

Ideation Phase

Brainstorm & Idea Prioritization Template

Date	15 OCTOBER 2022
Team ID	PNT2022TMID39642
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.

💡 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

TIP You can select a sticky note and hit the pencil, switch to sketchy 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

NADEEM SHERIFF E

IT SHOULD BE WORTHY TO ALL PATIENTS

MEDICATIONS SHOULD BE CORRECTLY MENTIONED

IT SHOULD ALSO PREDICT ALL KINDS OF KIDNEY PROBLEMS

NANDHAKUMAR R

EASY ACCESS TO PREDICTED INFORMATION

SYSTEM SHOULD COMMUNICATE WITH PATIENTS IN ALL ASPECTS

AT EMERGENCY STAGE IT SHOULD SUMMON DOCTORS ON SPOT

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

SANJU R

HUMANS SHOULD BE CURED

IT SHOULD BE TRUSTED

IT SHOULD BE COMPATIBLE WITH FUTURE TECHNOLOGIES

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 allow notes to be grouped by kind, topic, urgency, and category. Use color-coding to organize 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

System should be easily maintained

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

Importance
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Feasibility
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)