SE 216 – SOFTWARE PROJECT MANAGEMENT
SOFTWARE PROCESS MODEL DOCUMENT

PROJECT NAME: SHARPFRİDGE

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#	NECESSARY NEEDS FROM THE ORGANIZATIONAL PROCESS
1.	Cross-Functional Team: Software Engineers: Develop the software components of SharpFridge, including the user interface, backend logic for sensor data processing, and real-time alert/notification system. Hardware Engineers: Design and integrate the sensor systems, cooling mechanisms, and other hardware components required for SharpFridge's operation. Food Storage Experts: Provide expertise in food preservation techniques, optimal storage conditions, and guidelines for adapting the refrigerator system to different types of food items. Quality Assurance Specialists: Conduct rigorous testing and validation of SharpFridge's functionalities, ensuring reliability, accuracy, and compliance with food safety standards..
2.	Agile Project Management: Adoption of Agile methodologies, tailored to the hardware-software integration nature of SharpFridge's development, allows for iterative development, frequent feedback loops, and adaptive planning.
3.	Effective Communication Channels: Establishment of clear communication channels, including regular team meetings, virtual collaboration tools, and dedicated communication platforms, ensures seamless coordination and knowledge sharing among team members. Scheduled cross-functional meetings to discuss integration points, align priorities, and address any technical or logistical challenges promptly.
4.	User-Centric Approach:

	Conducting user research and engaging stakeholders, such as restaurant owners and kitchen staff, to understand their specific needs, preferences, and pain points regarding food storage and management. Iterative prototyping and usability testing sessions to gather feedback, validate assumptions, and refine SharpFridge's user interface, functionality, and overall user experience.
5.	Robust Testing and Validation: Implementation of comprehensive testing strategies, including unit testing, integration testing, and system testing, tailored to SharpFridge's hardware-software integration and real-time monitoring capabilities. Development of custom test cases and simulations to validate SharpFridge's performance under various environmental conditions, ensuring reliability, accuracy, and responsiveness. Continuous monitoring and logging of sensor data to identify any anomalies or deviations from optimal storage conditions, enabling proactive maintenance and troubleshooting.

SOFTWARE PROCESS NAME: Agile Model (Scrum)
SOFTWARE PROCESS DESCRIPTION:

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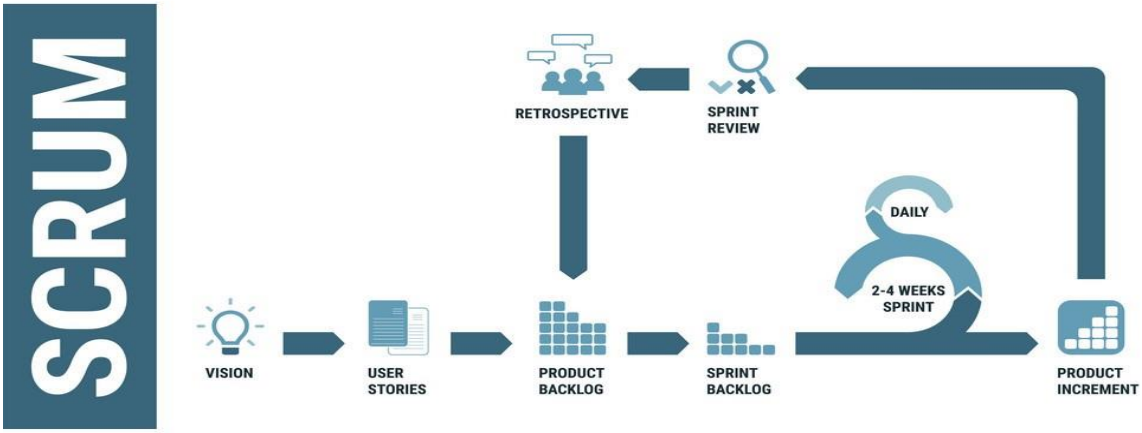
Scurm is an agile framework for managing and organizing complex projects with iterative manner. It emphasizes collaboration, adaptability, and continuous improvement, with key roles such as Scrum Master, Product Owner, and Development Team. Daily stand-up meetings and regular retrospectives enhance communication and efficiency throughout the development process.

SOFTWARE PROCESS MODEL:



Sprints:

Sprint 1 (Duration: 2 weeks)
Objective: Setup Project Environment and Basic Functionality

Tasks:

- **Set up development environment and necessary tools.**
- **Develop basic user interface layout for refrigerator system.**
- **Implement user authentication system for multiple user access.**
- **Integrate sensor communication and data collection functionality.**
- **Develop basic alert/notification system for temperature and humidity deviations.**
- **Conduct initial unit testing for implemented features.**

Sprint 2 (Duration: 3 weeks)
Objective: Enhance Monitoring and Control Features

Tasks:

- **Refine user interface design for improved usability.**
- **Implement real-time monitoring of temperature and humidity levels.**
- **Enhance alert/notification system to provide detailed information on deviations. Integrate user input for food type, mass, and buying date into the system.**
- **Develop logic for determining storage period based on food production and consumption dates.**
- **Conduct thorough testing of monitoring and control features.**
- **Begin documentation of system functionalities and usage guidelines.**

Sprint 3 (Duration: 3 weeks)
Objective: Advanced Functionality and Testing

Tasks:

- **Implement compartmentalization feature for different food types.**
- **Develop logic for setting temperature and humidity levels for each compartment. Enhance user interface to allow users to assign food items to specific compartments. Conduct extensive testing and validation of the entire system.**
- **Address any bugs or issues identified during testing.**
- **Finalize documentation including user manual and technical specifications.**
- **Prepare for deployment and release of the intelligent refrigerator system.**

REASONS TO CHOOSE THIS MODEL:

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- **Iterative and Incremental Development: Since we are going to design an application and needed hardware , some sort of prototypes are needed. Scrum enables us to make prototypes before the actual product.**

- **Collaborative Working: We will need people from different skills in the future because the project has two sides. Scrum allows us to collobrate and make each increment as sprints without being connected to others.**

- **Customer Satisfaction Focus: Agile model aims to maximize customer satisfaction. Customers actively participate and provide feedback at every stage of the project and since this is a costly project, customer satisfaction is the key point.**

- **Continuous Improvement and Feedback: Technology changes over time and this causes products to adapt. Changing a thing in this project in other models would be very costly. SCRUM minimizes the cost.**

- **High Efficiency and Fast Delivery: SCRUM accelerates the software development process and ensures that products are released faster. Short iterations and regular deliveries enable us to deliver the product features to customers sooner.**