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Intralytix – Intraday Stocks Screening System

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ABSTRACT: The project work involves developing a real-time intraday stock screener system for stocks traded on the Indian stock market. It will help traders who carry out buying as well as selling on the same day by giving them live updates on stocks, topping gainers, and biggest losers. The system includes facilities for getting immediate alerts on Telegram and even places orders for buying and selling.

This project uses the Zeroths Kite API to get live data about stocks and maintain smooth data flow using Apache Kafka. The front end, created with Vue.js, depicts live updates at runtime with the assistance of Docker. The coding is done on Git, and it uses data science methods for analysis primarily on pattern identification with intelligent trade recommendations. It aims to assist traders with better decisions at quicker times with the utilization of live updates.

KEYWORDS: Real-time stock screener, Intraday trading, Zerodha Kite API, Apache Kafka, Vue.js, Telegram notification, Buy and Sell orders, Docker, Git version control, Data science analysis, Indian stock market, Live stock price updates, Top gainers and losers, Automated trading, Market decisions.

I. INTRODUCTION

The intraday stock screening system is the tool that watches and analyses the stock market during the same trading day. People buy and sell stocks within the day in intraday trading, hence relying on real-time data to execute fast decisions. It keeps track of live price moves, trading volume, and percent changes to spot short-term opportunities.

This differs from a normal stock system that is mainly concerned with long-term investment, past data, and end-of-day analysis. While normal systems can show daily closing prices or long-term charts, they do not update instantly-second by second-the information an active trader requires. By contrast, an intraday screener helps a user spot fast market moves-a price suddenly spiking up or down-so they can immediately take advantage of such a move during the session of trading.

The need for such a system arises because prices tend to fluctuate every second, and even with just a few seconds' delay, there could be a difference between profit and loss. Many free tools provide data that is delayed or lacks real-time alerts. So, a dedicated intraday screening system is necessary to provide accurate, second-to-second information for traders based on timing and quick responses.

The aim of the project is to develop a real-time intraday stock screener for the Indian stock market. It will help traders/investors pick up top gainers and losers during live market hours and suggest buy/sell recommendations. The system has some additional features like instant alerts through Telegram and the ability to place intraday Buy or Sell orders directly from the platform.

The stock data is fetched from the Zerodha API and pushed into Apache Kafka for real-time data streaming. This is then processed and displayed on the Vue.js frontend using a WebSocket connection, which means that updates come live without needing to refresh the page. Another Kafka consumer does save the same data in a database for historical tracking. It has been implemented so that the entire application runs in Docker containers and keeps all source code in Git for version control and updates. These technologies also make it fast, efficient, and user-friendly for traders to monitor, analyse, and act with confidence on intraday market movements.

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II. OBJECTIVES

Intralytix is an intraday trading stock screening tool. It helps traders with real-time market information and ease of executing trades. The primary objective is to monitor live stock prices with minimal delay in order to quickly identify the largest movers throughout the day. The system provides instant buy/sell ideas based on technical analysis and sends important alerts to platforms like Telegram for quicker awareness. It brings all the data, signals, and alerts together into one dashboard and includes integrated brokerage APIs to place trades from the platform intra-day without having to switch applications. The application leverages Kafka and Docker, among others, to ensure it is fast and reliable; it even allows for storing data for historical review. Managed with Git, Intralytix brings these pieces together to help traders make faster, smarter, and more informed decisions by reducing latency and hassle.

Real-time tracking is the heartbeat of Intralytix. It gathers and processes live market data from the markets with very low delays. The system streams price updates and order book changes from exchanges via fast APIs, whereby every trade and quote is instantly seen within the platform. This live tracking provides up-to-the-millisecond information needed for intraday decisions that give traders a real edge in the fast market.

Screening involves an automated continuous filtering of the entire market using predefined criteria in search of opportunity. The system continually ranks stocks based on intraday price changes, volume spikes, and volatility to identify the biggest movers and losers. This real-time filtering relieves the trader from manually scanning and directs them toward those securities with the most powerful momentum or weakness. It transforms vast amounts of market information into easy-to-understand lists ranked for further review.

Suggestions are rule-based buy and sell ideas generated by the analytics engine. They are derived from intraday indicators, pattern recognition, and set trading rules. These tips give suggestions of potential entry and exit points for the same session. They support decisions, but the traders make the choices on acting or not.

Alerts are instant, prioritized notifications delivered directly to the user via platforms like Telegram. They fire for key events in a stock such as issuing a new signal, reaching a target price, or showing unusual volume. In this way, traders are kept informed even when away from their main screen, so they can take advantage of intraday opportunities.

Ordering implies connectivity with a broker for users to act upon the signals that are generated on the platform. Integration with APIs like Zeroths enables users to place intraday orders in the quickest manner and fetch live margin and position data. This closes the loop between analysis and action, speeding up the whole process and making the system a complete trading cockpit.

Dashboard: A single, customizable screen displaying all outputs in one place. It includes live watchlists, screening results, active signals, alert logs, and order status. It's designed for quick, clear viewing so traders can monitor the market and their plan without switching apps. The layout is easy to read during busy trading hours.

Architecture refers to the utilization of modern technologies like Apache Kafka for real-time data streaming and Docker for containerized deployment. This solid tech setup provides scalability, reliability, and support for a high amount of data with low latency. Well-thought-out architecture keeps things stable during busy market times and makes updates easy.

Storage refers to the saving of live tick data and historical information within dedicated databases. This allows traders to review past results, back test strategies, and study long-term trends. A reliable storage system will maintain data integrity and make it retrievable to turn the platform into a continuously growing store of market knowledge for making real-time decisions in the present and future.

Versioning leverages Git for powerful control over code and configurations. It supports teamwork, tracks changes, and keeps a history of how the system has evolved. This is vital in updates, debugging, and adding new features without bringing down the live system.

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Empowerment is the core goal: to combine all features in a way that gives traders a clear technological edge. By delivering real-time data, automated analysis, and smooth execution, Intralytix reduces delays and boosts smart, confident intraday trading in the fast equity market.

III. PROBLEM STATEMENT

The Indian stock market moves every second, and intraday traders need fast, accurate data to make quick, effective decisions. However, a host of current trading tools and websites have quite a number of shortcomings that complicate intraday trading. The following are the key issues on which this project focuses:

1. No Real-time Data for Intraday Trading
Most free trading platforms update prices with a delay or refresh data only at the end of the day. For intraday traders, that lag means opportunities lost. In such a scenario, there is a requirement for the system to update stock prices and movements every second so that the traders can take quick action based on evolving market conditions.

2. Difficult to immediately spot the top gainers and losers
During live trading, several thousand stocks are active simultaneously. It is quite beyond the capability of any single trader to identify manually which of these stocks are rising or falling fastest. Some sort of automated mechanism is needed to surface the top gainers and losers in real time.

3. No Single Platform for All Trading Actions
Traders work with a lot of different apps: one for viewing charts, another for receiving alerts, and yet another for placing orders. This fragmentation wastes valuable time and increases the likelihood that traders will miss lucrative trading opportunities. There needs to be an integrated platform that lets users view data, receive alerts, and execute buy or sell decisions seamlessly.

4. Late Trade Alerts
In fast-moving markets, even a few seconds of delay can result in losses. Traders need a system that gives instant alerts or notifications-for example, via Telegram-when the stock is showing strong movement or meets specified criteria.

5. Challenges in managing huge volumes of market data
Stock markets generate huge amounts of data every second. Most the existing systems become slow or sometimes even crash under such a load. A robust and scalable architecture design for data is necessary to handle live market data without any lag.

6. Lack of Automation and Smooth Data Flow
However, many systems still rely on manual updates or multiple software tools for different tasks; hence, there are data mismatches and slow refreshes. There should be a fully automated system that would continuously collect, process, and display data without errors.

7. Limited Customization and Integration
Most modern stock screeners are closed systems, unable to connect using APIs or other tools. The traders are unable to connect them with their brokers or alert systems easily. There needs to be a flexible, connectable platform that supports automation and external integrations.

IV. METHODOLOGY

The screening methodology is specifically tailored to uncover high-probability, short-term opportunities within the live market session. It ingests real-time data streams to constantly monitor live price action, trading volume, and the changing order book. A pre-market filter first screens for equities that demonstrate anomalously high volume and elevated implied volatility, conditions that predicate activity to be watched more closely. As the session progresses, core technical indicators-including the RSI, moving average convergence/divergence patterns, and Bollinger Bands-are computed in real time to point to immediate overbought or oversold conditions and shifts in momentum.

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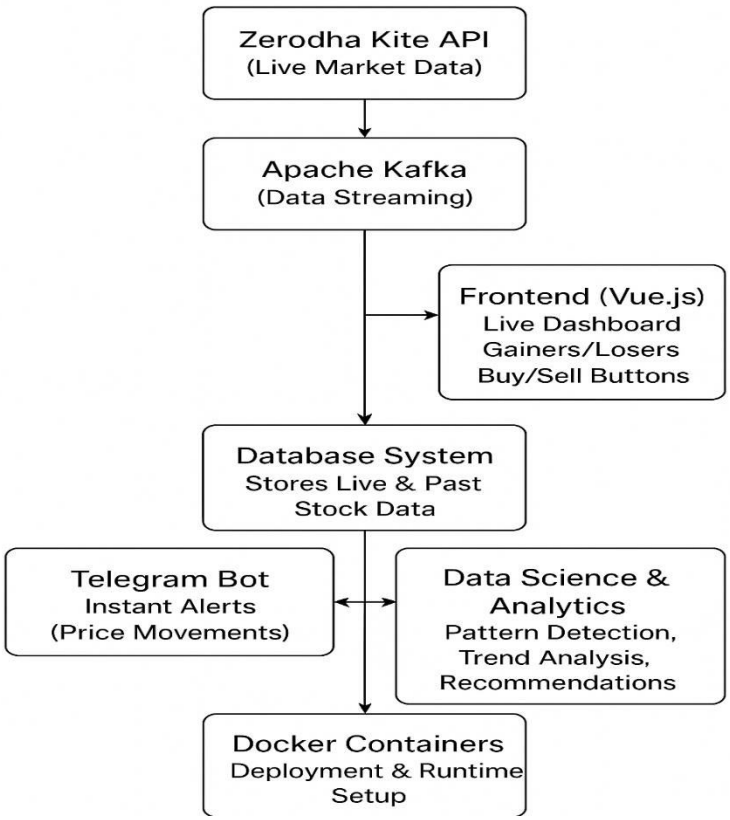
At the same time, volume-profile analysis helps distinguish between sustainable, institution-driven moves and noise driven by retail traders. Proprietary algorithmic scanners are employed in search for specific intraday patterns: opening range breakouts, momentum continuations, and volatility squeeze setups. Every possible signal goes through a liquidity check thereafter to make sure there is sufficient tradable float and that bid-ask spreads are narrow enough to allow for efficient execution.

Candidates are cross-checked against broader sector momentum and key market indices in the final step to make sure they are aligned with the prevailing intraday trend. This filtered result gives a curated, real-time watchlist of opportunities.



1. SIGNIFICANCE

This stock screening intraday tool in real time derives real value for on-the-go traders by converting live market moves into swift, usable insights. It saves time through automated heavy lifting of market watching; reduces mistakes with the help of algorithmic analysis; and provides immediate alerts via Telegram, besides being directly hooked up with trading platforms like Zerodha for fast and definitive actions. The architecture is scaled up and made more reliable with Kafka and Docker to keep its performance steady through surges in data flows. A dual-methodology tool that not only gives a practical, region-specific insight into traders in India but also imparts knowledge on how real-time data systems and financial analytics work.

2. TOOLS, TECHNOLOGIES, OR FRAMEWORK USED

The project uses a modern, full-stack setup. Real-time market data is fetched from the Zerodha Kite API and streamed using Apache Kafka for robust, low-latency delivery. The frontend is built in Vue.js, and it uses WebSocket connections to push live updates on the browser. Alerts are sent using a Telegram Bot API, and TimeScaleDB is used for persistence-store data of the user and trades. Python, along with its considerable data science ecosystem, is used for analytics and data processing on the backend. The entire app is set up to run in Docker containers for consistent deployments, and Git manages version control throughout development.

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3. EXISTING SYSTEM AND PROPOSED SYSTEM

The current system has very basic solutions for stock markets, like dashboard analysis, grouping based on sectors, basic scans, and tracking in a watchlist. Advanced intelligence such as stock predictions, research tools, and notifications have become highly essential requirements for smart traders these days, which the current system does not possess. The enhanced system extends the existing platform with the addition of an artificial intelligence-powered stock analysis tool that can foresee stocks by their levels of confidence. The advanced system introduces an advanced Research Lab with eight professional tools in total, including correlation analysis, smart money flow analysis, and strategy backtests. The most important addition in the advanced system is the Alerts module with immediate price notifications and pattern alerts in Telegram.

4. HOW MY PROJECT DIFFERS FROM EXISTING RESEARCH

Your project is different from other studies in the way that it integrates stock screening technology using artificial intelligence to develop a predictive capability, which cannot be found in most conventional screeners. While conventional projects would normally provide common screening options for gainers, losers, and volume analysis, your project goes deeper to include sophisticated analyses made possible with Google's Gemini. Conventional project developments involve features that are scanty in functionality, like those studied; your project combines many complex functionalities, like having a Research Lab for correlation analysis, smart money analysis, and backtesting. Another area where your project differs is that it has automated notifications for things like stock price and candle patterns, which are not features of conventional projects for further research.

5. METHODS AND TECHNIQUES USED IN PROJECT APPROACH

The system implements a very organized data processing pipeline. The intake of data is received through Zerodha Kite API for real prices and volumes, streaming into a Kafka-enabled streaming platform for a safe, organized, and efficient real-time data distribution to all services. TimeScaleDB holds all this information for analysis and trending. For top movers and trade signals, a front-end display is available, which is Vue.js and WebSocket's driven. A Telegram bot facility enables automation of notifications, with Buy/Sell buttons to facilitate fast trade execution. Dockerization provides a uniform environment, with Git used for all versions of this system. Better work has been incorporated for cleaning, identification, and trade analysis with added data scientific practices.

6. APPROACH TO SOLVE PROBLEM

To build a single intraday trading assistant, the solution was developed in a very simple and step-by-step way: identifying its basic needs, live market data and alerts, or trade execution. Data was ingested from Zerodha and moved through a Kafka streaming system for smooth and reliable data flow. The processed data flowed real-time on a Vue.js interface and was persisted into a database. Alerts were sent to users through a Telegram bot, while trading actions were executed directly from the interface. The entire application was containerized using Docker and managed with Git for ease of maintenance. In the meantime, market data analytics were done using some data science techniques, performing continuous real-time testing for better accuracy and performance.

V. PROPOSED MODEL

It starts with data collection, whereby the system fetches live stock data from the Zerodha Kite API to update instantly about price, volume, and market movement to determine immediate gainers and losers. This is streamed through Apache Kafka, which manages continuous data streams well between producers and consumers, updating one consumer-website and another consumer that stores in the database. All live and past stock data will be stored in the database so that the trader can analyze trends and view past performance. The front end will be built using Vue.js, showing real-time updates without page reloads, and displays top gainers, losers, quick buy/sell options. Instant alerts may be availed via a Telegram bot every time there is a sudden change in a stock price. It means that even when traders are away from the website, they will be able to take immediate action upon receiving an alert. The system also contains direct intraday buy and sell buttons to help traders execute trades immediately when opportunities pop up. The entire project is deployed using Docker containers for easy setup, portability, and organized management; Git is used for version control to track changes and keep clean code. Finally, apply data science to clean and analyze data, find patterns, and give smarter trading insights.

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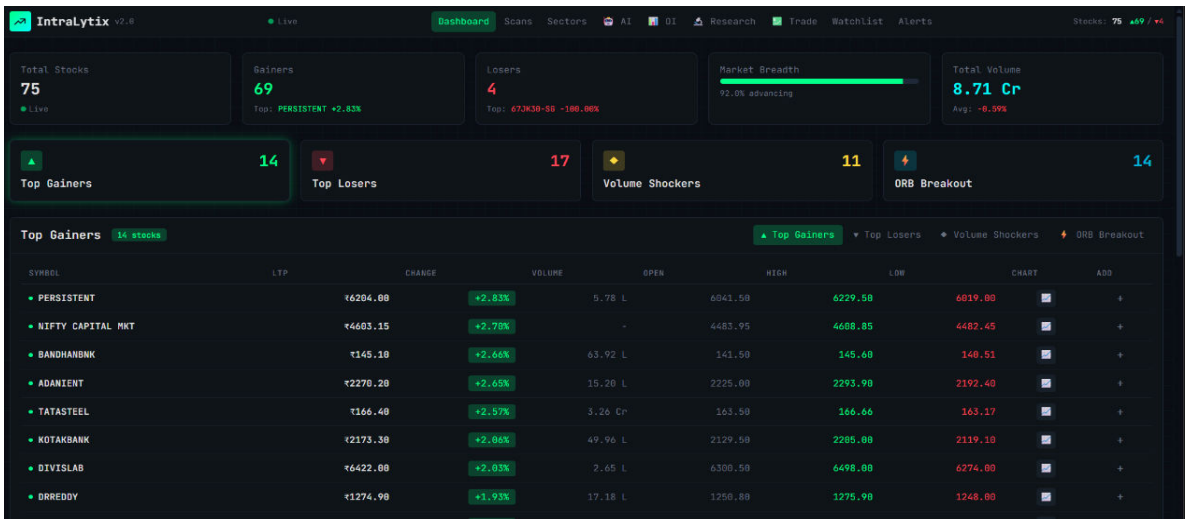
VI. PROTOTYPE MODEL

The Prototype Model assists with developing and testing an initial form of the Intraday Stock Screening System before developing the end product, primarily with demonstrating the functionality of prime functionalities and services within a real-time scenario. It begins with requirement analysis, ranging from developing an overall system that reveals live stock prices, shows top gainers and losers, provides alerts, and enables rapid buy/sell functions on a single platform. The development stage develops a simple and user-friendly platform with HTML, CSS, and JavaScript coding, with the background infrastructure linking to the Zerodha Kite API for live market updates and Kafka for efficient data streaming with alerting services facilitated through Telegram. The prototype develops an initial system with live stock data acquisition, data processing with Kafka, subsequent dashboard updates and alerts within a short while, and previous data storage for subsequent analysis. The testing stage validates successful updates on live stock prices, immediate alert generation, and successful functionality and performance. A review and implementation stage at the end helps improve system speed, accuracy, and reliability. The main functionalities include real-time stock tracking updates with display functions for gainers and losers, immediate Telegram alerts, and single-platform functionality for every operation, with benefits including easy and early testing and understanding functionalities, lower costs and timescales, and understanding the end system.

VII. DETAILED OVERVIEW OF PAGES IN INTRALYTIX

1. Dashboard Page

The Dashboard is the home page of the application. When you open the application, this will be the first screen you see. It shows, in one glance, a quick summary of the entire stock market. You get to see how many stocks are up and how many are down. You see the top 5 gainers and the top 5 losers of the day. The Dashboard gives you an idea of the market mood as a whole: whether the market has gone bullish or bearish today.



2. SCANS PAGE

Scans page displays you some already-built stock filters which identify a certain type of stocks in an automated way. Rather than analyzing 1800+ stocks one by one, scans make it easy for you. Scans like "Top Gainers," "Volume Shockers," etc., identify stocks that are performing in a certain way. These scans run every 30 seconds automatically, and their result updates in real time. To look for stocks satisfying a certain condition, you can click on a scan card.

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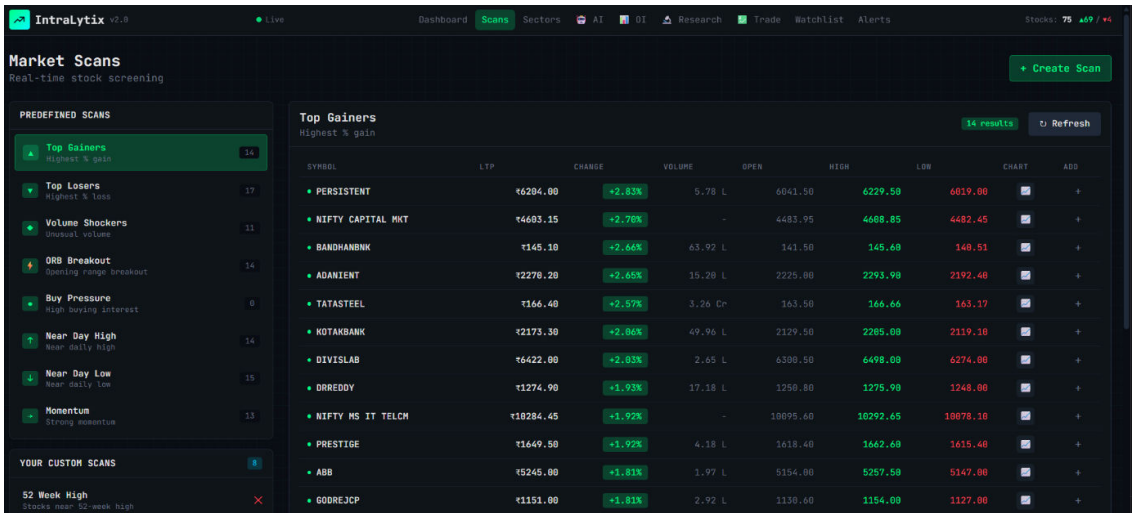
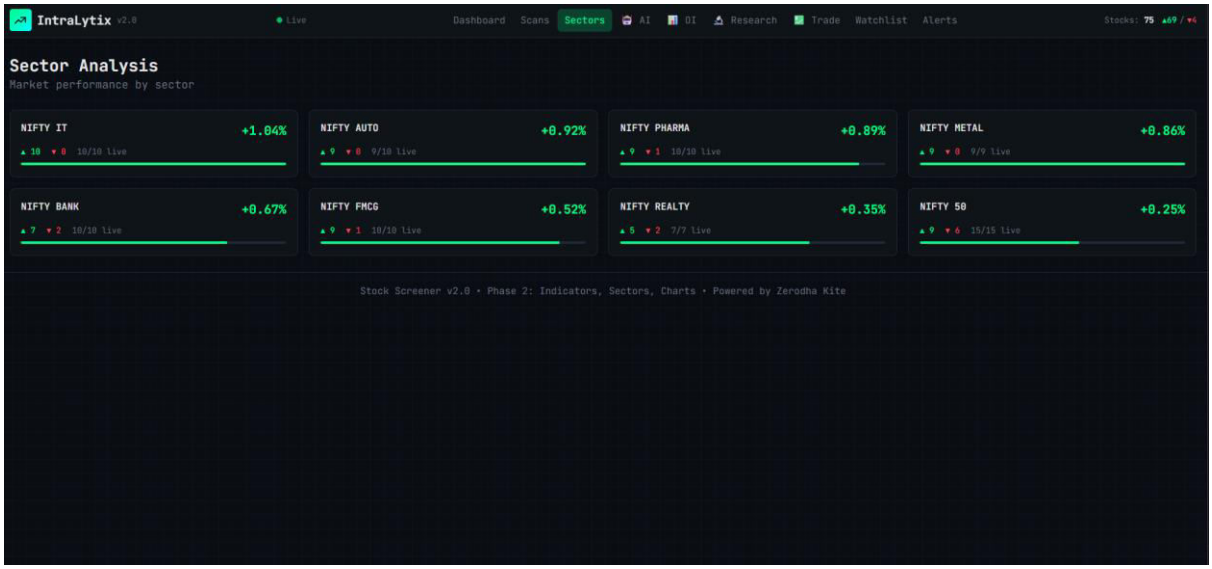


3. SECTORS PAGE

The Sectors page groups stocks in their industry groups. The Indian stock market broadly classifies sectors into Banking, IT, Pharma, Auto, Metal, FMCG, and Realty. This page shows you the best-performing sector of the day and the worst. Clicking on a sector name allows you to view all the stocks belonging to that sector. In this way, you get to know that on any particular day, a particular industry is doing well or not doing so well.



4. AI PREDICTOR PAGE

The AI Analysis page uses Google's Gemini artificial intelligence to analyze stocks. You can select any stock, and it will look at price patterns, volume, and technical indicators to study the AI. It then gives you a prediction about whether the stock might go up or down. The AI also gives a confidence score showing how sure it is about its prediction. One can even chat with the AI and ask questions about any stock or trading strategy. It will give AI-powered trend prediction-Bullish/Bearish/Neutral.Confidence percentage score, Key factors affecting the stock, Support and resistance levels, AI chat assistant for questions.

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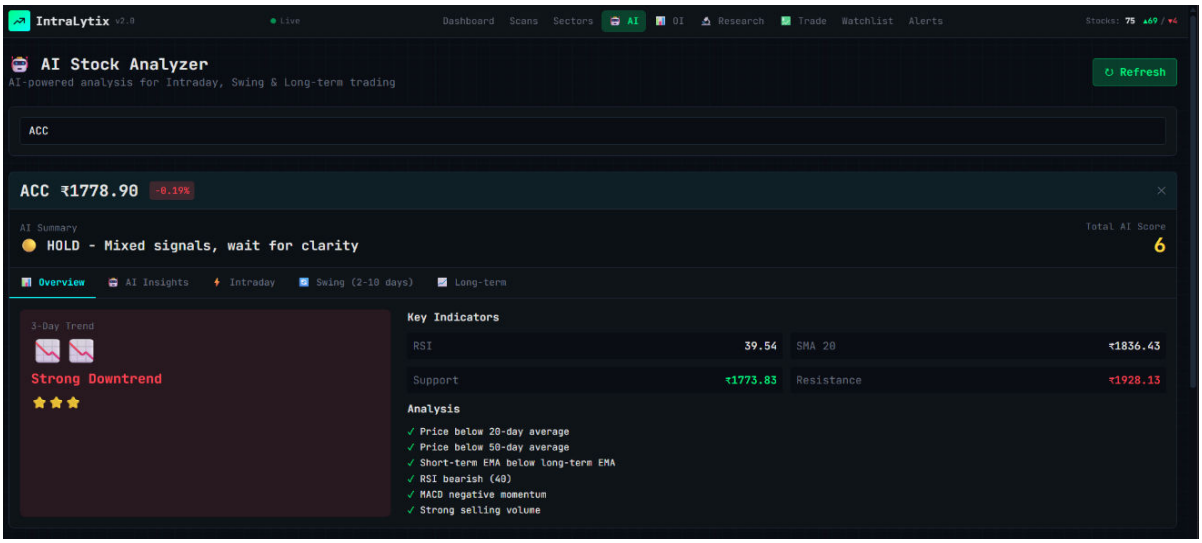
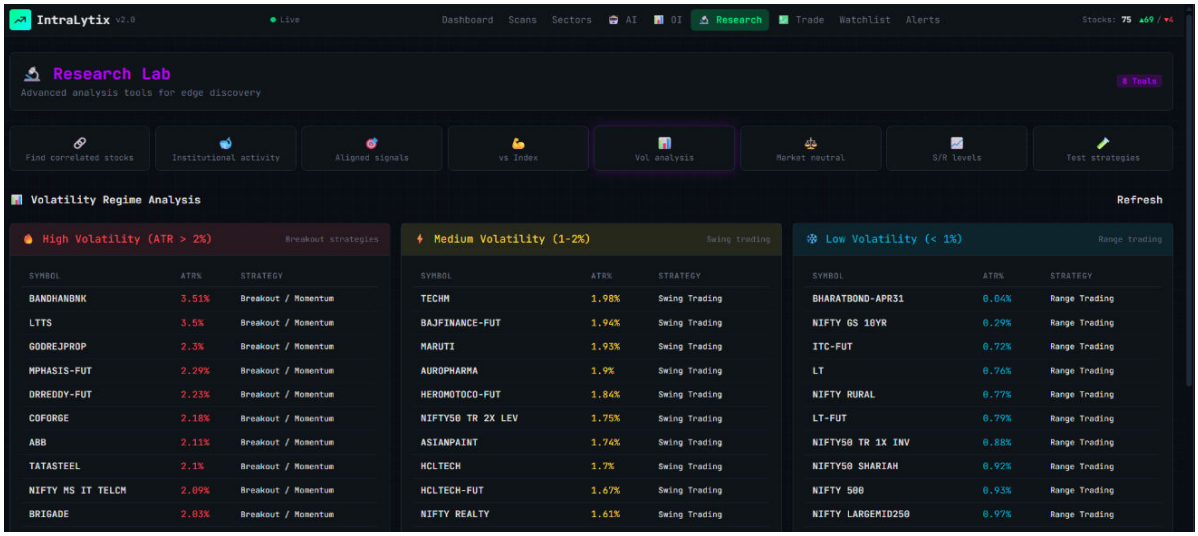


5. RESEARCH LAB PAGE

Research Lab holds a total of 8 analysis tools that are considered advanced in nature. Such tools are usually absent in other trading software. These kinds of analysis tools make it easy for professional traders to undertake in-depth analysis. Some of these analysis tools, for example, “Correlation Finder” identify related stocks, “Smart Money Detector” identify where large institutions are involved in purchases and sales, and “Backtester” are used to test a particular trading strategy.



6. TRADE PAGE

The Trading page lets you place actual buy and sell orders directly from the app. It connects to your Zerodha account for order execution. You have varieties of order types: Market Order (buy/sell immediately at current price), Limit Order (buy/sell only at your specified price), Stop Loss Order-automatically exit if price goes against you, Bracket Order-entry + target + stoploss together. One can also view all his current positions and holdings. It provides: Buy/Sell order form, Market, Limit, SL, Bracket order types, Order book (pending orders), Positions- current trades, Holdings-stock you own, One click exit buttons.

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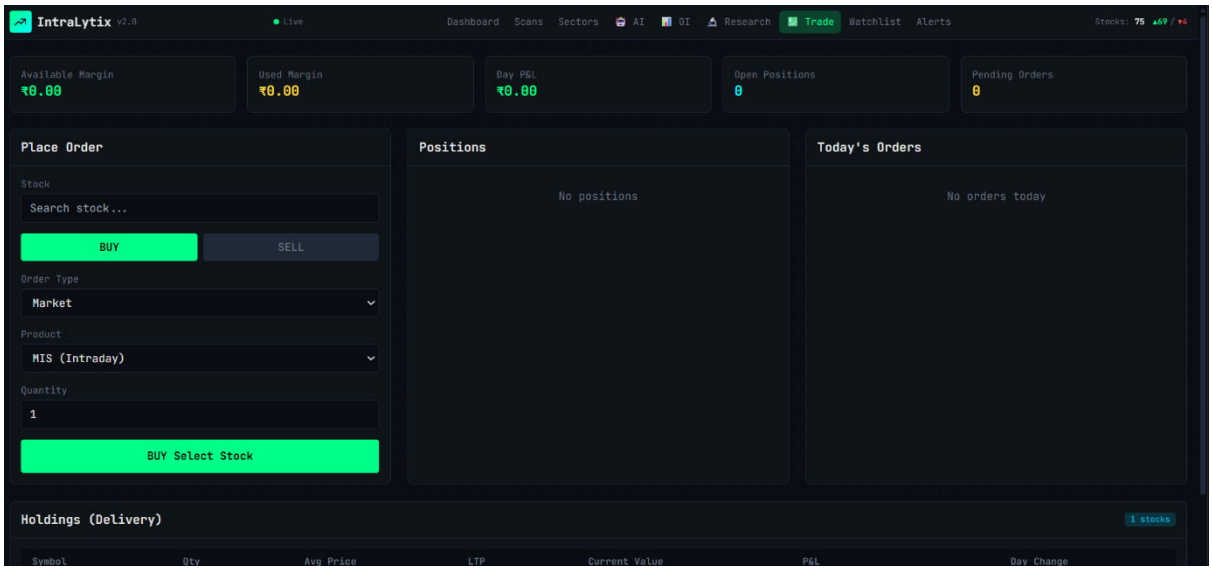
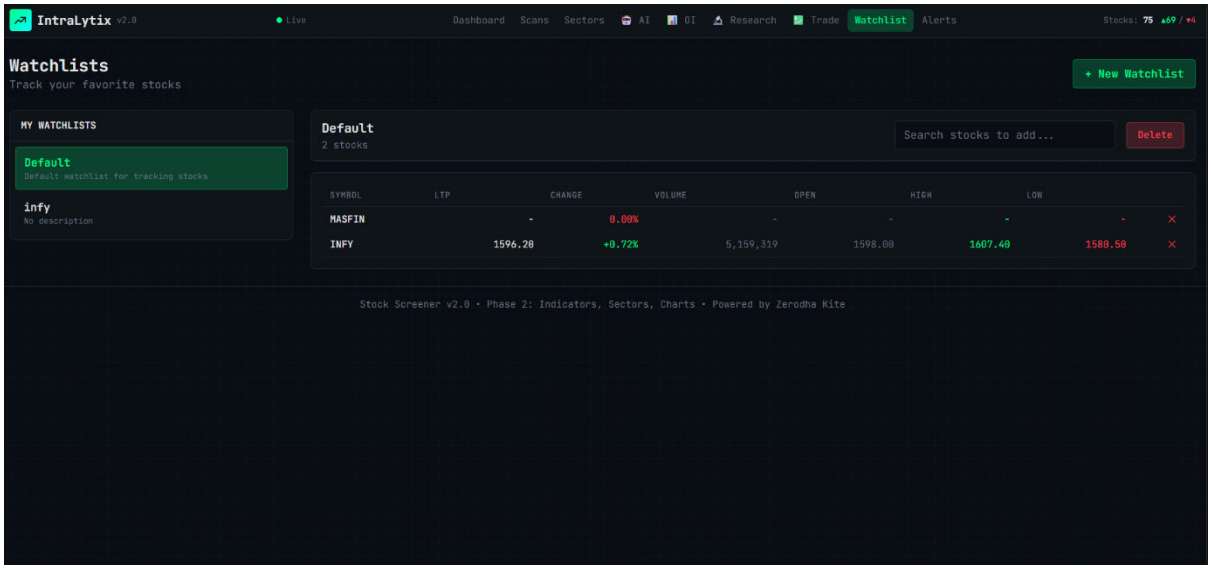


7. WATCHLIST PAGE

Watchlist page lets you create your own personal list of favorite stocks. Instead of searching for the same stocks every day, you can add them to a watchlist and monitor them easily. You can make multiple watchlists like "My Favorites", "Banking Stocks", or "Stocks to Buy". Watchlist displays live prices as well as updates for all your saved stocks. Stocks can be added to your watchlist as well as removed anytime."



8. ALERT PAGE

The Alerts page helps you set price notifications so you wouldn't have to stare at the screen all day. You can set an alert like "Tell me when RELIANCE goes above ₹2500" or "Alert me when TCS falls below ₹3800". At the instance when your target price is reached, it sends a notification immediately on Telegram. You can even set pattern alerts that notify you when a stock forms a particular candlestick pattern, like Doji or Hammer.

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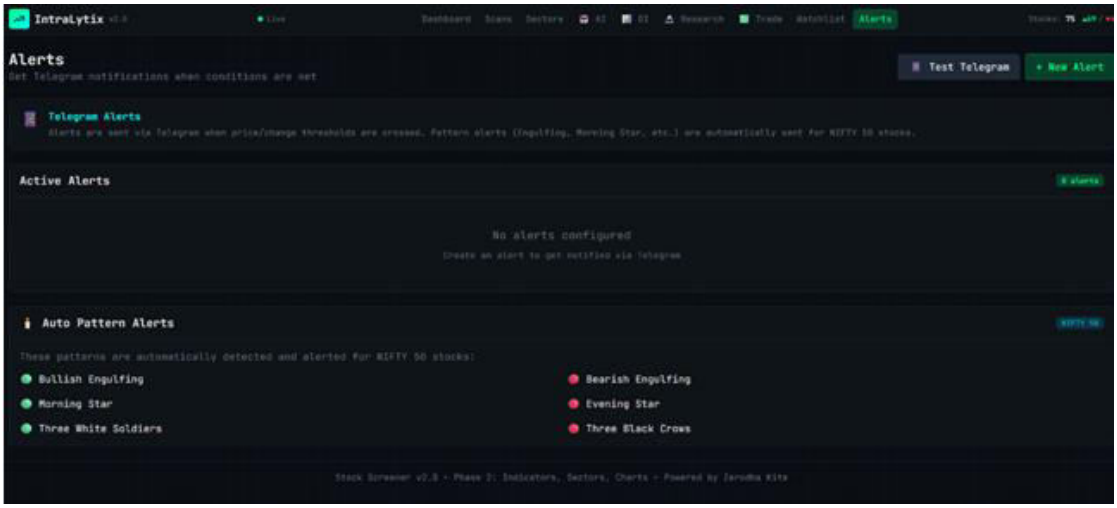

VIII. FUTURE UPDATES

Looking ahead, the system will be equipped with an AI portfolio manager that will recommend optimum stock distribution for traders. A news sentiment analyzer will also be incorporated to analyze market news and forecast effects on stock market prices. The system will be equipped with a social trading component that will enable traders to follow the methods employed by expert traders. Machine learning will be incorporated for more precise backtesting. Finally, a mobile app will be integrated with push notification services.

IX. CONCLUSION

The IntraLytix project thus offers a modern, intelligent, and user-friendly platform to traders of all categories. It integrates real-time market data, powerful scans, and sector insights to present the complete market overview before the user. Adding AI-based predictions to such analysis makes it faster, smarter, and more accurate than conventional tools. The advanced facilities like Research Lab and OI Analysis enable traders to make confident decisions based on data. Alerts and watchlists ensure users are never behind important price movements. Its clean design and smart automation elevate the system of trading manifold. Overall, the project delivers a comprehensive solution that bridges the gap between simple screeners and advanced trading platforms.

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