28.02.2024

# SE 216 – SOFTWARE PROJECT MANAGEMENT
# Spring 2023-2024
# Project Proposal

## SHARPFRİDGE

**Problem Definition**

The problem is the inefficiency of traditional refrigeration systems in maintaining optimal storage conditions for various food items. This inefficiency leads to premature spoilage and waste, resulting in economic and environmental losses. Especially for chain restaurants that have to supply huge amounts of fresh food, the lack of intelligence in conventional refrigerators to adapt to different environmental conditions, such as temperature and humidity, further exacerbates the problem. Additionally, the absence of real-time monitoring and alerts in traditional refrigerators makes it difficult for companies to detect deviations from optimal storage conditions. This project addresses this problem by designing and developing an intelligent refrigerator system that can effectively store various food items under different environmental conditions. The system will utilize sensors to monitor the internal environment and adjust the cooling and humidity levels accordingly. Additionally, the system will be capable of providing real-time alerts and notifications to the user in case of any deviations from the optimal storage conditions. The primary goal is to ensure the freshness and longevity of the stored food items.

**Background Information**

Traditional refrigeration systems have limitations in maintaining optimal storage conditions for various food items, leading to premature spoilage and waste. This is primarily due to the lack of intelligence in conventional refrigerators to adapt to different environmental conditions, such as temperature and humidity. As a result, consumers often face the challenge of discarding food items that have gone bad, resulting in economic and environmental losses. Additionally, the lack of real-time monitoring and alerts in traditional refrigerators further exacerbates the problem, as users cannot detect deviations from optimal storage conditions. The need for an intelligent refrigerator system that can effectively store various food items under different environmental conditions is evident. Such a system would ensure the freshness and longevity of the stored food items.

In order to address these issues, the proposed intelligent refrigerator system will use humidity, temperature and infrared sensors . These sensors will monitor environmental conditions and with information like best before, which food to store provided from user, system adjust its settings accordingly. Additionally, the system will provide real-time monitoring and alerts to users, allowing them to detect deviations from optimal storage conditions and take appropriate action. By incorporating these features, the intelligent refrigerator system will help reduce food waste and minimize environmental impact. It is important to note that the user should enter the mass, type of food, and buying date manually for accurate monitoring and management of food items.

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**Objectives**

- Implementing a real-time alert and notification system that informs the user of any deviations from the optimal storage conditions.
- Ensuring the freshness and longevity of the stored food items
- Providing a user-friendly interface that allows for easy monitoring and control of the refrigerator system.

- Conducting thorough testing and validation of the system to ensure its reliability and effectiveness in maintaining optimal storage conditions.

- Providing access to multiple users at the same time

- Determining the storage period by evaluating the food production and consumption date entered into the application by the user

- Setting different compartments for each food to be determined by the user

- Setting different temperature and humidity levels for each compartment

**Approval Signatures and GitHub Accounts**

**GİTHUB: Se216-2**