

Ideation Phase

Brainstorm & Idea Prioritization Template

Date	19 OCTOBER 2022
Team ID	PNT2022TMID24131
Project Name	DETECTING PARKINSONS DISEASE USING MACHINE 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 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



DETECTING PARKINSONS DISEASE USING MACHINE LEARNING

Using pattern recognition techniques and multiple machine learning approaches, Parkinson's disease is classified and the risk is predicted to the extent using the given speech signal and speech data from the patients. The dataset is collected from the UCI repository. This model is aimed to provide greater accuracy than other complex models. In this project, Light Gradient Boosting Model is used to classify Parkinson disease. The main objective of this project is to train, test the data and predict the data to find the similarities and differences among the data and also classify based on the LGBM model as it shows higher accuracy compared to the other models. And the other objective is to check which classification algorithm gives high accuracy rate and less error rate for the given data. The Pycaret package is being used for the training and classification purpose the csv data has to be uploaded to the system and the backend takes care of the prediction process and gets the csv files with the prediction results to download for the user which can be used for later analysis. The Pyplot library is used for the dynamic graphs that are displayed on the final frontend of the system which is created using the datagram of the final csv file with other pyplot parameters required for the plot generation.

10 minutes to prepare

1 hour to collaborate

2-8 people recommended

Share template feedback

→

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 →

1

Define your problem statement

The main aim is to predict the prediction efficiency that would be beneficial for the patients who are suffering from Parkinson and the percentage of the disease will be reduced. Generally in the first stage, Parkinson's can be cured by the proper treatment. So it's important to identify the PD at the early stage for the betterment of the patients. The main purpose of this research work is to find the best prediction model i.e. the best machine learning technique which will distinguish the Parkinson's patient from the healthy person. The techniques used in this problem are KNN, Naïve Bayes, and Logistic Regression. The experimental study is performed on the voice dataset of Parkinson's patients which is downloaded from Kaggle. The prediction is evaluated using evaluation metrics like confusion matrix, precision, recall accuracy, and f1-score. The author used feature selection where the important features are taken into consideration to detect Parkinson's.

5 minutes

PROBLEM

The prediction efficiency that would be beneficial for the patients who are suffering from Parkinson and the percentage of the disease will be reduced.

Key rules of brainstorming

To run a smooth and productive session

Stay in topic.

Defer judgment.

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 in the pencil, switch to "sticky" font to start drawing!

SHYAM GANESH E

- SYSTEM PREDICTION SHOULD BE ACCURATE
- USEFUL TO PEOPLE WITH NO PRIOR KNOWLEDGE ABOUT IT
- SYSTEM SHOULD BE EASILY MAINTAINED

KARTHIK P

- IT SHOULD BE IMPLEMENTED WITH HELP AND SUPPORT SERVICES
- IT SHOULD REACH TO EVERYONE
- IT SHOULD SHOW SAME AS THE DOCTOR'S PRESCRIPTION

NADEEM SHERIFF E

- IT SHOULD BE WORTHY TO ALL PATIENTS
- IT SHOULD ALSO PREDICT ALL KINDS OF NOSEY PROBLEMS

SANJU R

- HUMANS SHOULD BE CURED
- IT SHOULD BE COMPATIBLE WITH FUTURE TECHNOLOGIES
- IT SHOULD BE TRUSTED

NANDHAKUMAR R

- MEDICATIONS SHOULD BE CORRECTLY MENTIONED
- EASY ACCESS TO PREDICTED INFORMATION
- SYSTEM SHOULD COMMUNICATE WITH PATIENTS IN ALL ASPECTS
- AT EMERGENCY STAGE, IT SHOULD SUMMON DOCTORS ON SPOT

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 customizable tags to sticky notes, for example, to mark, to delete, to organize, and to categorize related ideas as you work within your ideas.

CATEGORY 01

- System prediction should be accurate
- System should not harm humans at any cost
- It should be implemented with help and support services

CATEGORY 02

- System should communicate with patients in all aspects
- Easy access to predicted information
- It should take less time for prediction
- Medications should be correctly mentioned

CATEGORY 03

- Useful to people with no prior knowledge about it
- It should make people to follow proper diet
- It should be worthy to all patients
- It should be trusted

Step-3: Idea Prioritization

4 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