**Ideation Phase**

**Brainstorm & Idea Prioritization Template**

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| Date | 06 May 2023 |
| Team ID | NM2023TMID15563 |
| Project Name | Deep Learning Model for Detecting diseases in Tea Leaves |
| Maximum Marks | 4 Marks |

**Project Title: Deep Learning Model for Detecting Diseases in Tea Leaves**

**Project Overview:**

In this project, we aim to develop a deep learning model that can accurately detect various diseases in tea leaves. The model will be trained on a large dataset of tea leaf images, labeled with different types of diseases. The main goal of this project is to provide a cost-effective and accurate solution for detecting diseases in tea leaves, which will help farmers to take timely actions and prevent crop losses.

**Project Goals:**

- Develop a deep learning model for detecting various diseases in tea leaves.

- Train the model on a large dataset of labeled tea leaf images.

- Test the accuracy of the model on a separate validation dataset.

- Develop a user-friendly interface for the model to make it accessible to farmers.

**Dataset:**

We will collect a large dataset of tea leaf images from various sources, including farmers, research institutes, and public datasets. The dataset will be labeled with different types of diseases, including but not limited to red rust, blister blight, and gray blight. We will also collect images of healthy tea leaves for comparison.

**Methodology:**

We will use a convolutional neural network (CNN) for the deep learning model, which is a popular architecture for image classification tasks. We will train the model on the labeled dataset using transfer learning techniques to speed up the training process and improve the accuracy. We will evaluate the model's accuracy on a separate validation dataset and fine-tune the model as needed.

**Deliverables:**

A deep learning model for detecting diseases in tea leaves.

A dataset of labeled tea leaf images.

A validation dataset for testing the accuracy of the model.

A user-friendly interface for the model.

**Timeline:**

Dataset collection: 1 month

Model development: 3 months

Model testing and fine-tuning: 2 months

Interface development: 1 month

Final testing and deployment: 1 month

**Team:**

The project will require a team of experts in computer vision, deep learning, and web development. The team will consist of:

Project manager

Deep learning engineer

Computer vision engineer

Web developer

**Budget:**

The project budget will depend on the size of the team, the dataset size, and the infrastructure required for training the deep learning model. We estimate the budget to be around $100,000-$150,000, including hardware, software, and personnel costs.

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