**Project Design Phase**

**Proposed Solution Template**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID42728 |
| Project Name | Clean Teach: Transforming Waste Management with Transfer Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Waste in urban areas is often poorly segregated at the source, which leads to ineffective recycling and increased landfill. Manual segregation is time-consuming and often inaccurate. |
|  | Idea / Solution description | CleanTech is a web-based AI solution that classifies uploaded waste images into biodegradable, recyclable, or trash using a VGG16 deep learning model integrated with Flask. |
|  | Novelty / Uniqueness | Unlike manual systems, our model provides instant classification using image input. It is lightweight, accurate, and easy to scale or integrate into smart waste systems. |
|  | Social Impact / Customer Satisfaction | The solution encourages eco-friendly habits, reduces pollution, and promotes smart segregation. It simplifies public participation in waste management using just a mobile image. |
|  | Business Model (Revenue Model) | It can be licensed to municipal corporations or smart bin companies. Advanced features like history tracking, analytics, and mobile deployment can be offered as premium services. |
|  | Scalability of the Solution | The model can be deployed on web, mobile, or smart bins. With API integration, it can be used by recycling centers, NGOs, and city councils for real-time waste tracking and automation. |