**Project Design Phase**

**Proposed Solution Template**

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| Date | 28 June 2025 |
| Team ID | LTVIP2025TMID32623 |
| Project Name | Enchanted Wings: Marvels of Butterfly Species |
| 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) | Current educational approaches often lack real-time engagement and practical data, making it difficult for students, communities, and researchers to understand butterfly behavior, habitat needs, and environmental changes as they happen. |
|  | Idea / Solution description | Walk through a glowing cocoon tunnel that gradually opens into a kaleidoscope of colors—mirroring a butterfly’s transformation from caterpillar to winged adult. |
|  | Novelty / Uniqueness | This concept uniquely merges butterfly conservation with Internet of Things (IoT) technology—turning traditional butterfly gardens and exhibits into **living, data-rich ecosystems**. Unlike static displays or educational programs, this project offers **real-time insights** into butterfly habitats, plant health, and climate conditions. |
|  | Social Impact | Empowers communities—especially youth—to understand their local environment and take **direct action for pollinator and habitat preservation**, bridging the gap between awareness and responsibility.  Provides **accessible, hands-on STEM learning** through real-world environmental data and IoT technology, especially in under-resourced schools where nature education and tech infrastructure are limited. |
|  | Business Model (Revenue Model) | Provide **real-time environmental data and citizen science opportunities** for schools, museums, and nature centers, **Individual Nature Enthusiasts & Gardeners** interested in butterfly-friendly gardening and real-time data. |
|  | Scalability of the Solution | Using cloud platforms for data storage and analytics enables **near-infinite scaling** of data collection and processing, supporting thousands or millions of connected devices worldwide without heavy local infrastructure. |