Project Design Phase
Problem – Solution Fit Template

Date	16 February 2026
Team ID	LTVIP2026TMIDS52481
Project Name	Dog Breed Identification Using Transfer Learning
Maximum Marks	2 Marks

Problem – Solution Fit Template:

Problem–Solution Fit means clearly identifying a real user problem and ensuring that the proposed AI-based solution effectively solves it. In this project, the focus is on **accurate and automatic identification of dog breeds from images** using deep learning and transfer learning.

This approach helps innovators and developers understand user needs, validate whether the solution truly addresses the challenge, and improve adoption of intelligent animal-recognition systems.

Purpose:

 Solve the difficulty of **manual dog breed identification**, especially when breeds look visually similar.
 Provide an **AI-powered automated classification system** using CNN and MobileNetV2 transfer learning.
 Enable **fast, accurate, and accessible breed prediction** through a web-based interface.
 Improve **pet care, veterinary support, and rescue/adoption decision-making** using reliable breed information.
 Deliver a **scalable and user-friendly intelligent recognition solution** deployable on cloud platforms.

Template:

Customer Profile: Dog Breed Classification

1. CUSTOMER SEGMENT(S) — CS

- Pet owners who want to quickly identif the dog's breed.
- Veterinary professionals needing breed informat for diagnosis. and care.
- Animal rescue and adoption centers verifying breed details.
- Pet-care service providers recommending food, grooming & training
- Researchers working on animal recognition and biodiversity studies.

6. CUSTOMER CONSTRAINTS — CC

Which constraints prevent your customers froml (agoml-Inlečjaoe of limit ther jood ale ablow atiei?

- Limited technical knowledge of AI tools
- Poor image quality affecting prediction accuracy
- Lack of internet connectivity in some areas
- Concerns about reliability of automated systems

5. AVAILABLE SOLUTIONS — AS

Which solutions are available to the customers whiten they face the problem of need to gerailis jood's a whotoudl or liteil-elsare?

- Manual identification using books or internet images
- Consultation with veterinarins or breed experts
- Basic mobile apps with limited accuracy
- Traditional image-processing tools with low relability

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

- Difficulty identifying dog breeds manually due to šimifav visual features
- Lack of quick and reliable breed-recognition tools.
- Time-consuming consultation with experts or *veterinarians.*
- Need for automated classification from uploaded images.
- Requirement for scalable digital solutions in rescue and adj-*ption workflows*

9. PROBLEM ROOT CAUSE — RC

- Many dog breeds share fine-grained visual similarities
- Manual recognition depends on expert knowledge
- Traditional methods lack automation and scalability
- Absence of accurate AI-based public tools

7. BEHAVIOUR — BE

- Searching online for breed information
- Uploading images to apps or -websites for identification
- Visiting veterinarias for confirmation
- Using pet-care platforms for recommendantos

3. TRIGGERS — TR

- Uploading a dog image for identification
- Meed to know breed for medical treatment or ivrycccination
- Adoption or ressue verification processes
- Curiusity about mixed or unknow dog breeds
- Requirement for pet-care recommendations based on breed

10. YOUR SOLUTION — SL

- Deep learning CNN-based MobileNetV2 transfer learning-model
- Automatic dog-breed classification from uploaded images
- Flask web imertase for raal-time prediction
- Cloud deployment for global accesability
- Fast, accurate, and user-firendly inteligent recognition system

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8. CHANNELS of BEHAVIOUR — CH

- **1. ONLINE**
- Wisl applications for image-based prediction
- Pet-care websikie and veterinary poriale
- Cloud-baeed AI platforms (e.g. Augging Face deployment)

4. EMOTIONS; BEFORE / AFTER — EM

Hop do eustomers fest tohee they face a probem or a job and afiormerd, *Le: lost, neasure x confided, in cormal – ustil in your communication shentoy*

9. OFFLINE — CC

- Veterinary clinics and animal shelters
- Adoption-centers and pet-care stores
- Phintod breed identification quides