Project Design Phase
Problem – Solution Fit Template

Date	15 February 2025
Team ID	LTVIP2026TMID91218
Project Name	Transferred learning identification of rotten fruits and vegetables
Maximum Marks	2 Marks

Problem – Solution Fit Template:

Problem Statement

Farmers, vendors, retailers, and quality inspectors face significant challenges in identifying rotten fruits and vegetables at an early stage. The current inspection process is mostly manual, time-consuming, inconsistent, and dependent on human judgment. As a result, spoiled produce often goes unnoticed until visible decay appears, leading to increased food wastage, financial loss, and reduced customer trust. The absence of an automated and reliable quality-checking system makes it difficult to maintain consistent food quality across the supply chain.

Customer Behavior & Existing Situation

- Customers rely on visual inspection to check quality

- Quality checking is done after spoilage becomes obvious

- Decisions are based on experience rather than data

- Limited time and labor for large-scale inspection

- High losses due to delayed identification of rotten produce

Problem–Solution Fit Canvas
Project: Rotten Fruits & Vegetables Identification using Transfer **Learnining**

1. CUSTOMER SEGMENT(S)

- Farmers
- Vegetable & fruit vendors
- Wholesalers and distributors
- Warehouse quality inspectors
- Retail store owners

2. JOBS-TO-BE-DONE / PROBLEMS (JBP)

- Identify rotten fruits and vegetables accurately
- Reduce food wastage during storage and transport
- Maintain consistent quality for customers
- Save time and labor in manual inspection
- Avoid financial losses due to spoilage

5. AVAILABLE SOLUTIONS (AS)

- Manual visual inspection
- Sorting by experienced workers
- Discarding produce after visible decay

Limitations:

- Time-consuming
- Inaccurate
- Late detection of spoilage

6. CUSTOMER CONSTRAINTS (CC)

- Limited time for inspection
- Dependence on human judgment
- Lack of automated tools
- Cost of advanced quality inspection systems
- Limited technical knowledge

7. BEBAVIOUR

- Inspect produce manually
- Remove items only after visible damage
- Accept some level of wastage as unavoidable
- Focus more on quantity than quality

9. PROBLEM ROOT CAUSE (RC)

- Lack of automated quality inspection systems
- Human error in manual checking
- Late-stage identification of spoilage
- No data-driven decision support

3. TRIGGERS

- Visible spoilage or customer comp-
- Large quantity of produce to inspect
- Losses due to mixed rotten and fresh produce
- Demand for better quality control
- Awareness of AI-based solutions in agriculture

7. BEHAVIOUR

- Inspect produce manually
- Remove items only after visible damage
- Accept some level of wastage as unavoidable
- Focus more on quantity than quality

8. CHANNELS OF BEHAVIOUR (CH)

- **Online Channels:**
- Mobile phones
- Web applications
- Digital images of produce

- **Offline Channels:**
- Local markets
- Warehouses
- Farms and retail stores

10. YOUR SOLUTION (EM)

Before Solution:

- Trustration due to wastage
- Strees from financial loes
- Uncertainity in quality decisions

After Solution:

- Confidence in quality inspection
- **Satisfaction** from reduced losses
- Trust in automated decision-making

✓ PROBLEM-SOLUTION FIT SUMMARY

The solution fits the customer problem by **automating** an existing **behavior** (manual inspection) using **simple image capture**, ensuring high adoption, faster decision-making, and **significant** reduction in food wastage and losses.

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