CONSENT FORM FOR ORIGINALITY OF IDEA

School Name: School of Computer Science and Engineering
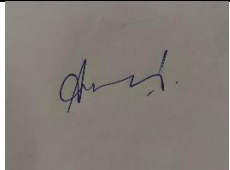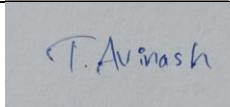**Group Number (IN Excel file mentioned):** 02
Date: 27/03/2025

Title of Idea/Project: Smart Refrigerator Food Tracker

I/We, hereby affirm that the idea titled above is our original idea and has not been copied, borrowed, or directly reproduced from any other source without proper acknowledgment.

We confirm the following:

1. The idea presented is our own and has not been claimed by any other individual or organization.
2. The idea has been properly checked on Google Patent Search for its originality and novelty.
3. I/We have not knowingly infringed upon any intellectual property rights, including copyright, patents, or trademarks.
4. In case of any collaborative work, all contributors have been duly acknowledged.
5. I/We do not wish to share the invention details with any third party other than those directly involved in the patent filing process, ensuring strict confidentiality.

Sr. No.	Name of Student	Registration Number:	Section	Signature
1	Andol Saketh	12221210	K22CW	
2	Avinash	12211270	K22CW	
3				

Pre-Assessment Format for Patent Idea Submission

1. Basic Information

- **Group Number:** 2
- **Team Members (Names & Roll Numbers):**
    1. Andol Saketh -12221210
    2. Avinash-12211270
- **Patent Idea Title: Smart Refrigerator Food Tracker**

---

2. Problem Statement & Justification

⬧ **Describe the problem your patent idea aims to solve:**
Food waste is a huge issue—people often forget what's in their fridge, leading to unnecessary purchases and expired food. Tracking expiry dates manually is inconvenient, and nutrition-conscious individuals struggle to monitor their food intake effectively.

⬧ **Why is this problem significant?**
Reduces food waste and saves money. Help people eat healthier by tracking their diet. Optimize food inventory for businesses like restaurants and grocery stores. Supports sustainability by minimizing waste and reducing the carbon footprint.

---

3. Novelty & Uniqueness

⬧ **How is your idea different from existing solutions?**
Most smart fridges today only have cameras or manual tracking. This system goes further by Using, AI to predict food spoilage based on temperature, humidity, and past patterns. Automatically recognizing food items with computer vision (no need to scan barcodes). Auto-generating grocery lists and integrating with online stores. Suggesting recipes based on available ingredients, reducing waste.

⬧ **Have you checked for similar patents?** (Yes/No)
Yes. While there are smart fridges, none combine real-time spoilage detection, automated food replenishment, and diet tracking the way this system does.

---

4. Technical Details & Implementation

⬥ How does your idea work?

Computer vision recognizes and categorizes food items.AI predicts expiration dates** based on fridge conditions and past data. IoT sensors track temperature and humidity, adjusting cooling for better preservation. Smart shopping assistant creates grocery lists and orders essentials. AI-powered meal planner suggests recipes using near-expiry ingredients.

What are the key components, algorithms, or techniques used?

Machine learning models for food recognition and spoilage prediction. IoT sensors to monitor conditions inside the fridge. Cloud-based inventory management system to track food stocks. API integration for online grocery ordering.

⬥ Does your idea require hardware, software, or both?

Hardware: Cameras, sensors, AI processor inside the fridge.

Software: AI-powered food tracking system, mobile app, cloud data processing.

---

5. Potential Applications & Market Scope

⬥ Who are the potential users?

Home users who want smart kitchen experience. Restaurants & grocery stores to manage inventory efficiently. Healthcare & fitness enthusiasts for nutrition tracking. Food banks & sustainability organizations to reduce waste

⬥ Where can this idea be applied?

Households: Prevents waste, saves money. Restaurants & supermarkets: Tracks stock, reduces losses. Hospitals & nutrition centers: Helps with diet monitoring.

---

6. Feasibility & Implementation Plan

⬥ What resources are needed for implementation?

AI engineers to train food recognition models. IoT developers for fridge sensor integration. Software team for mobile app & cloud backend. Partnerships with online grocery platforms.

⬥ Challenges & Limitations:

High initial cost for smart fridges. Privacy concerns (tracking user consumption habits). Integration with different refrigerator brands.

⬥ Timeline for development (if applicable):

3-6 months: AI model training for food recognition.

6-12 months: Prototype development with IoT sensors.

12-18 months: Beta testing & online store partnerships.

---

7. Ethical & Legal Considerations

⬙ Does your idea involve privacy concerns, ethical issues, or regulatory restrictions?
Yes. Data on food habits must be secure & anonymized. Compliance with GDPR & data protection laws is crucial.

⬙ Have you considered the environmental impact?
Reduces food waste = lower carbon footprint. IoT sensors are designed for ow energy consumption. Sustainable materials should be used in device manufacturing

---

8. Conclusion & Future Scope

⬙ Summarize your patent idea and its impact.

This AI-powered smart refrigerator system automates food tracking, reduces waste, and optimizes shopping & meal planning. By combining computer vision, AI, and IoT, it provides a futuristic, efficient, and sustainable solution for both homes and businesses

⬙ How can this idea be improved or expanded in the future?

Better AI models trained on diverse food datasets. Voice assistant integration for easier user interaction. Blockchain for food traceability, ensuring quality tracking from farm to fridge.