INVESTIQ

BY TEAM 02 TECHNO STACK

AGENDA

- Team Member Roles and Responsibilities
- Problem Statement
- Project Description
- Personas
- Technologies
- Algorithms
- Project Schedule – Cadence
- Team Working Agreement
- RetrospectiveGroup
- Wikipage Link

TEAM MEMBERS

Ruchitha Reddy Kuthuru – Product Manager and Full Stack developer

Mahidhar Reddy Kandula – Machine learning Engineer

TEAM MEMBERS

Afrida Mehanaz Shaik– Machine Learning Engineer

Sharan Jagini – Backend Engineer and Tester

TEAM MEMBERS

Nadeem Hussain Shaik – Frontend Developer

Shrinidhi Daheechi – Frontend Developer

PROBLEM STATEMENT

Investors often find it challenging to make informed decisions due to overwhelming market information, constant fluctuations, and a lack of personalized guidance. Many existing tools provide data but do not offer meaningful insights tailored to individual needs. This app aims to simplify investment decisions by analyzing market trends, tracking relevant news, and offering timely recommendations based on personal financial goals and life events. Combining real-time updates with user-specific insights helps investors stay informed and make smarter financial choices with confidence.

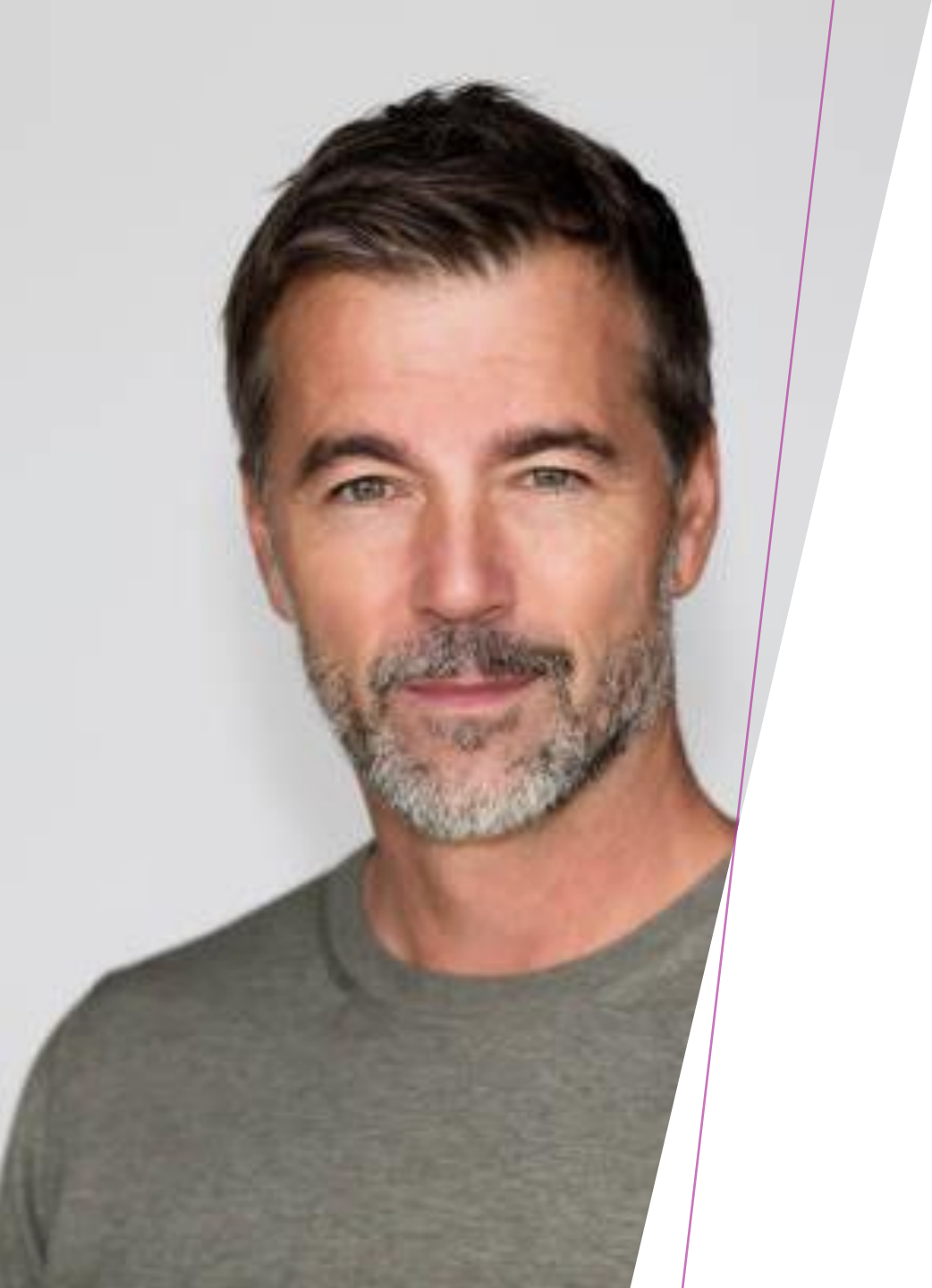
PROJECT DESCRIPTION

Project Name:	InvestIQ
Team:	Techno Stack
Project Description:	For investors who struggle with analyzing market trends and making informed financial decisions, the InvestIQ AI application is a smart investment assistant that analyzes stock market trends, processes real-time financial news, and provides personalized investment insights and risk alerts. Unlike traditional investment platforms that only offer raw data and generic analytics, our application leverages AI-driven time series analysis and natural language processing to deliver real-time, context-aware financial recommendations tailored to users' personal financial goals and life events.
Benefit Outcomes:	• Better investment decisions with AI-driven insights and alerts • Personalized financial recommendations based on user behavior and market trends • Real-time market sentiment analysis for timely and informed trading • Reduced research time by consolidating key financial insights into a single platform
Github Link:	https://github.com/htmw/2025S-Techno-Stack/wiki

PERSONA

Aarav Sharma

- **Age:** 28
- **Occupation:** Software Engineer
- **Investment Experience:** Intermediate
- **Goals:** Simplify his investment decision-making process by utilizing clear, actionable insights from real-time news.
- **Pain Points:** Feels overwhelmed by the vast amount of market data and frustrated by platforms that fail to provide timely news analysis.
- **Description:** Aarav values technology and data-driven insights; he seeks a tool that aggregates real-time news, enabling him to quickly grasp market shifts without the distraction of raw stock data.
- **Challenges:**
  - Struggles with filtering relevant financial information from the overwhelming amount of market data.
  - Finds it time-consuming to track news manually and correlate it with market trends.



PERSONA

Thomas Shelby

- **Age:** 40
- **Occupation:** Corporate Manager
- **Investment Experience:** Beginner to Intermediate
- **Goals:** Achieve steady portfolio growth by staying informed about key market developments through timely news updates.
- **Pain Points:** Finds traditional investment platforms cluttered with irrelevant data and lacking a focused approach to current financial news.
- **Description:** With a busy schedule, Thomas needs a user-friendly platform that provides curated real-time news and actionable insights, enabling him to make confident, long-term financial decisions without continuously monitoring fluctuating stock figures.
- **Challenges:**
  - Has limited time to stay updated on financial news and market changes.
  - Prefers risk-averse investments but struggles with identifying safe and promising opportunities.

PERSONA

Sanjana Reddy

- **Age:** 35
- **Occupation:** Financial Analyst
- **Investment Experience:** Advanced
- **Goals:** Optimize her investment strategy with comprehensive market analysis based on the latest financial news.
- **Pain Points:** Frustrated with generic investment tools that do not integrate timely news, leaving her without the nuanced insights she needs.
- **Description:** Sanjana is analytical and detail-oriented, searching for a sophisticated platform emphasizing real-time news analysis to provide deep insights and tailored recommendations rather than just raw stock data.
- **Challenges:**
  - Struggles with quickly assessing the sentiment of large volumes of financial news.
  - It requires advanced analytics but finds that many tools lack deep AI-driven insights.

TECHNOLOGIES - BACKEND

- **Flask:** A lightweight Python framework ideal for building RESTful APIs, easily integrating with machine learning models, and simplifying backend logic.
- **Node.js:** Offers non-blocking, event-driven architecture, making it great for handling real-time operations and concurrent tasks.

TECHNOLOGIES - FRONTEND

- **Next.js:** Offers server-side rendering and static site generation, resulting in fast, SEO-friendly pages and a strong user experience interface.
- **TypeScript:** Improves code quality and maintainability by providing static type checking, which reduces runtime errors.

TECHNOLOGIES - DATABASE

- PostgreSQL is a powerful, open-source relational database known for its reliability, scalability, and support for complex queries, ensuring secure and efficient data storage.

TECHNOLOGIES - APIS

Financial News API & Polygon API

- These APIs supply real-time financial news and market data, enabling the application to deliver timely and actionable insights without relying on raw stock data.

polygon.io

TECHNOLOGIES – MACHINE LEARNING

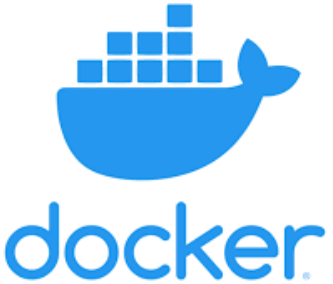
PyTorch is selected for its dynamic computation graph and user-friendly interface, making it ideal for developing and training deep learning models used in sentiment analysis and trending forecasting.

TECHNOLOGIES – HOSTING & DEPLOYMENT

- **Vercel**: Perfect for quickly deploying frontend applications with high performance and scalability.
- **DigitalOcean**: Offers dependable and scalable hosting for backend services and the entire application deployment.

TECHNOLOGIES – DEVELOPMENT TOOLS

- **Visual Studio Code**: A versatile code editor featuring extensive extensions and integrated debugging that enhances the developer experience productivity.
- **Postman**: Essential for testing APIs, confirming our endpoints function as expected during development.
- **Git**: To enable version control, enhance collaborative development, and improve code management.
- **Docker**: Used for containerization, ensuring consistency across development, testing, and production environments.
- **Slack**: Facilitates effective team communication and project management.



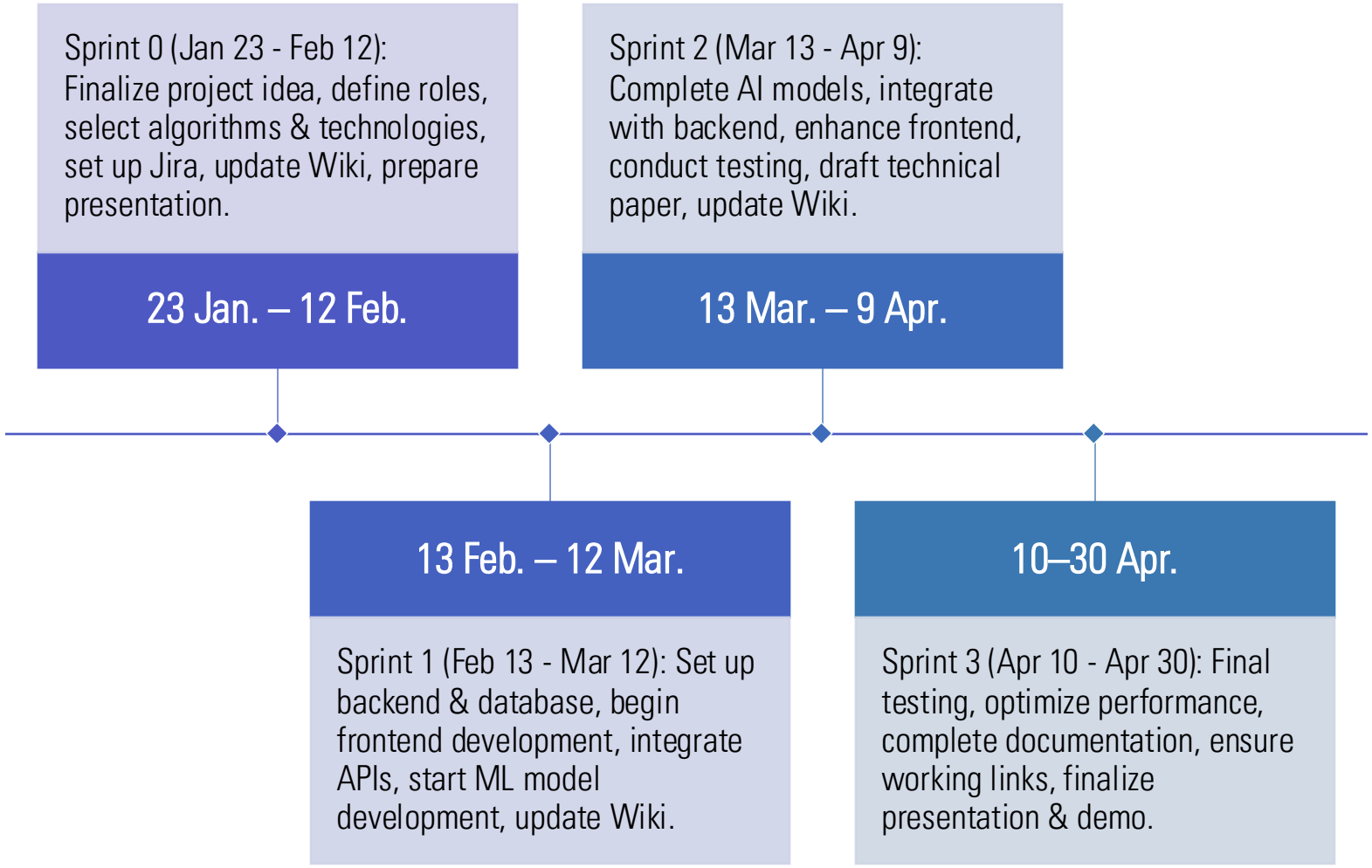
ALGORITHMS - NLP

Our NLP module harnesses cutting-edge technology. The phi model for natural language processing is specifically designed to analyze real-time financial news. This module extracts sentiment and identifies key topics from the latest updates, enabling the application to interpret market sentiment accurately. By processing large volumes of textual data, the phi model provides actionable insights that inform users about market trends and emerging financial narratives, transforming raw news into clear, meaningful investment opportunities guidance.

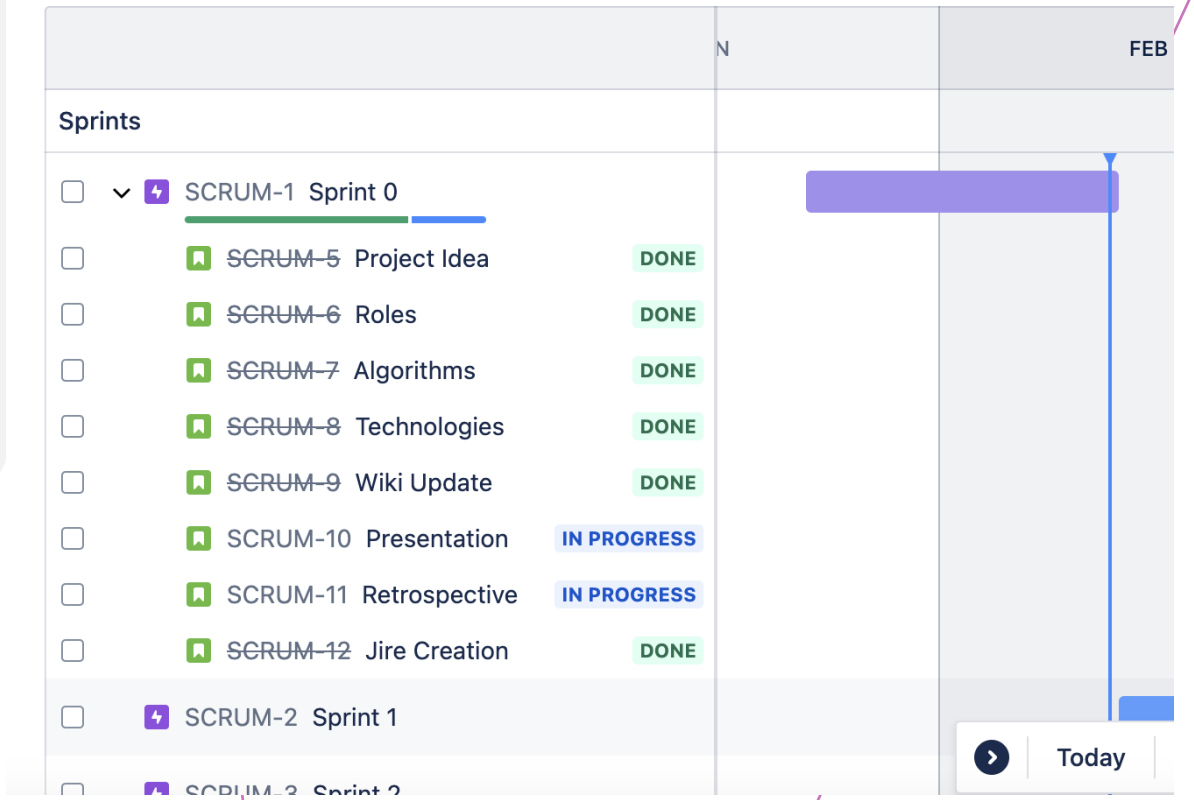
ALGORITHMS – TIME SERIES

- Our Time Series Analysis module examines historical stock market data using advanced deep learning techniques like LSTM and Temporal Fusion Transformers to capture underlying trends and seasonal patterns. This analysis provides essential context that complements the real-time insights derived from our NLP module, ensuring users have a strong understanding of market dynamics. Together, these two modules generate a strong synergy that enables investors to make informed decisions based on current news sentiment and historical market performance.

PROJECT SCHEDULE



PROJECT SCHEDULE – SPRINT 0



TEAM WORKING AGREEMENT

Team Working Agreement

Team Name: Techno Stack

1. Communication & Meetings

- **Slack:** Our main channel for daily communication, quick questions, and status updates.
- **Virtual/In-Person Meetings:** We will conduct weekly meetings via Zoom or Google Meet. If in-person classes are held, we will transition to face-to-face meetings as needed. Team members are encouraged to raise doubts and support one another during these meetings.

2. Project Management

- **Jira:** We will use Jira to track tasks, set deadlines, and monitor progress. It's essential that all links in our documentation and code repositories are verified and kept up-to-date.
- **Timely Submissions:** Every team member must complete their assigned tasks on time to ensure the project stays on track schedule.

3. Documentation

- All documentation must include working links to code repositories, APIs, and other relevant resources. This ensures every team member can access the latest project updates and resources.

4. Roles & Responsibilities

- **Ruchitha Reddy Kuthuru (PM & Full Stack Developer):** Oversees the project, coordinates meetings, and contributes to frontend and backend development.
- **Mahidhar Reddy Kandula (ML Engineer):** Develops and integrates AI models for sentiment analysis and trend forecasting.
- **Afrida Mehanaz Shaik (ML Engineer):** Collaborates on developing and optimizing AI models and data processing workflows.
- **Sharan Jagini (Backend Developer & Tester):** Manages backend development, handles API integrations, and conducts thorough testing to ensure quality and functionality.
- **Nadeem Hussain Shaik (Frontend Developer):** Designs and develops a responsive user interface focusing on usability.
- **Shrinidhi Daheechi (Frontend Developer):** Supports frontend development and collaborates on UI/UX design improvements.

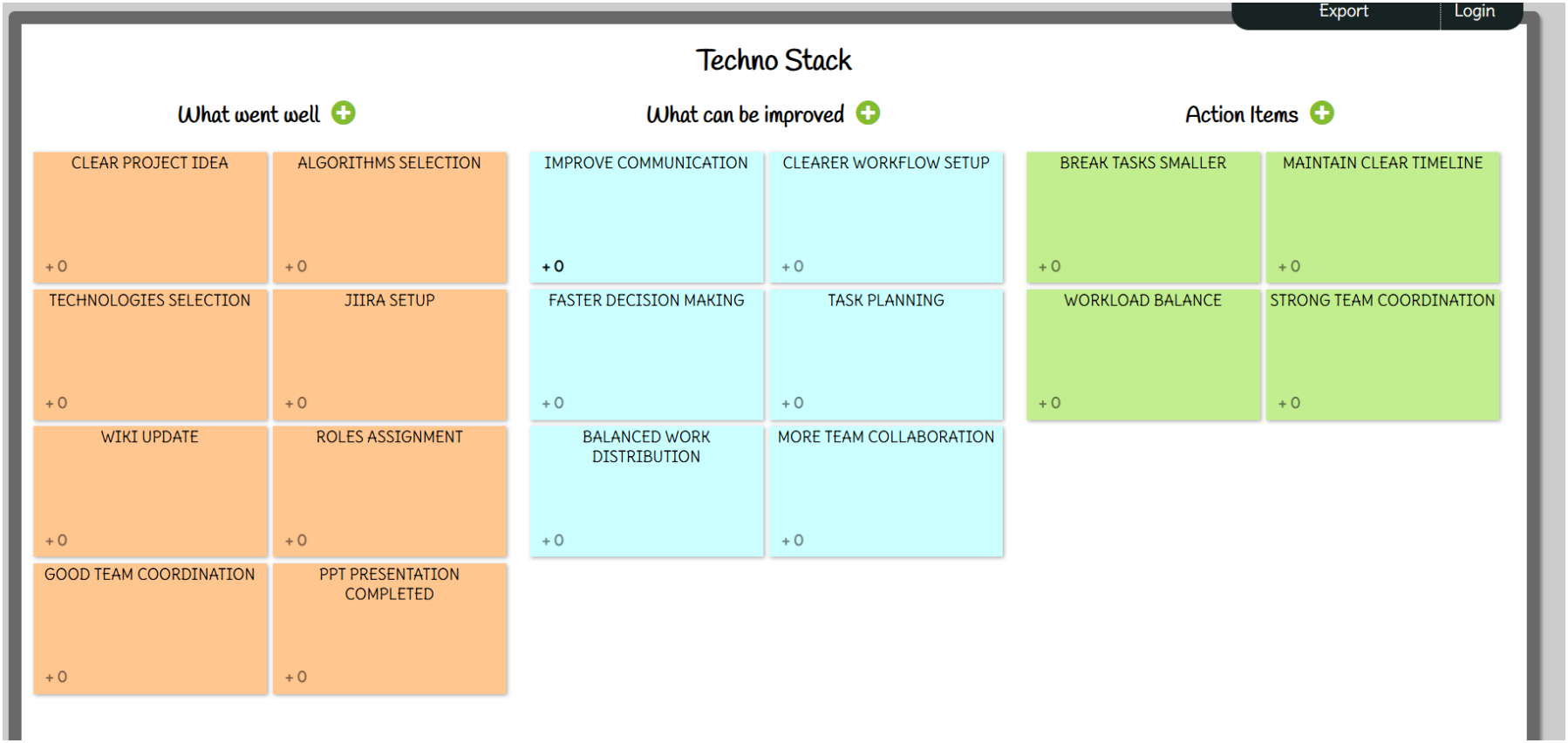
5. Collaboration & Support

- Team members are expected to help each other by promptly addressing doubts and challenges as they arise.
- Regular updates on Jira and other project management tools are required to inform everyone of progress.
- Ensuring that all documentation, code, and integrations (including working links) are thoroughly tested and maintained is a shared responsibility.

Agreed by:

- Ruchitha Reddy Kuthuru
- Mahidhar Reddy Kandula
- Nadeem Hussain Shaik
- Sharan Jagini
- Afrida Mehanaz Shaik
- Shrinidhi Daheechi

RETROSPECTIVE



WIKI PAGE LINK

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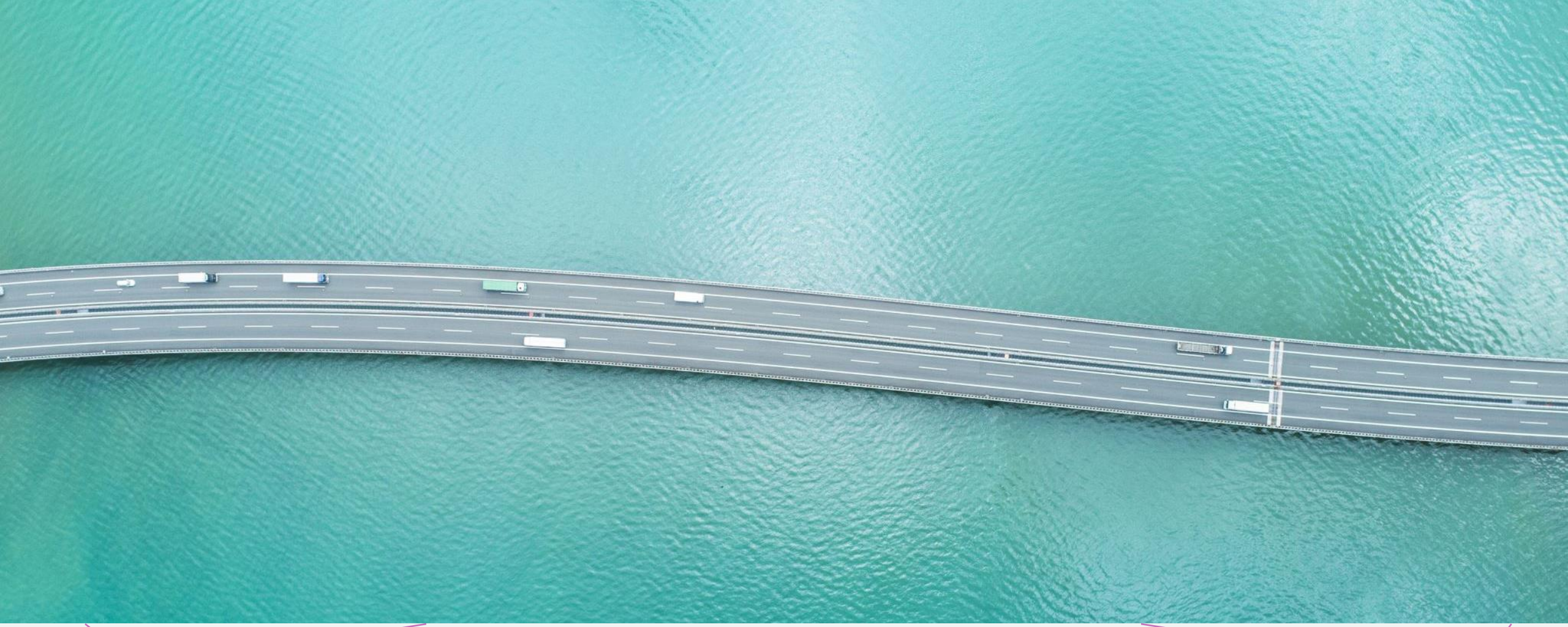

THANK YOU