Vision Technology Problem Statement

Critical Requirement:

Implement real-time, stable camera input capture mechanism**:**

- **Input Source Options:**
  - Mobile device camera
  - External computer-connected camera

Mandatory Feature Implementations:

A. Items Detection

- Implement high-speed Items recognition using live camera feed
- The Items may comprise Grocery products like snacks and beverages, packaged foods, personal care , stationary, Household care.
- **Performance Benchmark:**
  - Capability to detect multiple shipments in single frame/Bulk detection
  - Detection and response time: Maximum 1000 milliseconds ○ Accuracy: Minimum 95% brand identification rate

B. Item Counting

- **Counting Accuracy:**
  - 100% precise item count
  - Advanced boundary detection algorithms
- **Challenging Scenarios:**
  - Overlapping items
  - Side-by-side placement
  - Partial occlusions

Sample cases:

C. Freshness Detection (Bonus)

- **Training Methodology:**
  - Use real-world object samples
  - Avoid stock image for training and testing
- **Freshness Evaluation Criteria:**
  - Comprehensive computational logic to be shared
  - Explore multi-factor freshness assessment for better output.

Submission Guidelines Technical

Submission Requirements

1. **Deliverable Format:**
    - Fully functional UI/Web Application/Web app/ Output Table.
    - Publicly accessible hosting and application/web link to be shared if deployed
    - Jupyter File with fully runnable code.

2. **Code Submission Guidelines:**
    - Important Note: Screenshot submissions will not be accepted for evaluation.
    - Please provide the complete GitHub or Google Colab link to your project
    - Ensure your repository contains the full runnable code.

3. **Data Visualisation**
    - Display the data in the specified format, referring to the example provided below-

Sl no	Timestamp	Item Name	Count
1	2024-11-29T05:14:01+05:30	Parle-G Biscuits	5
2	2024-11-29T05:14:01+05:30	Tata Tea	2
3	2024-11-29T05:14:01+05:30	Horlicks	1

For fresh produce-

Sl no	Timestamp	Produce	Freshness	Expected life span (Days)
1	2024-11-29T05:14:01+05:30	broccoli	3	5
2	2024-11-29T05:14:01+05:30	Onion	7	12
3	2024-11-29T05:14:01+05:30	Papaya	1	2

4. **Evaluation Criteria:**
    - Output accuracy/Performance
    - Technical innovation
    - Solution practicality
    - Real-world applicability

Recommended Development Approach

- Create solutions with genuine real-world utility
- Implement robust error handling
- Focus on scalable architecture

Best of luck to all participating teams!