PROBLEM INITIALIZATION AND PLANNING PHASE

Date	20/06/2025
Team ID	SWTID1749826875
Project Name	Dog Breed Identification using Transfer Learning
Maximum Marks	3 marks

Problem Statement:

Accurate identification of dog breeds from images presents a significant challenge due to the high visual similarity between many breeds. Traditional image recognition systems often fail to distinguish between breeds with subtle differences in features such as coat colour, size, or facial structure. This leads to misidentification, which can have practical implications for pet owners, veterinarians, animal shelters, and researchers.

To address this, the project proposes a transfer learning-based image classification model trained on a diverse set of dog breed images. By leveraging pre-trained deep learning architectures and fine-tuning them on a curated dataset, the model aims to learn fine-grained visual patterns that differentiate breeds more effectively. This system can serve multiple real-world use cases:

- Pet registration systems for breed documentation.
- Veterinary clinics for breed-specific medical advice.
- Shelters for faster breed identification and rehoming.
- Lost pet identification through visual search apps.

Visual Similarity confusion between breeds:

Image	Actual Breed	Predicted Breed	Issue
	Labrador Retriever	Golden Retriever	Similar coat color and size

Goal:

To build an intelligent breed classification system using transfer learning that consistently outperforms traditional methods by accurately identifying dog breeds, even among visually similar categories