

# CLEVERCOLLAB

Autonomous AI Agent for Intelligent Project Management

## What is CleverCollab

Managing projects require daily or weekly meetings where project managers gather updates, assess risks, and redistribute tasks to keep things on track. While these meetings are essential, they can be time-consuming, especially when using traditional tools that lack the ability to dynamically adapt to shifting priorities, team availability, and evolving project demands. Our project aims to enhance this process.

CleverCollab streamlines project management with one AI-powered app to handle task allocation, skill matching, and workload analysis using real-time data. It boosts productivity by hitting the sweet spot between automation & user control. Access is secure, ensuring only the organization can view its data. A built-in chatbot, powered by NLP, delivers answers to project-related queries, with no need for constant manual updates — the AI pulls fresh data with every query!

## How It Works

### Application (Frontend)

- 1 User queries for project insights, task suggestions or automation
- 7 Agent generates a response or executes Jira automation
- 9 Users edit/manage team members' skills in the UI

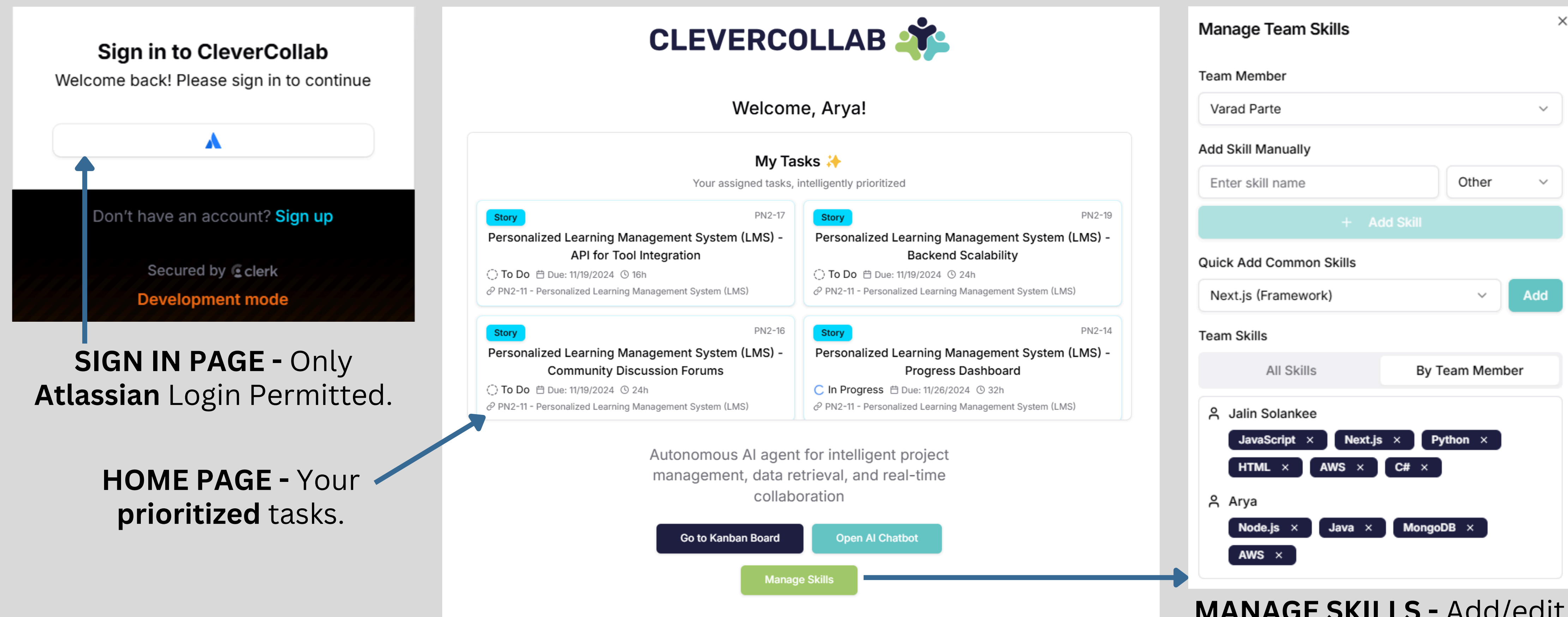
### Backend

- 2 GPT-4o interprets queries and retrieves insights
- 5 Fetches project, tasks, user workload and skills data
- 6 Analyzes query to identify automation opportunities

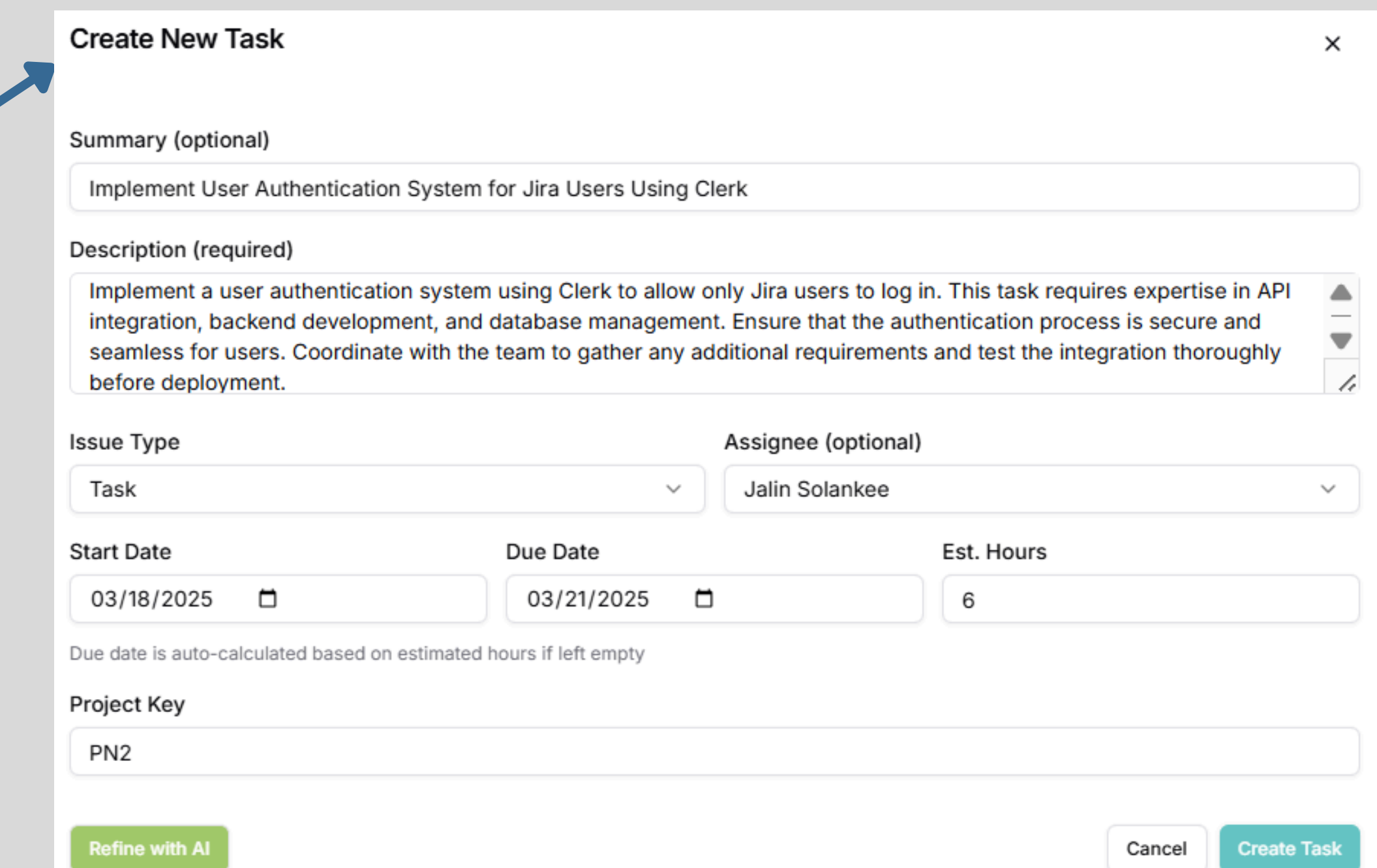
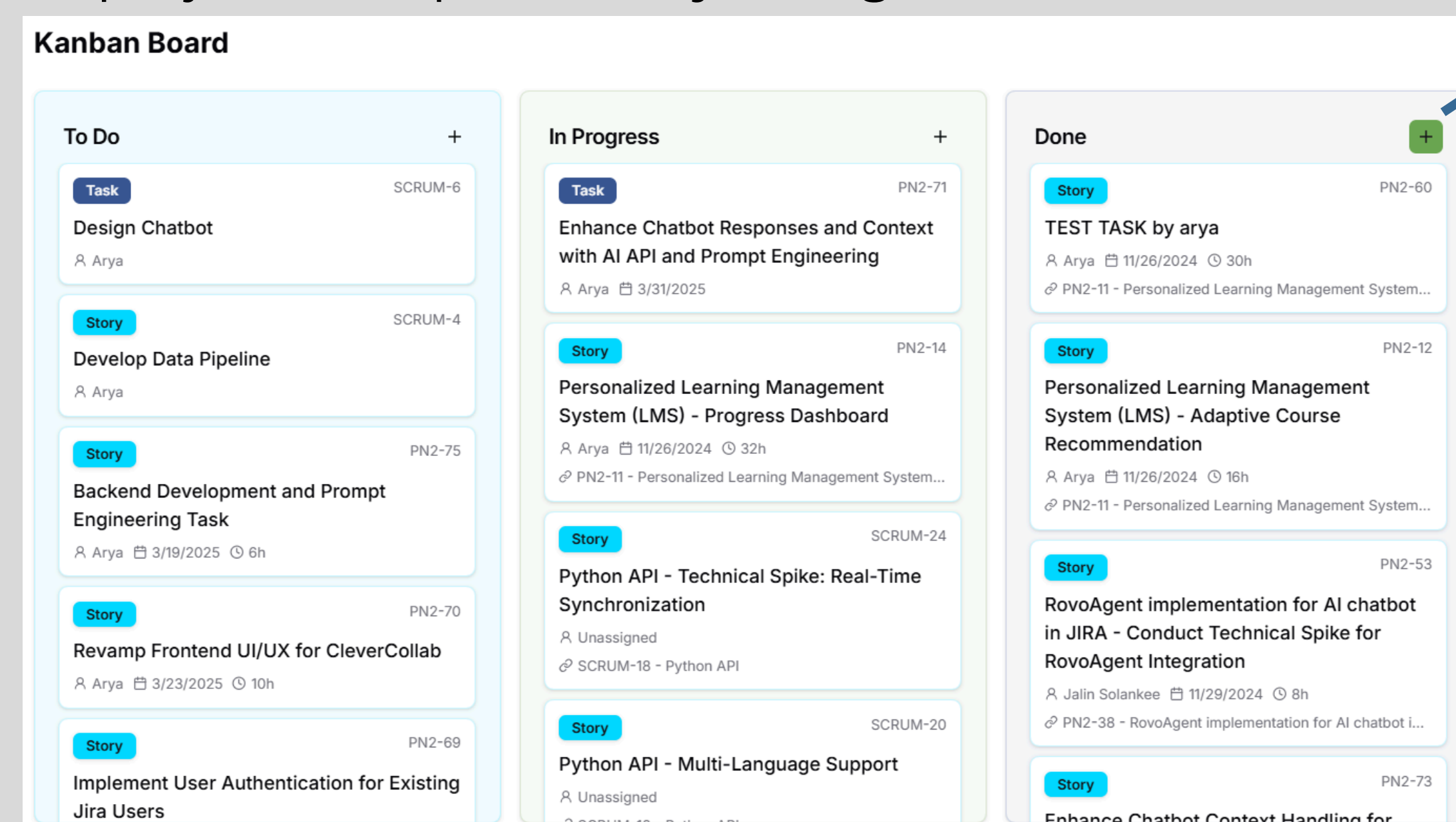
### API & Database

- 3 Jira API returns all project/task details in real time
- 4 Skills dataset stores/returns team members' skills
- 8 Stores all queries & task analysis history for AI learning

## INTERFACES & FEATURES



**Drag and Drop KANBAN BOARD** - Pulls Jira data from all projects and pushes any changes back to Jira.



**CREATE AI GENERATED TASKS** - Provide minimal description and refine with AI, automatically populate all other fields in Jira.

**CHATBOT** - Ask questions about workload, prioritization, skill matching or task allocation. AI agent identifies the context and automates workflow accordingly. Backed with fairness-aware algorithms and explainability features. Tested with industry-specific datasets that allows user customization.

**EMAIL** - Chat transcript sent to you.

## TECH STACK



## ACCOMPLISHMENTS & IMPACTS

- Achieved an overall **80% accuracy rate** in key project management functions
- Decision-making **chatbot** that offers **real-time query processing** and provides a **reliable tool** to **identify conflicts** and **predict risks** with confidence
- AI **agent** that **automates workflows** by **creating new tasks**, **assigning** them to the **right team members** based on skills and availability, and **prioritizing tasks**
- Not only benefits software development managers but also **empowers teams across industries** to manage projects more efficiently and proactively

## CHALLENGES

- AI replies were **slow & repetitive**
- Task-to-user matching was **inconsistent** due to incomplete skill and availability data
- AI **hallucinated** due dates and **miscalculated** task timelines about past Jira issues
- **Biased** AI recommendations sometimes unintentionally favored certain users
- A **generic** AI model was **ineffective** for industry-specific project management needs

## FUTURE WORK

- **BACKEND**: Reduce token usage, refine prompts, add tasks caching, store cached tasks in vector DB
- **API**: Extend integration support for other platforms such as **Azure DevOps**, **Trello**, and **ServiceNow**
- **AGENT**: Introduce a **voice-enabled** assistant
- **Automate email responses** for ticketing issues, status updates, and deadline reminders

## CONTRIBUTORS



**Arya Narke**  
B.S. Computer Science



**Varad Parte**  
B.S. Computer Science



**Daksh Prajapati**  
B.S. Computer Science



**Jalin Solankee**  
B.S. Computer Science

**ADVISOR**: Dr. Raj Bhatnagar