Sprint plan

In our Agile Development Sprint Planning Table, we listed all the Feature Modules along with the detailed tasks, functionalities, and we discussed and analyzed the complexity, workload, and time required for each task, estimating their Story Points. Task Rating is the order of priority we assigned to each task. Based on the story points and priorities, we developed detailed plans for two sprints. Tasks with higher priority are completed first, ensuring that key functionalities in the project are completed first to deliver the maximum early value.

Sprint 2: Hardware Integration & Simple UI

Duration: 4 weeks

sprint goal

In Sprint 2, our core goal was to ensure that FarmBot's hardware integration and user interface development went smoothly and the system's infrastructure was successfully integrated, and that it provided users with an intuitive and easy-to-use interface.

Hardware Integration

- Investigate and resolve driver/software compatibility for FLIR camera integration. (US-D1: 2 SP, P2)
- Implement kernel modifications or custom drivers for FLIR camera communication (US-D2: 3 SP, P2)
- Develop a plug-and-play solution for easy FLIR camera adaptability. (US-D4: 3 SP, P2)
- Design a stable, easily installable mount for the sensor on FarmBot. (US-D3: 2 SP, P2)
- Ensure the camera's power cable is compatible with the movement range of FarmBot's robotic arm.(US-D5: 2 SP, P2)
- Specify new sensor's power specifications for safe integration with FarmBot's electrical system. (US-D6: 1 SP, P2)

Simple UI & Operation Guide

- Design a basic layout and navigation for the FarmBot web app, incorporating thermal imaging display. (US-D9: 2 SP, P2)
- Ensure responsive design for varied device accessibility.(2 SP, P2)
- Implement operation controls and real-time thermal imaging display. (US-U1: 2 SP, P2)

Sprint 3: Enhancing Functionality

Duration: 4 weeks

Sprint goal

The goal of Sprint 3 is to develop and refine additional features of the FarmBot system, including plant health monitoring, automated irrigation systems, environmental monitoring and a data sharing platform.

Plant Health Monitoring & Data Management

- Integrate AI for automatic camera setting adjustments based on environmental analysis. (US-D10: 3 SP, P3)
- Develop AI-driven algorithms for thermal signature recognition and health anomaly detection.(US-U2: 3 SP, P3)
- Architect a server system for efficient thermal imaging data handling. (US-D7: 3 SP, P3)
- Design a database for secure thermal imaging data storage and management. (US-D8: 2 SP, P3)
- Integrate real-time data display with user customization features, including alerts for recognized patterns and anomalies. (US-U2: 2 SP, P3)
- Enable historical thermal imaging data viewing and downloading. (US-U3: 2 SP, P3)
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Risk Assessment and Mitigation Strategies

In the pursuit of achieving our Sprint objectives seamlessly, we will undertake a comprehensive analysis to identify potential hazards, including but not limited to technical hurdles, scarcity of resources, and challenges in managing time effectively. Upon identification, each risk will be assigned to a dedicated team member who will be charged with the task of closely monitoring and devising proactive strategies to mitigate said risks. For instance, Yinkai will be tasked with exploring viable solutions or seeking alternative technological avenues to circumvent any technical impediments. Concurrently,When we need to purchase some equipment, Naixin is responsible for booking the required resources in advance

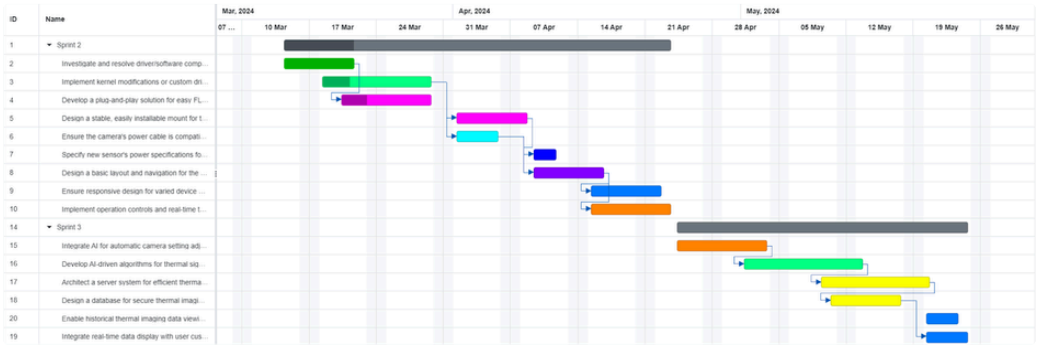
Daily Stand-ups

We will arrange short meetings every day, lasting about 6 minutes. Each team member (Yinkai, Naixin, Haoyang, Steve, Haitian, Junye) will take turns reporting their progress from the previous day, plans for the current day, and any obstacles encountered. This helps to identify and resolve issues promptly, ensuring the project progresses according to plan.

Review and Retrospective Meetings

At the end of the Sprint, we will schedule a review meeting, inviting all stakeholders. At this meeting, each team member will present their work results and collect feedback. Additionally, we will hold a retrospective meeting where team members discuss the successes and challenges of the Sprint process and the lessons learned. This will help us improve in future Sprints.

Gantt chart



ID	Name	Start Date	End Date	Duration	Resources	Color
1	Sprint 2	Mar 14, 2024	Apr 23, 2024	29 days		
2	Investigate and resolve driver/software compatibility for FLIR camera integration.	Mar 14, 2024	Mar 21, 2024	6 days	Haitian Li,Steve Zhang	
3	Implement kernel modifications or custom drivers for FLIR camera communicat...	Mar 18, 2024	Mar 29, 2024	10 days	Haoyang Zheng,Junye Zhou	
4	Develop a plug-and-play solution for easy FLIR camera adaptability.	Mar 20, 2024	Mar 29, 2024	8 days	Yinkai Chai,Naixin Xu	
5	Design a stable, easily installable mount for the sensor on FarmBot.	Apr 01, 2024	Apr 08, 2024	6 days	Haoyang Zheng,Haitian Li	
6	Ensure the camera's power cable is compatible with the movement range of Fa...	Apr 01, 2024	Apr 05, 2024	5 days	Junye Zhou,Steve Zhang	
7	Specify new sensor's power specifications for safe integration with FarmBot's e...	Apr 09, 2024	Apr 11, 2024	3 days	Naixin Xu,Yinkai Chai	
8	Design a basic layout and navigation for the FarmBot web app, incorporating th...	Apr 09, 2024	Apr 16, 2024	6 days	Haoyang Zheng,Haitian Li	
9	Ensure responsive design for varied device accessibility.	Apr 15, 2024	Apr 22, 2024	6 days	Naixin Xu,Yinkai Chai	
10	Implement operation controls and real-time thermal imaging display.	Apr 15, 2024	Apr 23, 2024	7 days	Steve Zhang,Junye Zhou	
14	Sprint 3	Apr 24, 2024	May 24, 2024	23 days		
15	Integrate AI for automatic camera setting adjustments based on environmental ...	Apr 24, 2024	May 03, 2024	8 days	Haitian Li,Junye Zhou	
16	Develop AI-driven algorithms for thermal signature recognition and health ano...	May 01, 2024	May 13, 2024	9 days	Haoyang Zheng,Naixin Xu	
17	Architect a server system for efficient thermal imaging data handling.	May 09, 2024	May 20, 2024	8 days	Steve Zhang,Yinkai Chai	
18	Design a database for secure thermal imaging data storage and management.	May 10, 2024	May 17, 2024	6 days	Haitian Li,Junye Zhou	
20	Enable historical thermal imaging data viewing and downloading.	May 20, 2024	May 23, 2024	4 days	Haoyang Zheng	
19	Integrate real-time data display with user customization features, including alert...	May 20, 2024	May 24, 2024	5 days	Yinkai Chai,Naixin Xu,Steve Zhang	