Project Design Phase
Proposed Solution Template

Date	15 February 2026
Team ID	LTVIP2026TMIDS52481
Project Name	Dog Breed Identification Using Transfer Learning
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)	Identifying dog breeds manually from images is difficult because many breeds share similar visual characteristics, pose variations, and texture patterns. This makes breed recognition time-consuming and error-prone for veterinarians, rescue organizations, and pet-care platforms. To overcome this limitation, an automated deep-learning-based system is required to accurately classify dog breeds from images in a fast and reliable manner.
2.	Idea / Solution description	Identifying dog breeds manually from images is difficult because many breeds share similar visual characteristics, pose variations, and texture patterns. This makes breed recognition time-consuming and error-prone for veterinarians, rescue organizations, and pet-care platforms. To overcome this limitation, an automated deep-learning-based system is required to accurately classify dog breeds from images in a fast and reliable manner.
3.	Novelty / Uniqueness	Uses **transfer learning with MobileNetV2** for efficient and accurate classification. Handles **fine-grained breed differences** across many dog classes. Provides **real-time prediction through a web interface**. Enables **cloud-based deployment using Hugging Face**, improving accessibility.
4.	Social Impact / Customer Satisfaction	Helps **animal shelters and rescue centers** identify breeds quickly. Supports **veterinary assistance and pet-care recommendations**. Improves **pet adoption platforms** with accurate breed recognition.

		? Provides an **easy-to-use AI tool** for general users and researchers.
5.	Business Model (Revenue Model)	? **Freemium web application** for public usage. ? **API-based subscription** for pet-care platforms and veterinary services. ? Integration with **e-commerce pet services** for recommendations. ? Potential **SaaS model for animal research organizations**.
6.	Scalability of the Solution	? Can be extended to **more dog breeds and animal species**. ? Supports **cloud deployment for global access**. ? Model can be upgraded with **larger datasets and improved architectures**. ? Can integrate **mobile apps and real-time camera recognition**.