR2V.LON - Apple Inc.
500014.BSE - Apple Finance Limited
48T.FRK - APPLE HOSPITALITY REIT
603020.SHH - Apple Flavor Fragrance Group Company Ltd

Stock Data for AAPL
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  "d": -0.435,
  "dp": -0.1912,
  "h": 228.66,
  "l": 226.405,
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  "pc": 227.48,
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}
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4. Database

Table Editor

sid-lakhan's Org Free / stockwise / Enable branching

Feedback

schema: public

New table

Search tables...

feedback

market_overview

watchlist

Filter Sort Insert

RLS disabled postgres Realtime off API Docs

	id	name	email	message	submitted_at
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	14	Siddhesh Lakhani	siddhesh@mail.com	Test 2	2024-10-26 11:22:10.437
	15	Siddhesh Lakhani	siddhesh@mail.com	test 3	2024-10-26 11:23:01.404
	16	priha	[REDACTED]	does it work??	2024-10-26 16:11:49.907
	19	Siddhesh Lakhani	test@gmail.com	Test from mobile	2024-10-28 15:56:25.337
	20	Sid	sidd@gmail.com	test	2024-11-08 14:01:40.239
	21	Sid	siddhesh@gmail.com	sdfdsf	2024-11-08 16:38:55.273

Table Editor

sid-lakhan's Org Free / stockwise / Enable branching

Feedback

schema: public

New table

Search tables...

feedback

market_overview

watchlist

Filter Sort Insert

	id	symbol	indice
	3	AAPL	-1.23
	4	MSFT	0.67
	5	GOOGL	2.34
	6	AMZN	1.56
	7	TSLA	-3.12
	8	META	-0.95
	9	NFLX	1.47
	10	NVDA	2.13
	11	INTC	0.78
	12	BA	-1.45
	13	JPM	-0.56
	14	UNH	-0.78
	15	V	1.98
	16	PFE	1.34