

## Ideation Phase

### Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID35588
Project Name	A Novel Method for Handwritten Digit Recognition System
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 amount 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.

Reference: <https://www.mural.co/templates/empathy-map-canvas>

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

Template

# Brainstorm & idea prioritization

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.

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

A Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools

Use the Facilitation Superpowers to run a happy and productive session.

Open article

## 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

PROBLEM

How might we [your problem statement]?

### Key rules of brainstorming

To run an smooth and productive session

Stay in topic.

Encourage wild ideas.

Defer judgment.

Listen to others.

Go for volume.

If possible, be visual.

Share template feedback

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

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**Brainstorm**  
Write down any ideas that come to mind that address your problem statement.  
[10 minutes](#)

**Hrithik Viknesh B**  
Use Transfer Learning  
Use of Batch Normalization Between Neural network layers  
Use of Contour based methods to isolate individual digits.  
Use CNN as a feature extractor

**Praveen R**  
Can perform noise removal to improve the accuracy.  
Use of MobileNet model as feature extractor  
Perform cross validation for better evaluation.  
Perform Data Augmentation to increase amount of training data.

**Kalaiseelan S**  
Use of ReLU Activation function  
Perform Image Normalization  
Use of more than 1 model (ensemble learning)  
Use of ReLU Activation function

**Avinesh Krishna B**  
Discussion before every phase and writing code  
Get feedback from other friends as a user.  
Use collaborative todo apps.  
Analyze user requirements and thoughts.

TIP  
You can select a sticky note and hit the pencil (pin) to stick it. Click on star (bookmark)

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**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](#)

**Data Collection and Data pre-processing**  
MNIST dataset  
Applying Gaussian blur filter  
Perform image pre-processing  
Use of MobileNet model as feature extractor

**Model desing and training**  
Use Transfer Learning  
Adam Optimiser  
Use softmax function in output layer  
ReLU Activation function  
Use CNN as a feature extractor

**Model tuning and output**  
Tune hyper parameters  
Use Batch Normalization Between Neural network layers  
Using various SVM Kernels  
Perform cross validation  
Perform Normalization

**Various Other Techniques**  
Computer Vision Techniques  
Perform Data Augmentation  
Use of more than 1 model (ensemble learning)

## Step-3: Idea Prioritization

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## 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

