Ningchen Liang

Containerization and Orchestration
Iterative update containers and compatibility checks.
Check Container Status: Make sure all containers are up and running. Initialize basic framework for further backend, frontend, and device intergeneration development.
Check Logs: Look at the logs for any errors or warning messages for service-specific logs.
Nginx Configuration: Check the Nginx configuration to ensure it's correctly set up to serve the files. This typically involves looking at the default.conf file in the /etc/nginx/conf.d/ directory within the container.

Leveraging Docker Swarm for Scalability
Set up Docker Swarm by initializing a swarm mode on a Docker host
Adjust Docker Compose files to be compatible with Swarm:Convert Docker Compose to a Stack File
With Docker Compose file adapted for Swarm, deploy it as a stack to swarm cluster
Pre-build the images for the frontend, device_integration, and dashboard-backend services and push them to a Docker registry.
Manage services using Docker Swarm commands: docker service ls

MongoDB Integration with Docker volumes, ensuring data durability. Volume Mapping in docker-compose.yml

Frontend
Solve url redirection with nginx configuration to serve as a single-page application (SPA).
Setup dispatcher website for user installation, Static HTML file allows the user to install the project in one click.

CI/CD
Enable setup script to pipeline the setup process.
Maintain a requirement file to ensure the dev environment is consistent.

Networking Considerations
Security Considerations: Ensure that only backend services can access the database, and never expose your database ports publicly. Expose only the necessary ports to the outside world for security.

Documentation
Maintain a readme file on github.

Inchara Raveendra

Backend Development
Developed the Dashboard Backend, including 31 CRUD APIs.
Developed 18 Device Integration APIs to facilitate communication with smart devices.
Extensive bug fixes and quality assurance testing for the backend.

Frontend Development
Developed all operations related to the dashboard, including real-time setting and fetching states of lights, alongside complex mathematical computations and helper functions.

Bug fixes across the application, enhancing its aesthetics and functionality.
Bug fixes for Widgets and App pages.
Elaborate end-to-end testing (at all 7 hops) in both local and public deployments.
Completed ad hoc tasks beyond the initial project scope related to Dashboard development as they arose.

Hardware

Procurement of devices.
Configured both physical and software authentication measures.
Implemented hardware and network configurations to enable remote access to smart devices.

Version Control

Created and managed the Git repository and feature branches.

Documentation

Documented the project proposal.
Created presentation slides for the topics of UI improvement, functional improvements, and future work.
Planned the delivery and flow of the project demonstration.
Reviewed and contributed to the project report, for the topics covering Authentication mechanisms, Mathematical Computations and Data Manipulations, Entity-Relationship Diagram (ERD), Limitations and Assets needed for the report.

Project Management

Engaged in planning and organizing multiple detailed team meetings.
Developed High Level Design (HLD) documentation.
Authored API documentation using Swagger and agreed upon JSON structures.
Created a Postman collection to facilitate development and testing.
Generated a MongoDB data dump for project needs.
Maintained project documentation, ensuring its accuracy and relevance.
Coordinated communication within the project team.
Developed a contingency plan to address potential project risks.

Kiran Kodali

Developed a React dashboard with meticulous design, seamlessly integrating React Routers and Redux for efficient state management.
Crafted custom components like cards, switches, and Navbar
Utilized Sass styling to ensure a visually pleasing user interface.
Implemented grid layout and responsive media queries for seamless experience across devices.
Set a new standard for web applications, exemplifying functionality and user interaction.

Rani Rajurkar

Frontend Development
Worked on the frontend development using React, quickly ramping up and overcoming the learning curve as a newcomer to the framework.
Implemented the "Add Widget" and "Add App" forms, enabling users to onboard new devices and create custom applications.

Integrated API calls to fetch and update data from the backend, ensuring seamless communication between the frontend and backend components.

UI/UX Design
Created wireframes using Figma, a design tool, to visualize and plan the user interface and dashboard layouts, ensuring a cohesive and user-friendly experience.

System Architecture
Made significant contributions to the system architecture and design decisions, advocating for a containerized and scalable approach using Dockerisation.
Played a pivotal role in ensuring the application's scalability and efficient resource utilization across multiple hosts.

Documentation
Devised the project report, a major component of the project, encompassing comprehensive documentation of the application's features, architecture, and implementation details.
Took the lead in documenting the project, ensuring thorough and accurate report for future reference and maintenance.