Modern houses and businesses rely on refrigeration to preserve food and sensitive products. The problem with this is sudden temperature changes caused by power outages, human errors like leaving the fridge door open, or components inside the fridge failing, can result in food spoilage or safety risks. To address these problems, we’re developing a Smart Fridge Monitoring and Control System that will continuously track internal temperature levels and will automatically correct it when needed. The system uses temperature sensors to monitor internal conditions. If the temperature exceeds a predefined threshold, a cooling mechanism is triggered via an actuator. The system ensures that the temperature is restored to a safe range. The fridge also comes equipped with an ice dispensing mechanism, which users can freely control through the gui interface. Users can interact with the system via a plurilingual GUI, that supports both english and French, enabling them to see real-time data, receive alerts, and adjust threshold settings as needed. A key feature to this smart fridge is cloud integration, which logs the temperature remotely, making it possible to track historical trends and receive notifications on mobile devices. The threshold validation is handled by an external server, which allows centralized configuration management and logic consistency. A situation where this could be useful in the real world is in small restaurants and local grocery stores, staff often have several responsibilities and can’t constantly monitor refrigeration units. This system could prevent food losses from accidents by detecting temperature issues early and acting autonomously, and it would also provide business owners with remote access to the refrigeration unit. If the business requires ice to be used, the fridge can also give a hands-free, hygienic solution to use ice quickly.