

Capstone Onboarding System



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INTRODUCTION

Our project aims to provide a comprehensive onboarding platform and streamlined management system for Tartigrade Ltd., focused on revolutionizing the capstone project process. By integrating key functionalities into a single web-based solution, the system transforms the current manual and error-prone workflow into an efficient, automated platform.

From an operational perspective, the platform consolidates the submission, refinement, and distribution of capstone project ideas, enabling employees to manage projects seamlessly and ensuring that students can complete their onboarding process with ease. This integration not only reduces administrative overhead but also minimizes the risk of human error, ensuring that every step—from project proposal to final assignment—is carried out efficiently.

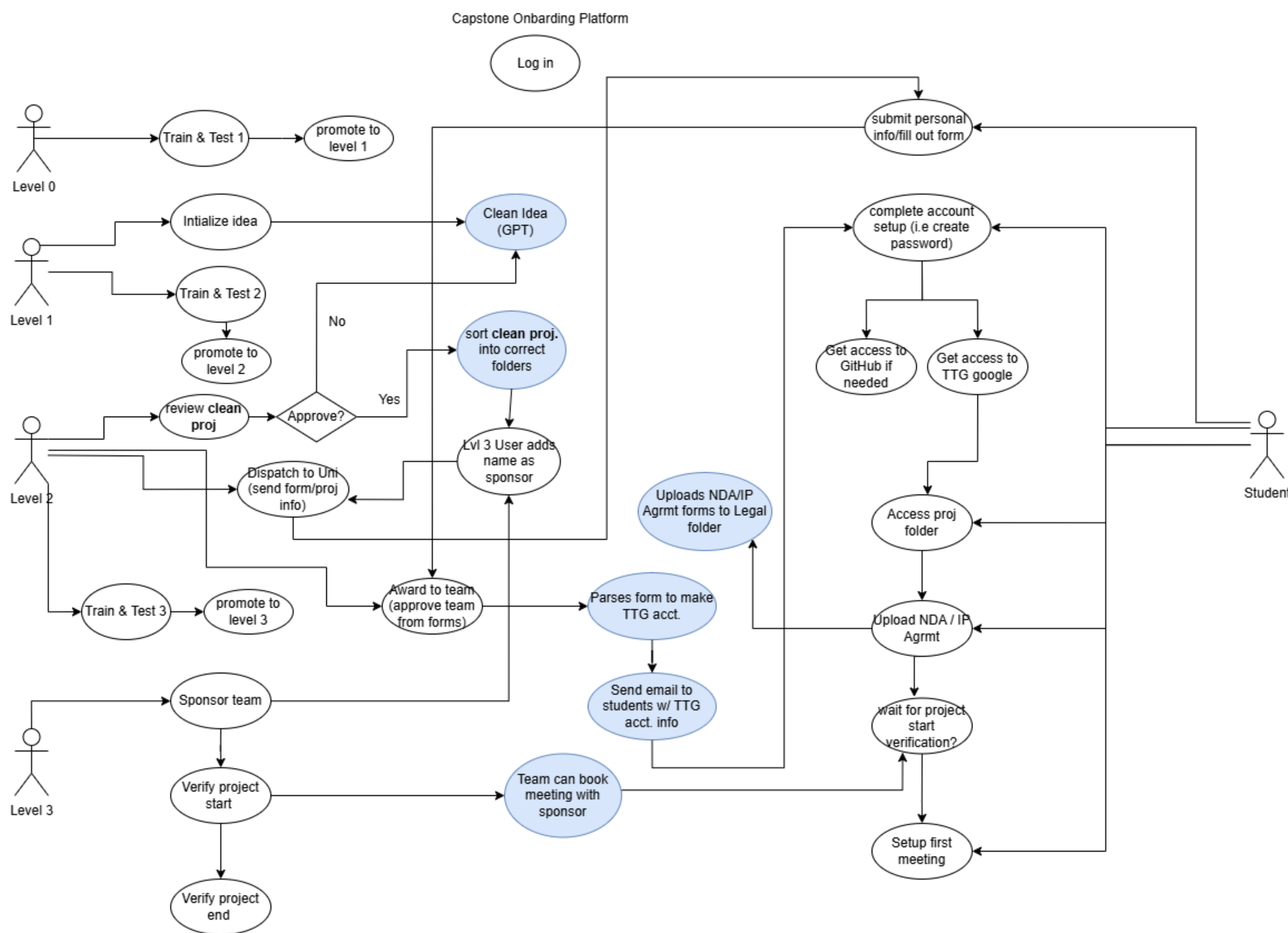
MOTIVATION

Tartigrade Ltd. (TTG) plans to expand their capstone operations, and requires a solution to streamline their onboarding process for students and provide an easier way to manage projects. Project management and student onboarding are handled manually, taking up valuable time for students and TTG employees. The process is repetitive, time consuming, and prone to human error, leading to frustration and misunderstanding.

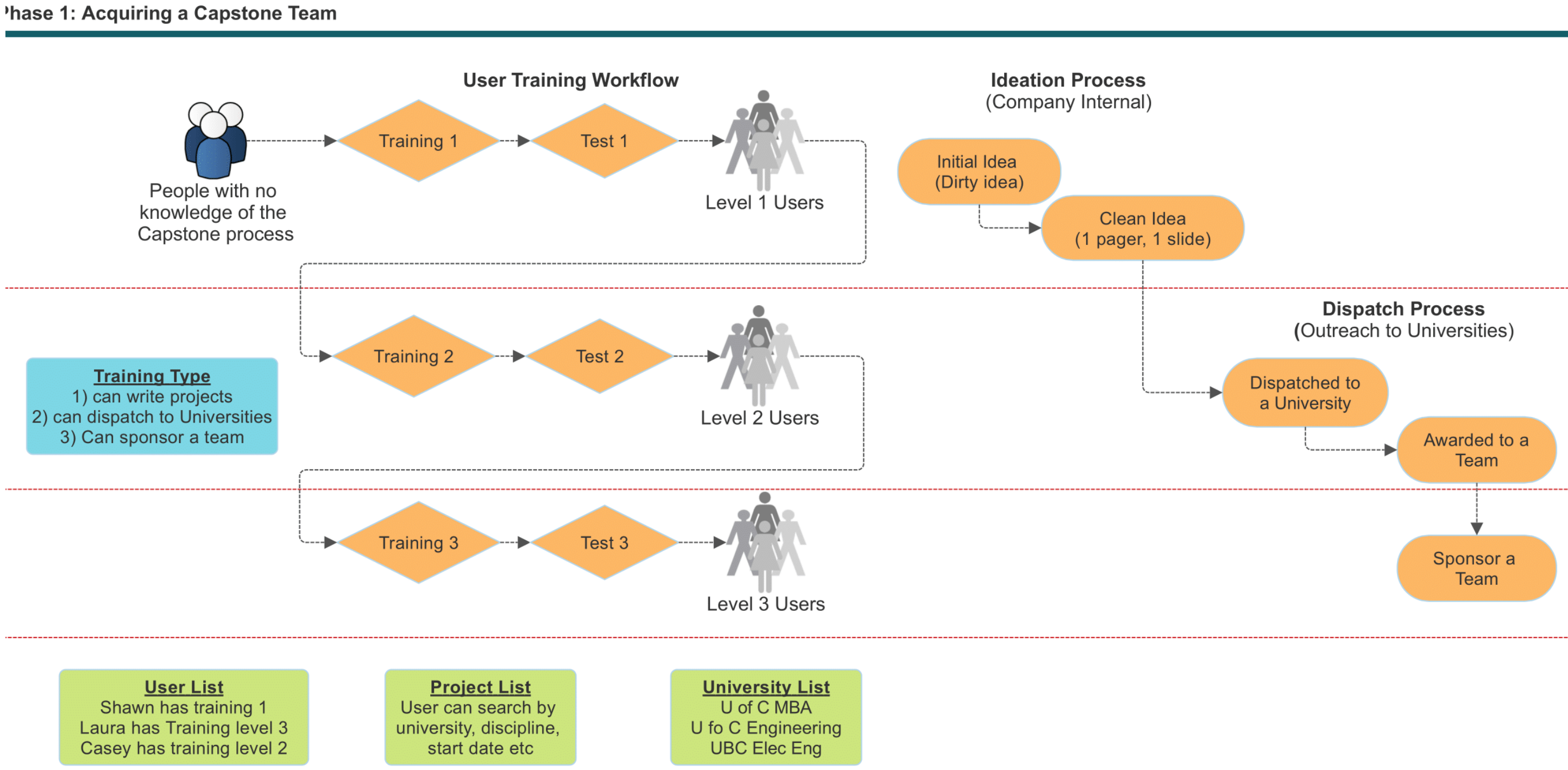
SCOPE

The proposed solution is a **self-hosted web platform** including an employee dashboard and a student dashboard. Employees can propose and refine capstone project ideas, distribute them to universities, award the finalized project idea to a capstone team, and schedule an initial meeting with the project sponsor. Students will be able to start their onboarding process by verifying their accounts, gaining access to their project folder and materials, managing document submissions like contracts, and scheduling an initial meeting with the designated employee assigned to their project.

- Log-In and Basic Account Management
- File Uploading
- Employee Access Levels
- Form Functionality
- Automatic Text Refinement via AI
- Capstone Student Onboarding Flow
- Employee Training Flow



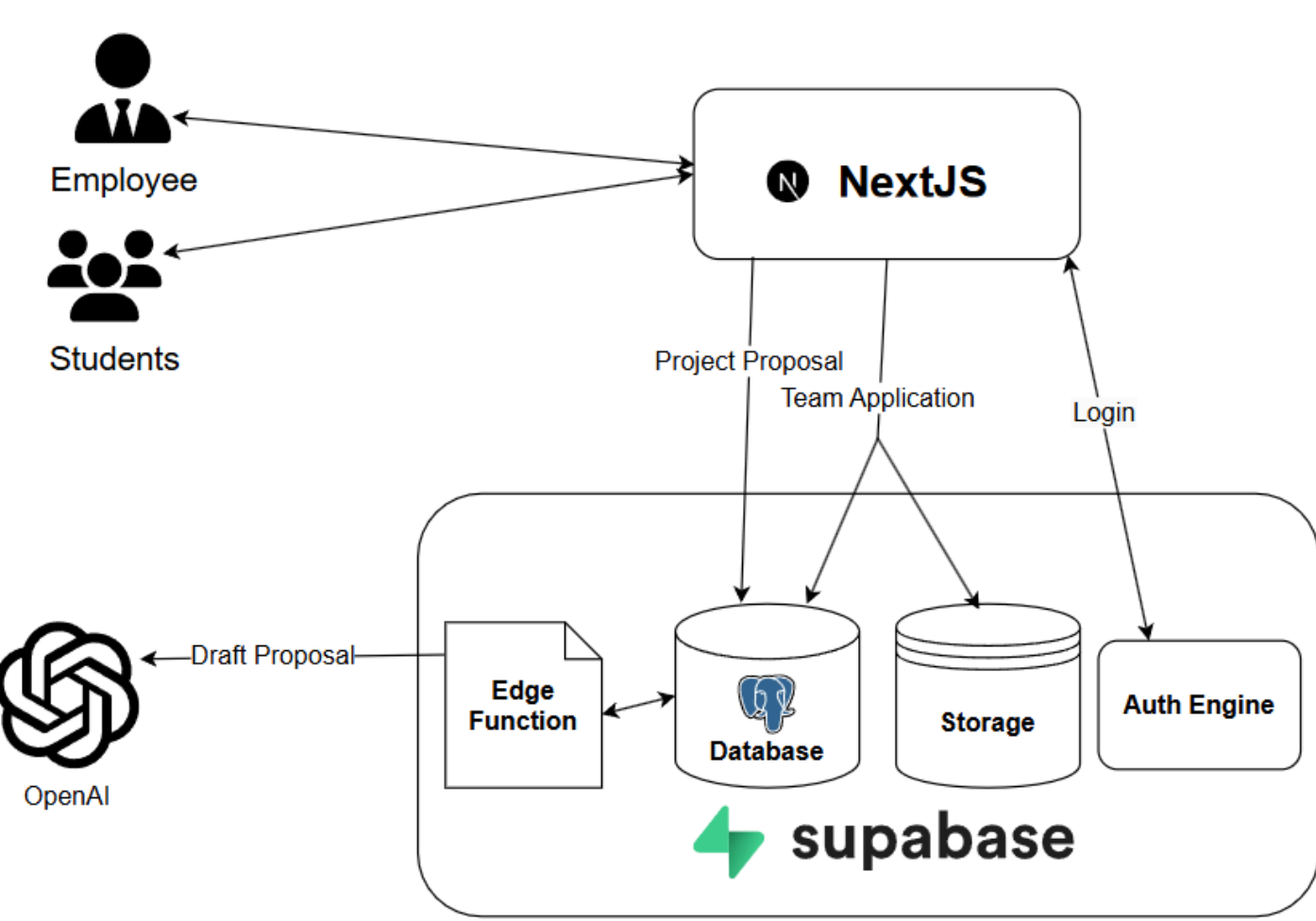
EMPLOYEE SIDE



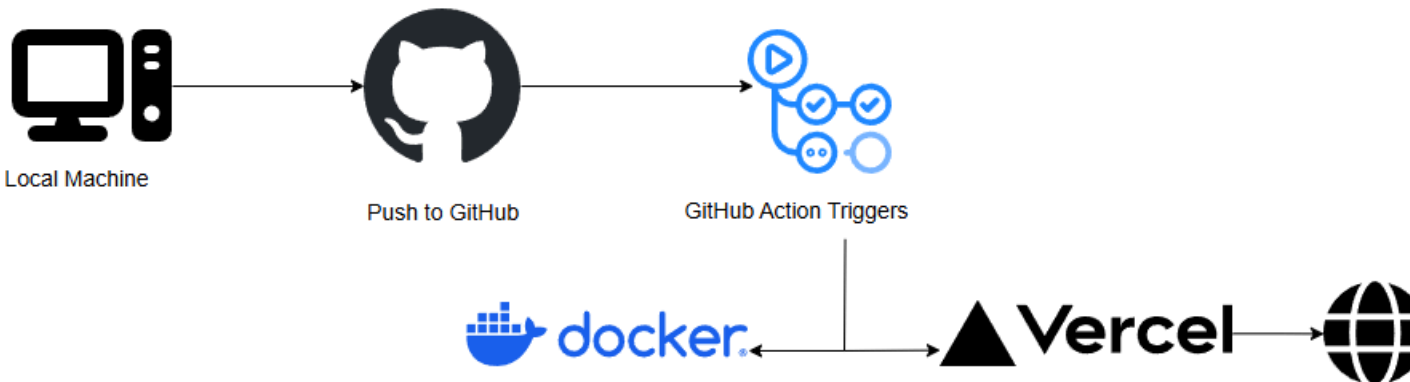
To acquire a capstone team, the company employees must first undergo training and testing to understand the Capstone process. There are **three levels**, where each level is allowed certain actions. **Level 1** users start with no previous knowledge of the capstone process, then after training, they are allowed to **initialize ideas** (known as a dirty project) and can revise them. **Level 2** users are able to **approve/reject** the cleaned projects, dispatch them to universities, and reward the project to a student team. **Level 3** users have the capabilities of all previous levels and are able to **sponsor** a team, becoming the main communicator between the student capstone team and the organization.

IMPLEMENTATION

Our solution is a web-based platform that streamlines the capstone project application and management process at Tartigrade Ltd. (TTG). Employees can submit and refine project proposals—using **generative AI** to convert raw ideas into structured plans— and then approve and distribute these projects to universities, while student teams apply and onboard through a centralized system. This seamless integration minimizes manual tasks, reduces errors, and enhances communication between all stakeholders.

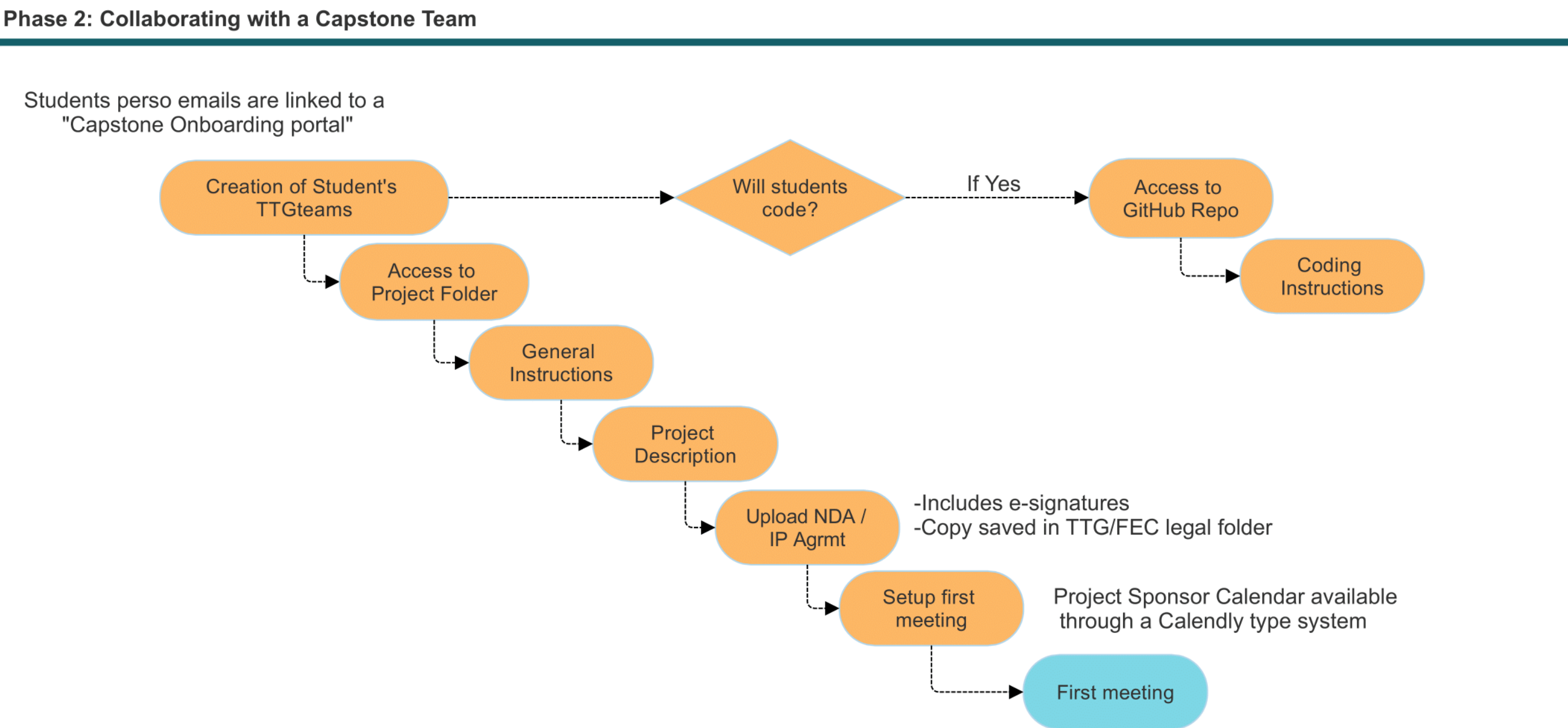


The application is containerized using **Docker**, which guarantees portability and reproducibility across different environments, and is continuously integrated and deployed via **GitHub Actions**. Looking forward, the platform is designed with future enhancements in mind, including scalable caching solutions, automated notifications, real-time messaging integrations, and further automation of account creation processes to support a growing user base.



STUDENT SIDE

When dispatched to a university, students can fill out an **application form**, and an employee (level 2 or 3) can award the project to a team. From there, students can start their onboarding process where they **add additional information**, such as their GitHub username if the project requires coding. They will also get access to the project Google Drive folder and the GitHub repository if needed. Student teams will also be able to **upload an NDA** through the Capstone Onboarding System. From there, students will reach out to the project sponsor from Tartigrade Ltd. (TTG) to begin their first meeting.



TESTING

Throughout development, the team conducted extensive testing, both in isolated branches and later as a fully integrated system, to ensure new additions did not introduce unexpected issues. Near the project's conclusion, the team visited the company's office for a **Usability Analysis** and a formal round of testing. Employees were given a brief tutorial on the system's features and encouraged to explore its capabilities, push its limits, and provide feedback. Their insights—ranging from bug reports to UX suggestions—were compiled through a structured feedback form for further review. This feedback was collected specifically for the application, addressing both functionality and user experience improvements.

RESULTS

The application **successfully streamlines** the capstone project onboarding process by providing an intuitive and efficient platform for project submission, team formation, and sponsor-student collaboration. By leveraging automation, and artificial intelligence, the system reduces manual workload, ensuring faster approvals and better organization. The integration of a structured workflow enhances transparency, allowing sponsors to track project applications and student teams to apply seamlessly. With a user-friendly interface and scalable backend, the application effectively improves the overall experience for all stakeholders involved in the capstone process.

