




INVESTMATE

AGENDA

 new/updates (check the bottom of the slide)

- Team Members
- Improvements
- Problem Statement
- Project Description
- Market Analysis
- Team Agreement
- Personas
- MVP
- Tech Stack
- Algorithms
- Diagrams
- User Acceptance criteria
- Sprint Schedule
- Test Cases
- Metrics
- Retrospective
- Wiki Link

MEET OUR TEAM



Venkatesh Nidumukkala
Backend Developer



Ankit Mhatre
Project Manager / ML Engineer



Mani Chandana Kilaru
Front End Developer



Tejaswi Koppula
Backend Developer



Uma Maheshwari Bichinepally
UI/UX Developer



Charan Raju m
Tester

IMPROVEMENTS FROM FEEDBACK

- Team Agreement
- Diagrams
- Recap for sprints
- Added Test Cases
- Added Completed/Committed ratio
- Future Sprint details in tabular format
- Better format for Retrospective
- Added Missing Link

PROBLEM STATEMENT

In the contemporary world of finance, a considerable number of young individuals aged 18 to 25 are perplexed by the dilemma of pursuing a career in this global trend, while experiencing various challenges in finding sources of practical experience and knowledge. Despite acquiring the principles taught in academic institutions, individuals encounter difficulties implementing them in real-life scenarios. This creates a proficiency gap between their educational knowledge and investment strategies, which arises from the complexities in the structure and the fear of monetary loss, a significant factor that should be addressed in the education platform. It is imperative to develop an easily understandable education platform that adopts a learner-based approach to bridge this gap.

PROBLEM DESCRIPTION

Project Name:	Investmate
Team:	Pace Super Kings
Project Description:	<p>For young individuals aged 18 to 25 navigating the complexities of modern finance, the proficiency gap between academic learning and practical investment strategies poses a significant challenge. This gap, stemming from the intricate nature of financial systems and the fear of monetary loss, highlights the need for an educational platform.</p> <p>The solution is an accessible, learner-focused application that demystifies financial concepts and bridges the theoretical-practical divide.</p> <p>Unlike traditional educational resources that may not fully address real-world application.</p> <p>this platform aims to empower young investors with the confidence and knowledge to engage effectively in the global financial landscape.</p> <p>our application helps everyone to have perfect investment strategies.</p>
Benefit Outcomes:	<p>There are numerous advantages and results from putting in place an educational platform designed to help young people understand the complexity of finance:</p> <ol style="list-style-type: none">1. Enhanced Financial Literacy: The platform would help users become more knowledgeable about financial terms, concepts, and tactics, enabling them to make well-informed choices about saves, investments, and financial planning.2. Increased Confidence: The platform would increase users' confidence in navigating financial markets and successfully managing their own finances by offering real-world examples and practical knowledge.3. Decreased Risk Aversion: Users may grow more tolerant of risk and feel more at ease investigating investing options as they learn more about financial concepts and obtain real-world experience through case studies or simulated trading.4. Improved Ability to Make Decisions: Users can improve their skills with individualized feedback and interactive learning courses.
Github Link:	https://github.com/htmw/2024S-pace-super-kings

MARKET ANALYSIS

The online investment platform market is aggressively rising at a CAGR of 14.4% to \$4.4 billion by the year 2028 due to AI's introduction and the popularity of digital investment. The main variables are the incorporation and application of AI algorithms for data analysis and risk management, increasing investments that are a direct result of economic growth, and the increase of high-net-worth individuals (HNWIs) in digital assets. Disadvantages such as complex regulatory requirements may stop penetration into new markets. In the development process, the market is subject to the influence of the spread of blockchain technology and, to a great extent, the COVID-19 pandemic, which was considered the catalyst for the increased volume of investments via digital platforms.

TEAM AGREEMENT

- Each team member shall actively listen to and consider one another's opinions and perspectives, fostering an environment of open communication and constructive feedback. We will engage in respectful dialogue, valuing diverse viewpoints.
- Decisions regarding project workflow will be made collectively through discussions and deliberations. We will ensure that all voices are heard, and the majority opinion will guide our actions, promoting a sense of ownership and commitment to the project.
- We are committed to upholding the highest standards of professionalism at all times. Inappropriate behavior, such as disrespect, discrimination, or harassment, is strictly prohibited. Any instances of misconduct shall be promptly reported to the team leader or project supervisor for appropriate action, ensuring a safe and inclusive working environment for all team members.
- Recognizing the unique strengths and expertise of each team member, we will leverage our collective talents to contribute effectively to the project. We will actively seek opportunities to collaborate, support, and assist one another, fostering a culture of mutual respect and cooperation. Through our combined efforts, we will strive for excellence in all aspects of our work.
- Regular team meetings will be crucial forums for discussion, planning, and decision-making. We will actively participate in these meetings, sharing updates on our progress, addressing challenges, and brainstorming solutions collaboratively.
- All team members must attend all scheduled meetings. In the event of unavoidable conflicts, timely communication and proactive efforts to reschedule or catch up on missed discussions will be prioritized, ensuring that no team member is left behind.
- We are committed to meeting all assigned tasks and deadlines promptly, demonstrating reliability and accountability in our work. Should any team member encounter difficulties or require assistance, we will proactively seek help from our peers, fostering a culture of support and collaboration.
- Recognizing the importance of timely completion, we understand that extensions beyond agreed deadlines will be granted with seriousness. We will prioritize effective time management and proactive communication to ensure the successful execution of our project deliverables.
- Clear and transparent communication is essential for effective collaboration. We will utilize Slack as our primary communication platform, actively engaging in discussions, sharing updates, and seeking clarification when needed.
- All team members are expected to participate in Slack discussions regularly, responding promptly to messages and actively contributing to the exchange of ideas. Through our collective efforts, we will maintain open lines of communication, fostering a culture of transparency and collaboration.





PERSONAS



PERSONA - 1



- Name: Priya
- Age: 23
- Occupation: College student in the final year, aspiring to start her own business.
- Investment Experience: Minimal experience.
- Goals: To acquire investment management skills for better financial management.
- Challenges: Unable to balance academic responsibilities, entrepreneurial planning and investment learning.

PERSONA - 2



- Name: Sara
- Age: 20
- Occupation: College student majoring in English Literature.
- Investment Experience: None.
- Goals: Interested in learning about personal finance and investing to start saving for the better future
- Challenges: Unable to understand the financial terms

PERSONA - 3


- Name: Michael
- Age: 25
- Occupation: College student majoring in finance.
- Investment Experience: No practical experience.
- Goals: To gain hands-on experience in the stock market using his classroom knowledge.
- Challenges: Finds it difficult to apply his theoretical knowledge in real-world



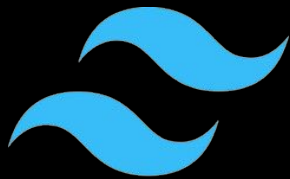


MINIMAL VIABLE PRODUCT
(MVP)



- 
- ML-driven Trading Simulations
 - Adaptive Risk Management Tools
 - Personalized Learning Paths

TECHNOLOGIES



ALGORITHMS

YOLOv8s : <https://huggingface.co/foducom/stockmarket-pattern-detection-yolov8>

The YOLOv8s Stock Market Pattern Detection model is an object detection model based on the YOLO (You Only Look Once) framework. It is designed to detect various chart patterns in real-time stock market trading video data. The model aids traders and investors by automating the analysis of chart patterns, providing timely insights for informed decision-making. The model has been fine-tuned on a diverse dataset and achieved high accuracy in detecting and classifying stock market patterns in live trading scenarios.

LSTM : <https://www.kaggle.com/code/faressayah/stock-market-analysis-prediction-using-lstm>

Using Seaborn and Matplotlib, analyzing the risk of a stock, based on its previous performance history. Also predicting future stock prices through a Long Short Term Memory (LSTM) method.

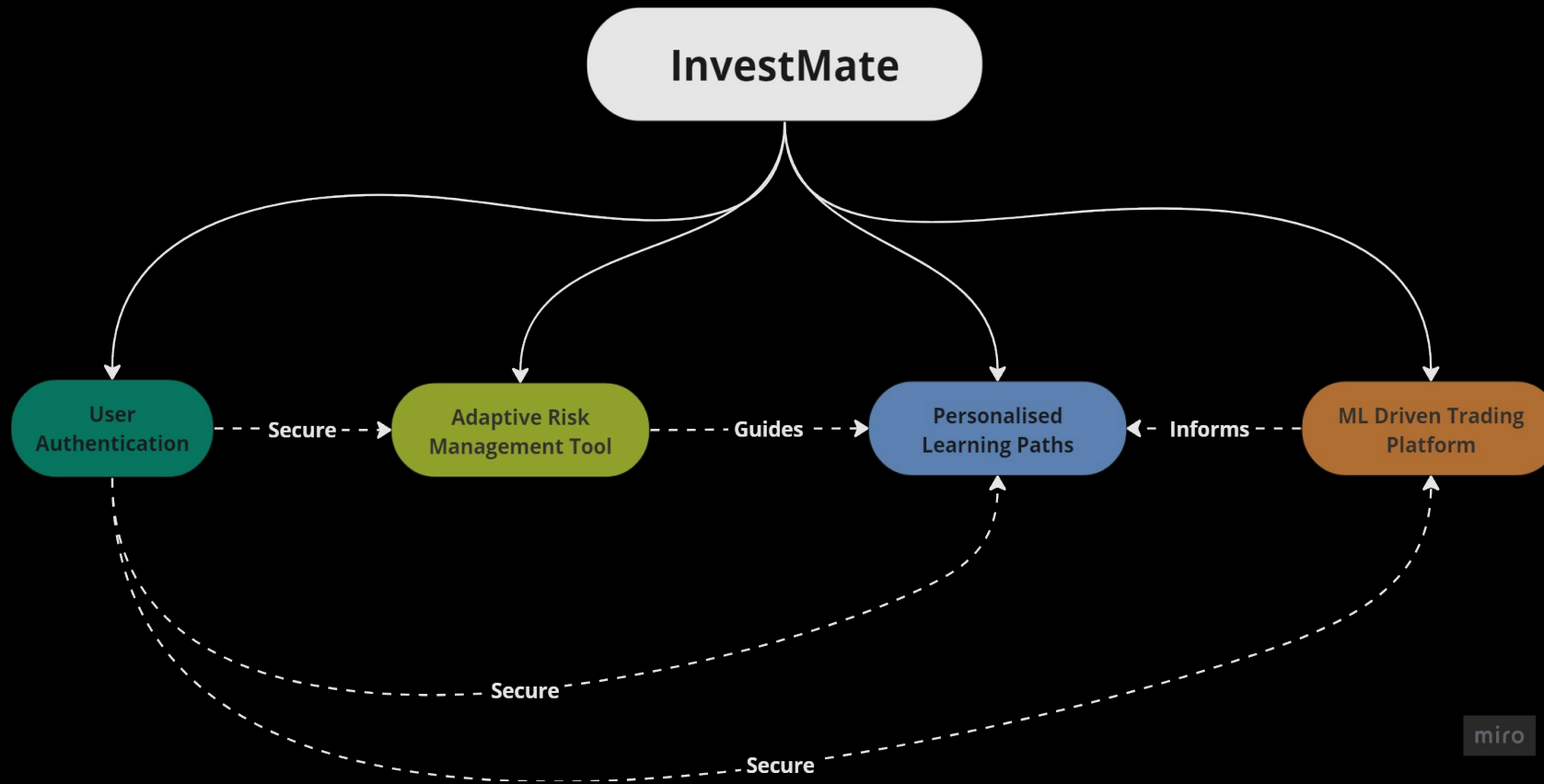




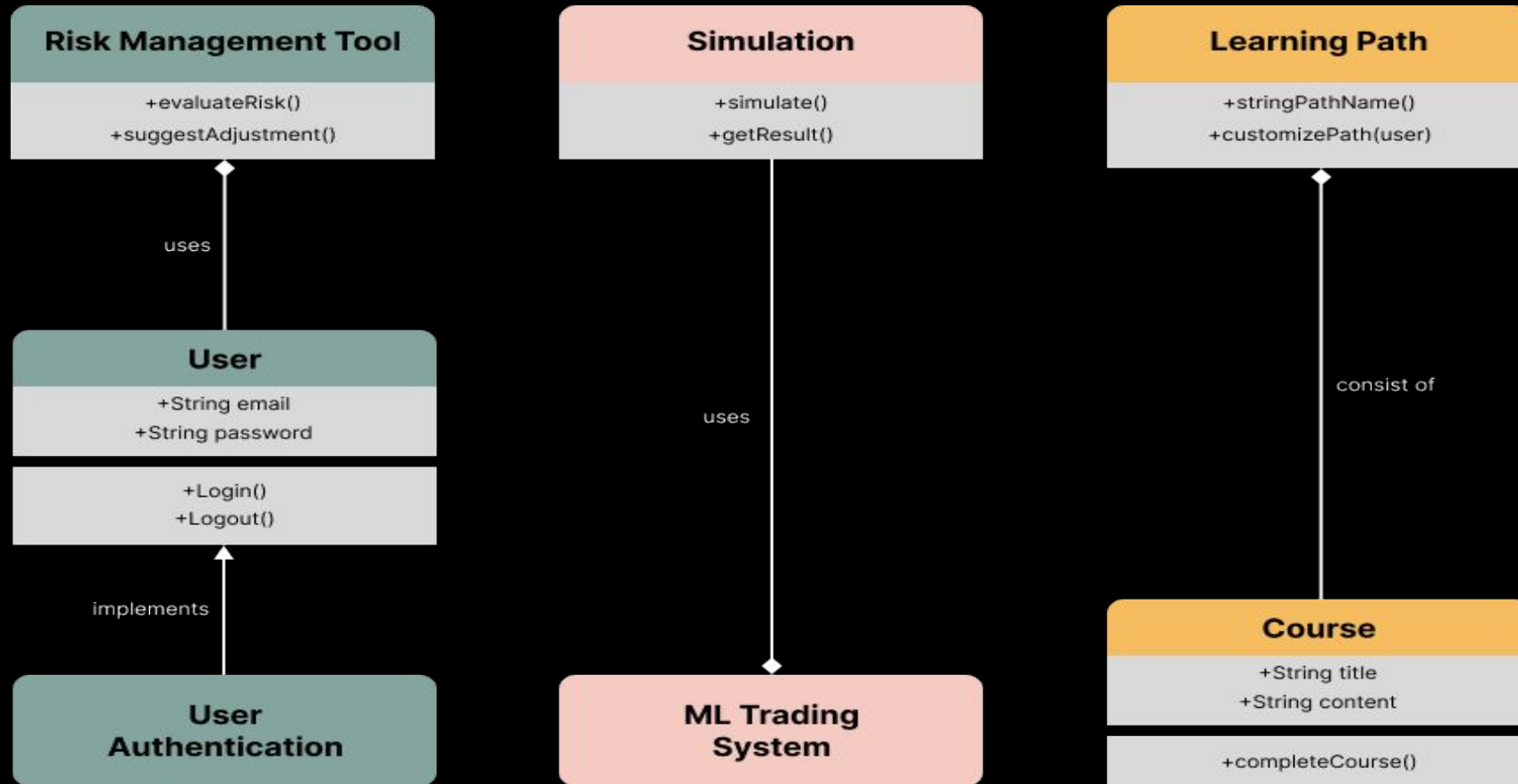
DIAGRAMS



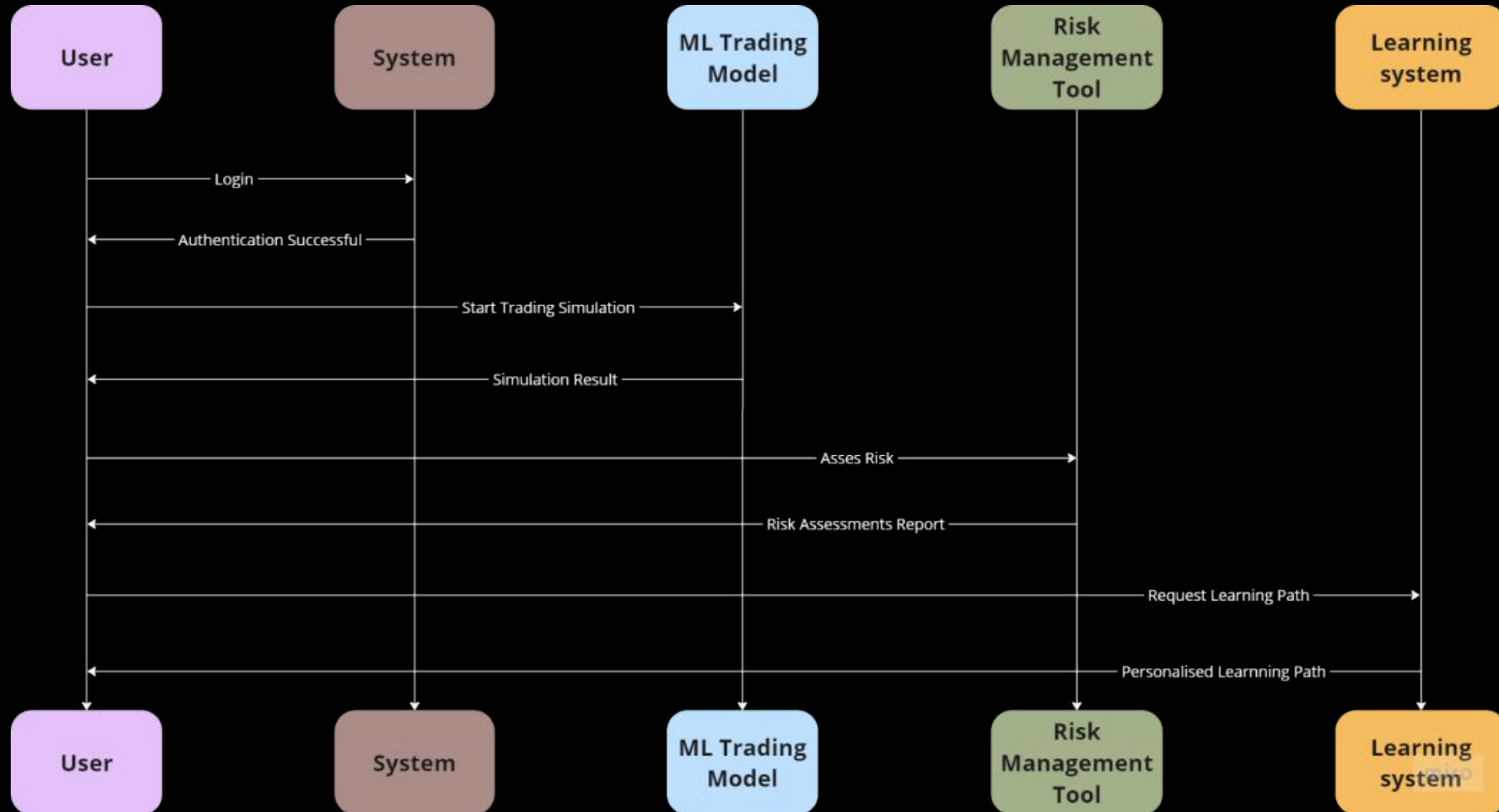
CONCEPTUAL DIAGRAM



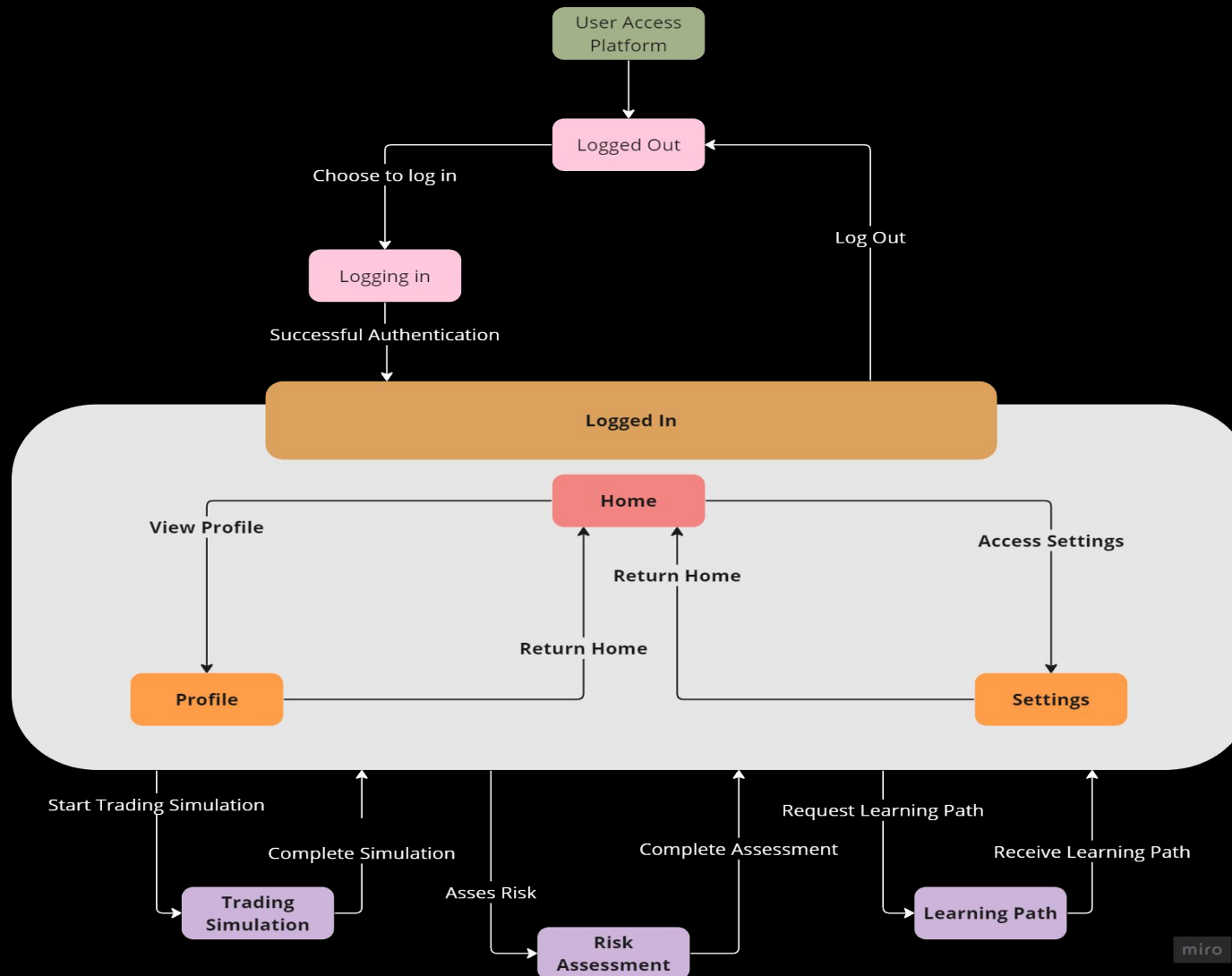
CLASS DIAGRAM



SEQUENCE DIAGRAM



STATE DIAGRAM



CONTEXT DIAGRAM



USER STORIES /ACCEPTANCE CRITERIA

Story ID	Role	Goal	Reason	Acceptance Criteria
1	New User	Sign up and log in functionality	Access platform features	Sign up with email – Log in with email and Password reset option.
2	User	Access to trading simulation	Learn trading risk free	G Selection of trading simulations- Feedback on trading decisions
3	User	Risk management tools	Understand and manage trading risks	Visibility of strategy risky Suggestions for risk mitigation.
4	User	Personalized learning paths	Enhance trading knowledge	Topic selection based on interest. Structured list of lessons and resources
5	User	Real-time market data in simulations	Realistic trading experience	Display of live market prices. Access to historical market data.
6	User	Secure data handling	Confidence in platform use	Secure storage of personal information. Privacy Settings management.



RECAP





SPRINT 1

Type	Key	Summary	Assignee	Story point estimate	Status	P
	IV-16	Sprint 1 documentation	 venkatesh	3	DONE ▾	=
	IV-15	Tech Stack Finalization	 Ankit Mhatre	5	DONE ▾	=
	IV-14	Research on investment theories	 teju	5	DONE ▾	=
	IV-13	Roles and responsibilities	 mani.chandana	2	DONE ▾	=
	IV-12	Idea finalization	 uma	3	DONE ▾	=

 STORY



SPRINT 2

Type	Key	Summary	Assignee	Story point estimate	Status	P
	IV-39	Dockerize microservices	 Ankit Mhatre	3	DONE ▾	=
	IV-38	Test ping/pong	 mani.chandana	3	DONE ▾	=
	IV-37	Login Page	 charan.raju	3	DONE ▾	=
	IV-36	Configure the IDE individually	 Ankit Mhatre	3	DONE ▾	=
	IV-23	Learning path framework	 mani.chandana	8	DONE ▾	=
	IV-19	DB integration	 venkatesh	3	DONE ▾	=
	IV-18	User Auth	 uma	1	DONE ▾	=
	IV-17	Basic System setup	 teju	1	DONE ▾	=

 STORY





PRODUCT BACKLOG



<input type="checkbox"/> ▼ Backlog (7 issues)		10	16	0	Create sprint
IV-35 Model training : Add more features to the yolov8 model		TO DO ▼	3	=	
IV-32 Devops: Deploy on AWS EC2 and create a automated deployment pipeline us...		TO DO ▼	2	=	
IV-21 basic trading simulation engine		IN PROGRESS ▼	8	^	AM
IV-22 risk management tool research		IN PROGRESS ▼	8	=	
IV-40 User Interface Refinement & add Motion inforgraphics		TO DO ▼	2	=	AM
IV-41 Integrate Stock News for realtime information[Ticker format]		TO DO ▼	3	=	AM
IV-42 Add more financial instrument		TO DO ▼	-	=	AM

STORY

















SPRINT 3



SPRINT 3 BACKLOG

Type	Key	Summary	Assignee	Story point estimate	Status
	IV-31	Pipeline for Risk Assessment for Individual portfolios	 mani.chandana	3	DONE ▾
	IV-27	Integrate pattern Prediction Algorithm	 Ankit Mhatre	8	DONE ▾
	IV-24	Show stock charts	 venkatesh	3	DONE ▾
	IV-21	basic trading simulation engine	 Ankit Mhatre	8	IN PROGRESS ▾
	IV-26	Categorize learning topics and add more nested modules	 uma	5	DONE ▾
	IV-25	Create rooms, and connect the AI Assistant	 charan.raju	5	DONE ▾

 STORY



ACCEPTANCE CRITERIA (contd.)

Sr.No	Summary	Acceptance Criteria
1	Pipeline for Risk Assessment for Individual portfolios	Collect portfolio data Calculate risk metrics
2	Integrate pattern Prediction Algorithm	Perform pattern prediction Allow further customisation
3	Categorize learning topics and add more nested modules	Provide a mechanism for topic categorization Enable creation of nested modules
4	Create rooms, and connect the AI Assistant	Allow room creation Respond to user queries Generate a screenshot on the go
5	Show stock charts	Display Stock chart
6	Basic trading simulation engine(building an exchange)	Place buy and sell orders View their order book Track their portfolio balance



TEST CASES



Test case	Test Steps	Expected Results	Actual Results
Login and View Tradable Assets	<ol style="list-style-type: none"> 1. Launch the trading simulation platform. 2. Enter valid login credentials. 3. Verify that the user is successfully logged in and can see a list of tradable assets. 4. Verify that the list includes basic information like stock ticker symbol, company name, and current price. 	- User successfully logs in. - A list of tradable assets is displayed. - Each asset entry includes ticker symbol, company name, and current price.	The user successfully logs in and sees a list of tradable assets with information like ticker symbol, company name, and current price.
Place a Buy Order	<ol style="list-style-type: none"> 1. Login to the platform. 2. Choose a tradable asset from the list. 3. Enter a valid quantity of shares to buy. 4. (Optional) Enter a desired price per share (limit order). 5. Submit the buy order. 6. Verify that the order is successfully placed and reflected in the user's order book. 	- Buy order is submitted successfully. - Order is reflected in the user's order book. - User's account balance is deducted for the purchase (considering fees).	The buy order is submitted successfully, reflected in the user's order book, and the user's account balance is deducted for the purchase (considering any transaction fees)
Place a Sell Order	<ol style="list-style-type: none"> 1. Login to the platform. 2. Ensure the user has a holding of the desired asset (complete a buy order beforehand if necessary). 3. Choose the asset you want to sell from your holdings. 4. Enter a valid quantity of shares to sell (within available holding). 5. (Optional) Enter a desired price per share (limit order). 6. Submit the sell order. 7. Verify that the order is successfully placed and reflected in the user's order book. 	- Sell order is submitted successfully. - Order is reflected in the user's order book. - User's portfolio reflects reduced holding and updated balance (after execution).	The sell order is submitted successfully, reflected in the user's order book, and the user's portfolio reflects the reduced holding and updated balance upon successful execution (considering any transaction fees).



Order Matching and Execution	<ol style="list-style-type: none"> 1. Login to the platform with multiple users (or create test accounts). 2. User A places a buy order for Asset X at a specific price. 3. User B places a sell order for Asset X at the same price (or a lower price for a sell order). 4. Verify that the system automatically matches these orders and executes the trade. 5. Verify that User A's order book shows the order as filled and their portfolio reflects the purchased shares. 6. Verify that User B's order book shows the order as filled and their portfolio reflects the reduced holding and updated balance. 	<p>- Matching orders are automatically identified. - Trade is executed successfully. - User portfolios and order books reflect the completed transaction.</p>	<p>Matching orders are identified, the trade is executed successfully, and both user portfolios and order books are updated to reflect the completed transaction.</p>
Order Cancellation	<ol style="list-style-type: none"> 1. Login to the platform. 2. Place a buy or sell order for an asset. 3. Locate the open order in the user's order book. 4. Verify the option to cancel the order is available. 5. Cancel the open order. 6. Verify that the order is removed from the user's order book and is no longer listed as pending. 	<p>- User can cancel the open order. - Order is removed from the user's order book. - Order status reflects cancellation.</p>	<p>The user successfully cancels the open order, which is removed from their order book, and the order status reflects cancellation.</p>
Order Validation and Error Handling	<ol style="list-style-type: none"> 1. Login to the platform. 2. Try placing an order with an invalid quantity (e.g., negative number). 3. Verify that the system displays an error message indicating the issue. 4. Try placing an order for a non-existent asset. 5. Verify that the system displays an error message indicating the unavailable asset. 6. Try placing a sell order for a quantity exceeding the user's holdings. 7. Verify that the system displays an error message indicating insufficient funds or shares. 		





METRICS

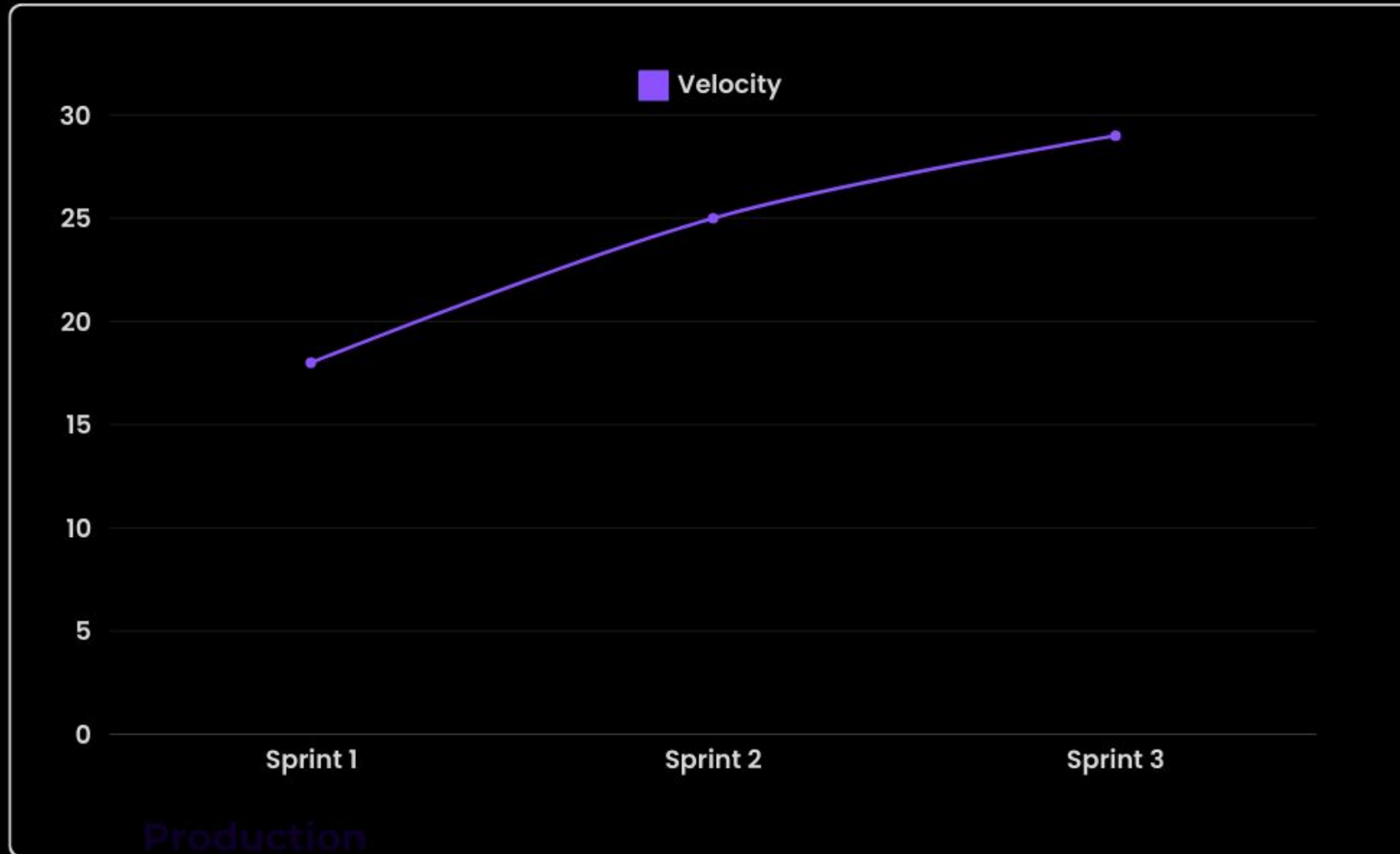


TEAM VELOCITY

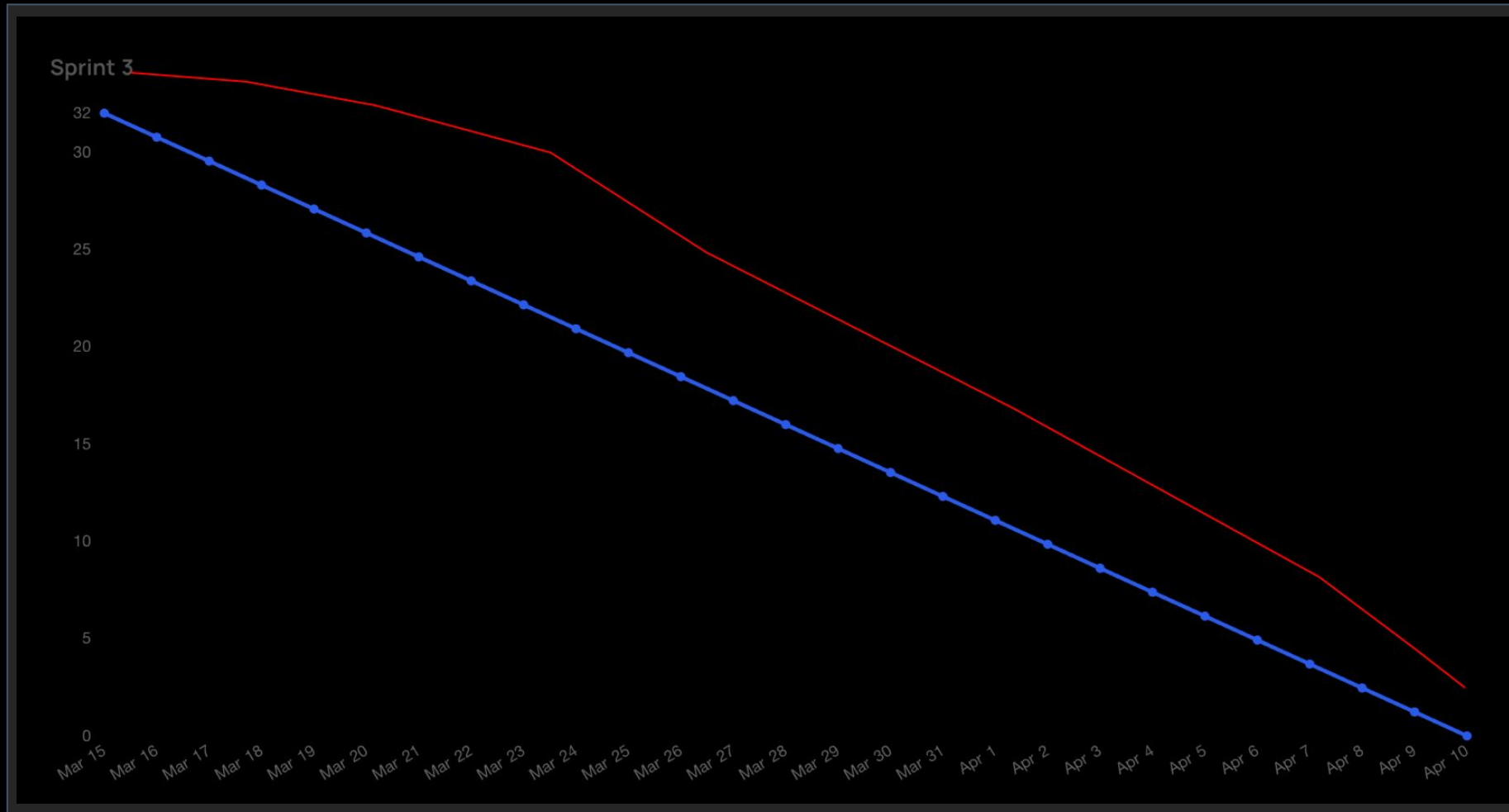
- 29 story points



HISTORICAL VELOCITY



SPRINT 3, BURNDOWN CHART

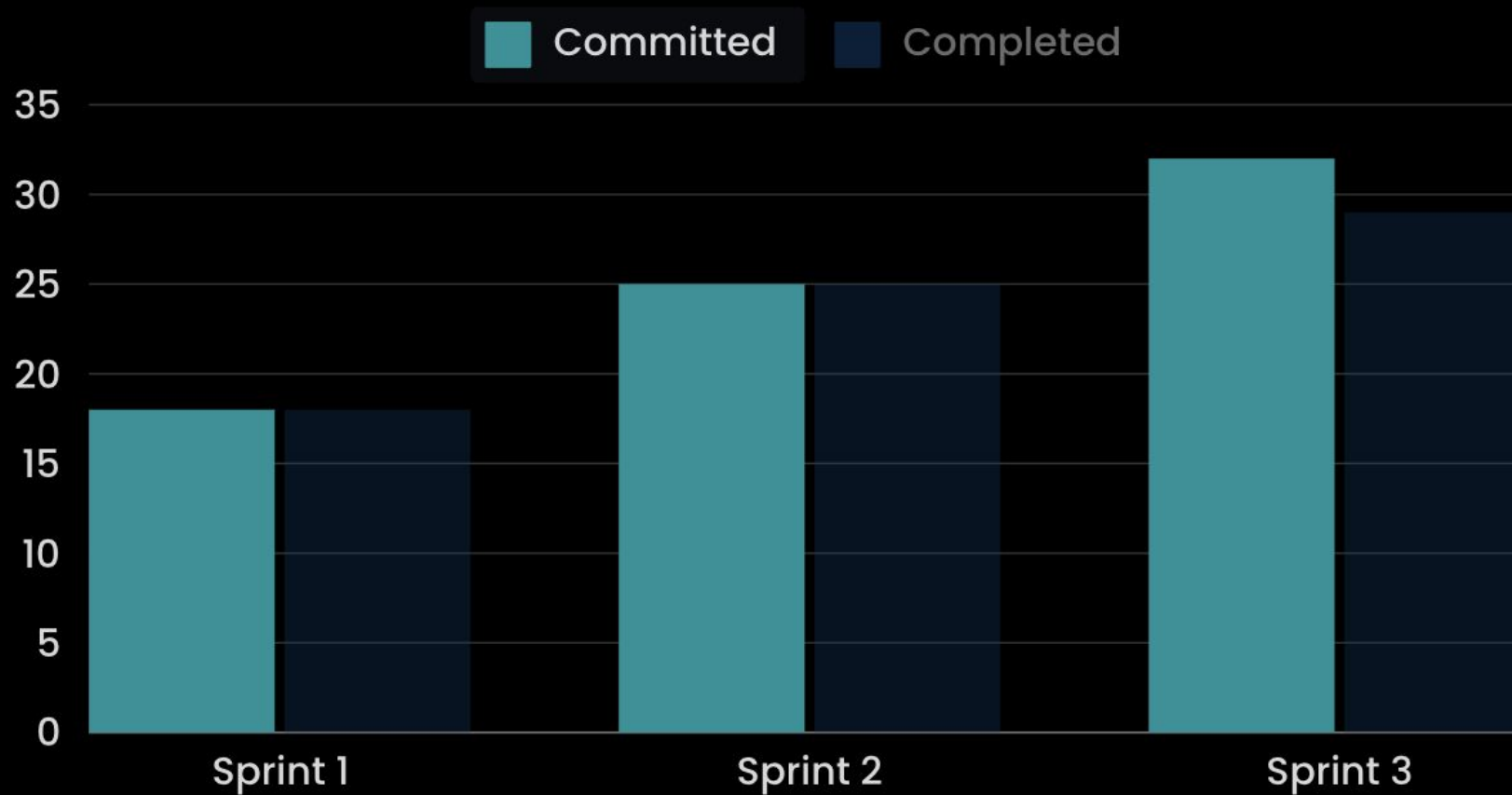


COMPLETED/COMMITTED RATIO

- 90%



HISTORICAL COMPLETED/COMMITTED RATIO





RETROSPECTIVE



RETROSPECTIVE

What went well!

Spring break helped us a lot

Done a great job in presentation.

Adoption of JIRA helped us tremendously

Work communication has drastically improved

Better than expected results for stock simulation development

Successful at integration for stock modules and the bot

Completed integrating the stock module.

Amazing coordination compared to the previous sprints

Integration worked wonders with the AI assistant and the stock module

We are able to deliver individually (way better than last time)

What could be improved?

Keep referring to the scrum guides and learn more.

Work on feature discoverability

Due to schedule conflicts, we couldn't make the most of our Friday meetings.

Pattern prediction model still needs work for the launch

Actionable

Take steps towards more severe training

Increase labels/features for the ML model to accommodate more patterns

pay more attention towards better documentation

Take up more work for the Sprint(since we handling adequately)

Start gathering feedback for usability studies of the web platform

Estimate the story points for a story with more context and clarity

Schedule calendar invites (due to Friday conflicts)





miro



SPRINT 4



SPRINT 4

IV-22 risk management tool research		IN PROGRESS ▾	8	=	
IV-21 basic trading simulation engine(building an exchange)		IN PROGRESS ▾	8	^	AM
IV-32 Devops: Deploy on AWS EC2 and create a automated deployment pipeline us...		TO DO ▾	2	=	
IV-44 Refine AI chat bot for handling mixed queries		TO DO ▾	8	=	AM
IV-41 Integrate Stock News for realtime information[Ticker format]		TO DO ▾	3	=	AM





PROJECT DEMO



Free and Open

stock market and financial education

Welcome to InvestMate – your ultimate stock market companion! Dive into a world of learning and simulation tailored for young minds aged 18 to 25. Explore real-time market data, practice trading strategies, and master pattern recognition with ease. Join our vibrant community and empower yourself with the knowledge and skills to navigate the financial world confidently. Start your journey with InvestMate today!

[Get started →](#)

Welcome Back to InvestMate

Your gateway to financial empowerment

Sign in to your InvestMate account and continue your journey towards financial empowerment. With InvestMate, you can explore learning modules, analyze stocks, utilize risk management tools, and interact with our AI-powered chatbot to enhance your investment strategies. Join our community of learners and investors today.

Welcome Back!

Sign into your account

Username

ankitmhatre@hotmail.com

Password

Login

[Forget Password ?](#)

[Don't have an account? Sign Up](#)

Unlock Your Investment Potential with InvestMate

Start Your Journey to stock market Mastery

Discover the world of stock market investing with InvestMate. Gain access to comprehensive learning modules, advanced trading strategies, risk management tools, and an AI-powered chatbot designed to enhance your knowledge and guide your investment decisions. Sign up now to unlock a wealth of resources and embark on your path to financial success.

Sign into your account

First Name

Last Name



Email



Birth Date



Password



Sign Up

[Already have an account? Sign In](#)

Free and Open

stock market and financial education

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[Get started →](#)

Explore InvestMate



Learn



Stock Simulator



Risk Calculator



Learning Modules

1

Introduction to Stock

5 min read

Discover the essential role of the stock market in securing financial stability. Learn its basics, operations, and intermediaries in this module, providing a comprehensive foundation for beginners venturing into the world of stock trading.

[View module](#)

2

Stock Trading Basics

5 min read

Stock trading basics involve buying and selling shares of companies. Investors aim to profit from price changes. Key terms include stocks, shares, and dividends. Understanding market trends, company fundamentals, and effective risk management is crucial for success.

[View module](#)

3

Managing a Portfolio

5 min read

Effectively managing your stock portfolio involves diversification, risk assessment, and periodic review. Balancing high-risk, high-reward investments with stable assets can mitigate losses. Regularly reassessing your portfolio ensures alignment with financial goals and risk tolerance.

[View module](#)

1

Introduction to Stocks

Quick Links

[The stock market](#)[How does the stock market work](#)[Getting to know the stock exchanges](#)[How to buy and sell stocks](#)[What owning a stock means](#)[What is a penny stock?](#)

Discover the essential role of the stock market in securing financial stability. Learn its basics, operations, and intermediaries in this module, providing a comprehensive foundation for beginners venturing into the world of stock trading.

Understanding the stock market is essential for anyone looking to secure their financial stability and potentially grow their wealth over time. The stock market serves as a crucial component of the global economy, facilitating the buying and selling of securities such as stocks and bonds. By providing a platform for companies to raise capital and investors to participate in ownership, the stock market plays a pivotal role in allocating resources efficiently within the economy.

Search Stocks

[Download chart](#)[Learn using AI](#)

Search Stocks

apple

[Save image](#)[Download chart](#)[Learn using AI](#)

\$8530

+800 -635

Hi, Ankit



Search Stock Name..



Analyze with AI

Chatbot



Analyzing...

Q. What do you think does the current chart depicts?

1) Head and Shoulder

2) Hanging man

Ask..

SEND

Today's Stock History

Stock Name	Rate (USD)	Earn
INFY	1500	-2650 (150%)
IBM	2560	+2650 (10%)
IBM	2560	+3652 (80%)

Future Trade

Avbl Balance 210.800 USDT

Price

USDT

Size

USDT ▾

TP/SL



\$8530

+800 -635

Hi, Ankit



Search Stock Name..



Analyze with AI

Today's Stock History

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Future Trade

Avbl Balance 210.800 USDT

Price USDT

Size USDT

TP/SL

Chatbot



Analyzing...

Q. What do you think does the current chart depicts?

1] Head and Shoulder

2] Hanging man

3] Hammer



Hammer

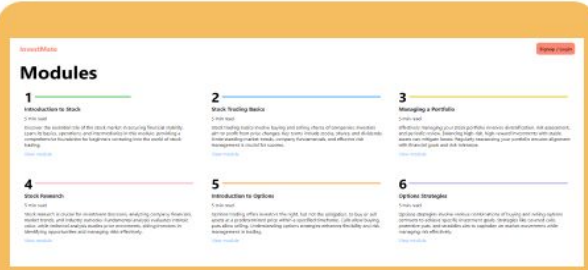


Oh Sorry, that was a wrong answer?

Ask..

SEND





Learning Modules



Generate Charts



Minimal UI

Beginner Friendly



Safe



Secure

InvestMate



Pattern
Recognition



Risk Assessment

AI Stock Simulator

AI Powered



Zero Latency Stock Pattern
Predictor



Chat Assistance



IMPORTANT API's

- Yahoo Finance (<https://finance.yahoo.com>)
- Financial Modelling Prep (<https://financialmodelingprep.com>)
- Alphavantage (<https://www.alphavantage.co/>)
- News API (<https://newsapi.org>)
- Apex Charts (<https://apexcharts.com/>)
- Hugging Face (<https://huggingface.co/foduucm/>)
- PyPi.com
- NodeJS (<https://nodejs.org/>)
- Investopedia (<https://www.investopedia.com/>)
- Bootstrap (<https://www.mdbootstrap.com/>)



GITHUB



<https://github.com/htmw/2024S-pace-super-kings>





WIKI



<https://github.com/htmw/2024S-pace-super-kings/wiki>



REFERENCES

- [The Random Forest Model for Analyzing and Forecasting the US Stock Market in the Context of Smart Finance](#)
- [Learning Through Equity Trading Simulation](#)
- [Conducting Financial Risk assessment](#)



THANK YOU
