

## Ideation Phase

### Brainstorm & Idea Prioritization Template


Date	05 November 2023
Team ID	Team-592393
Project Name	Dog Breed Identification using Transfer Learning
Maximum Marks	4 Marks

#### Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich number of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

#### Step-1: Team Gathering, Collaboration and Select the Problem Statement



### Brainstorm & idea prioritization

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- 10 minutes to prepare
- 1 hour to collaborate
- 2-8 people recommended

#### Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

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- Team gathering**  
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.
- Set the goal**  
Think about the problem you'll be focusing on solving in the brainstorming session.
- Learn how to use the facilitation tools**  
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#)

#### 1 Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

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##### PROBLEM

Dog breed Identification involves training a machine-learning model to classify images into specific dog breed categories. Deep learning algorithms recognize unique physical characteristics like size, shape, coat color, and facial features, enabling accurate breed predictions. The Transfer Learning Approach, using VGG19 architecture, requires a substantial dataset with labeled dog images from various breeds. During training, the model learns to associate visual patterns with each breed, adjusting its internal weights for better accuracy. This technology has practical applications, aiding veterinarians in diagnosis, helping dog owners understand their pets, and supporting services like adoption and breeding. Additionally, it contributes to the study of genetic and phenotypic traits in different dog breeds.

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##### Key rules of brainstorming

To run a smooth and productive session

- Stay in topic.
- Defer judgement.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

## Step-2: Brainstorm, Idea Listing and Grouping

2

### Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

#### TIP

You can select a sticky note and hit the pencil/brush to sketch icon to start drawing!

### Alexia

gather a diverse and extensive dataset of dog images with accurate breed labels

handle data imbalances among different breeds.

Thoroughly test the application to ensure it functions correctly and provides accurate predictions.

Create the flask app for the webpage

### Gayatri

Monitor the training process for convergence and potential overfitting.

Defining training hyperparameters, such as learning rates, batch sizes, and optimization algorithms.

Evaluate the model's performance on the validation and test sets using relevant metrics

Create HTML,JS and CSS pages for the webpage

3

### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

#### TIP

Add custom labels to sticky notes to make it easier to find, browse, organize, and categorize important ideas as business within your mind.

Design and develop a user-friendly interface for users to upload dog images and receive breed predictions.

Clean and preprocess the data, which may involve resizing, cropping, and standardizing the images.

Implement any post-processing steps, such as ensembling, to enhance prediction accuracy.

Fine-tune hyperparameters to optimize the model's performance.

Thoroughly test the application to ensure it functions correctly and provides accurate predictions.

Augment the dataset to increase its size and diversity, which can improve model generalization.

### Step-3: Idea Prioritization

#### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

#### TIP

Participants can use their names to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the H key on the keyboard.

