

Project Design Phase
Proposed Solution Template

Date	27th January 2025
Team ID	LTVIP2025TMID36392
Project Name	Enchanted Wing: Marvels of Butterfly Species
Maximum Marks	2 Marks

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Accurately identifying butterfly species is a challenging task for students, researchers, and nature enthusiasts due to visual similarities and lack of accessible tools.
2.	Idea / Solution description	A deep learning–based web application that uses a MobileNetV2 model to classify butterfly species from uploaded images. The solution is deployed via Streamlit, making it accessible and user-friendly.
3.	Novelty / Uniqueness	Unlike general-purpose image classifiers or limited mobile apps, this solution is tailored specifically for butterfly identification, using a fine-tuned model trained on 75 classes. It also includes a clean UI and top-3 predictions for better reliability.
4.	Social Impact / Customer Satisfaction	Helps students, biology researchers, and wildlife observers learn, document, and study biodiversity more efficiently. Reduces dependency on experts and promotes independent exploration and learning.
5.	Business Model (Revenue Model)	Can be offered as a freemium model — free basic classification, with paid advanced features such as bulk prediction, downloadable reports, or integration with educational platforms. Potential partnerships with schools, colleges, and eco-tourism projects.
6.	Scalability of the Solution	The model and interface can be extended to support more species, insects, or even plants. It can be converted into a mobile app or API service, and scaled to global datasets with localization support.