**Project Design Phase**

**Problem – Solution Fit Template**

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| Date | 25 June 2025 |
| Team ID | LTVIP2025TMID35341 |
| Project Name | Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables |
| Maximum Marks | 2 Marks |

**Problem – Solution Fit Template:**

**Smart Sorting** addresses a significant challenge in the agricultural and food supply chain—the need for fast, accurate, and scalable sorting of rotten fruits and vegetables. In food processing units, supermarkets, and supply hubs, manual inspection is still widely practiced. This method is slow, labor-intensive, prone to human error, and often results in poor quality control and increased food waste.

By applying **transfer learning with VGG16**, Smart Sorting automates the classification of produce into **fresh or rotten categories** with high accuracy. This AI-powered solution significantly reduces the dependency on manual sorting, improves operational efficiency, and ensures only high-quality produce reaches consumers—benefiting both producers and retailers.

Customers such as **agri-tech companies, retail chains, food processors, and smart kitchen appliance manufacturers** benefit by streamlining quality checks, minimizing waste, reducing labor costs, and enhancing brand reputation. The solution is integrated via a **Flask-based web application**, making it lightweight, user-friendly, and easily deployable in diverse environments—from factory floors to retail docks.

Ultimately, **Smart Sorting** delivers a strong problem-solution fit by aligning real-world quality control needs with an intelligent, accurate, and deployable AI system—helping modernize food inspection processes at scale.

**Template:**

