


Ideation Phase

Brainstorm & Idea Prioritization

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| Date | 17 September 2022 |
| Team ID | PNT2022TMID06143 |
| Project Name | A Novel Method for Handwritten Digit Recognition System |
| Maximum Marks | 4 Marks |

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



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

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➔

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.

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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

PROBLEM

How might we implement a new Hand Written Digit Recognition System?

Key rules of brainstorming

To run a smooth and productive session

- 😊 Stay in topic.
- 💡 Encourage wild ideas.
- ⏸️ Defer judgment.
- 👂 Listen to others.
- 🗣️ Go for volume.
- 👁️ 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

Can be implemented using Java

Use of keras library

MINST dataset can be used

Using Django library to develop the web Application

Use of Gaussian Naive Bayes algorithm

Use of Transfer learning To improve accuracy and learning time

Use of Digits dataset

Use of Theano Library

Use of Support Vector Machine to classify images

Recognise each character using

Can be implemented using Python

Creating API for further use

Generative models to produce more quality data

Using TensorFlow Library

Custom Artificial neural networks to detect images

Training Model from Scratch

Using Kuberntes and Docker for the web app

Creating a New custom Dataset

Can be implemented using C++

Offline Recognition

Develop a GUI Web app

Using Flask library to develop the web Application

Can be implemented using C++

Use of Pytorch library

Use US postal Service dataset

Develop a GUI software package

State analysis of the data input and extract out the scope of features

Online Recognition

Random forest algorithm can be used

Can be implemented using R programming

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

Datasets

MINST dataset can be used

Use Digits dataset

Creating a New custom Dataset

Use US postal Service dataset

Algorithms

Use of Gaussian Naive Bayes algorithm

Using Convolutional Neural Network, Random Forest, and Support Vector Machine

Custom Artificial neural networks to detect images

Transfer learning To improve accuracy and learning time

Use of Support Vector Machine to classify images

Implementation Libraries

Use of keras library

Use of Pytorch library

Use of Theano Library

Using TensorFlow Library

Implementation Languages

Can be implemented using C++

Can be implemented using R programming

Can be implemented using Java

Can be implemented using Python

Final Application

Creating API for further use

Develop a GUI Web app

Develop a GUI software package

Setting submodules and Docker for the web app

Web app frameworks

Using Django library to develop the web Application

Using Flask library to develop the web Application

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

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

