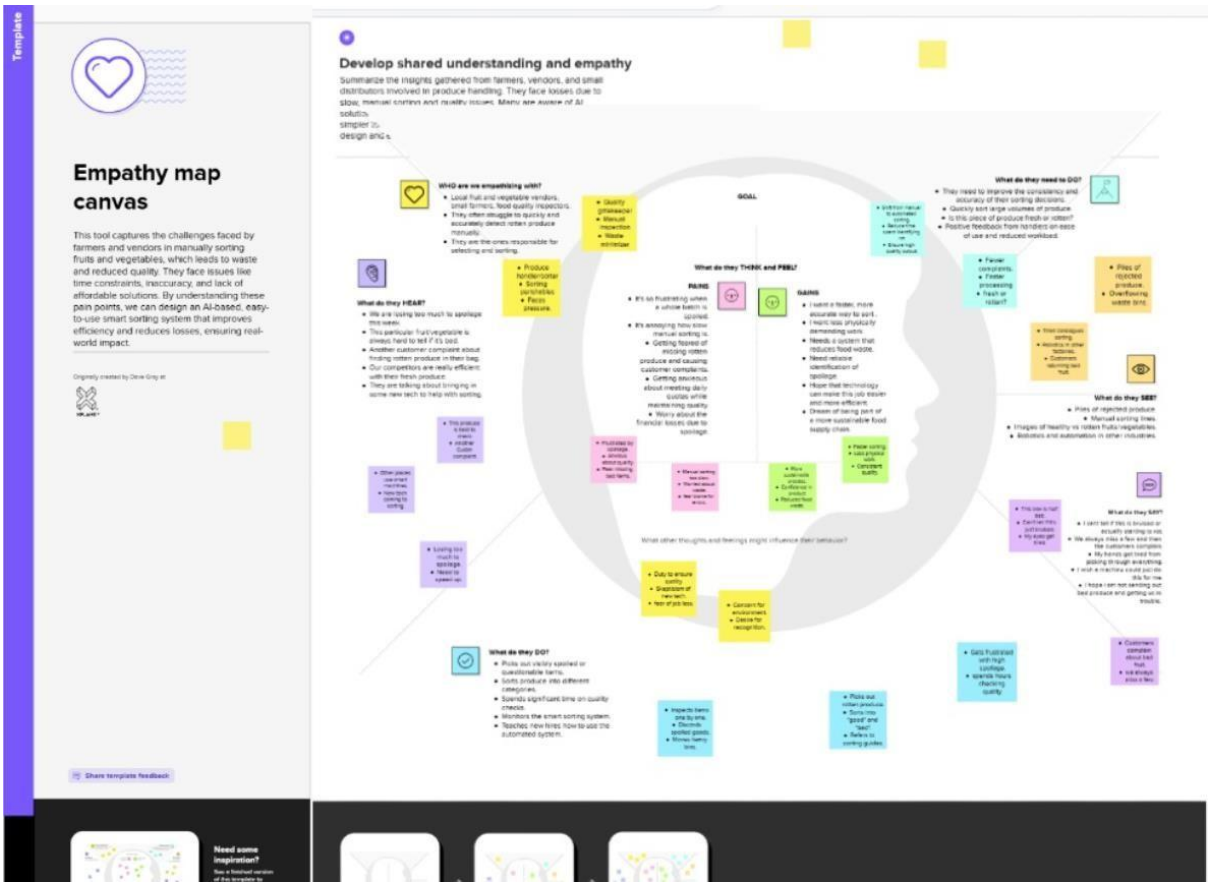
Ideation Phase
Empathize & Discover

Date	17 February 2026
Team ID	LTVIP2026TMIDS80710
Project Name	Smart Sorting: Transfer Learning for Identifying rotten fruits and vegetables
Maximum Marks	4 Marks

Empathy Map Canvas:

The **Empathy Map** for the *Smart Sorting* project plays a crucial role in understanding the real users affected by the problem of detecting rotten fruits and vegetables. By mapping out what users think, feel, see, say, do, and experience, we gained insights that shaped the usercentered design of our system.

This project addresses the needs of three major user groups: workers in food processing plants, supermarket quality inspectors, and home users managing fresh produce. Each of these groups faces daily challenges with identifying spoilage accurately and efficiently, leading to food waste, customer dissatisfaction, or extra labor costs.



This empathy map captures the lived experiences, pain points, and expectations of the primary users affected by the current manual produce sorting process—**factory workers**, **supermarket quality control staff**, and **household users**. It is designed to inform the development of an intelligent sorting system using transfer learning to identify rotten fruits and vegetables.

By understanding the behaviors, emotions, and challenges of these users, we can develop a solution that is **technically robust**, **trustworthy**, and **user-friendly**, delivering significant value in agricultural, retail, and domestic settings.

Through the empathy mapping process, we discovered that **users are frustrated with the current manual inspection processes**. Factory workers often feel overwhelmed and under pressure to sort large volumes of produce quickly, which leads to errors. Supermarket staff are concerned about receiving complaints due to unnoticed spoiled items, while household users frequently forget about fruits and vegetables stored in their refrigerators until it’s too late.

Users expressed a desire for **a reliable, automated solution that reduces human error, improves efficiency, and minimizes waste**. The empathy map revealed that they want systems that can detect spoilage early, offer real-time alerts, and provide actionable insights — whether on a factory floor, in a loading dock, or inside a smart refrigerator.

These findings directly informed the design of our Smart Sorting system. By applying transfer learning to pre-trained deep learning models, we developed a solution capable of recognizing rotten produce in various environments. Our system is not just technically strong but also addresses **emotional pain points** like stress, responsibility, and waste-related guilt, especially in home settings.

Ultimately, the Empathy Map Canvas helped us **put ourselves in the users' shoes**, ensuring our solution is **not only innovative and efficient but also genuinely helpful and aligned with real-world expectations**.