Ideation Phase
Brainstorm & Idea Prioritization Template

Date	06 May 2023
Team ID	NM2023TMID17493
Project Name	CovidVision: Advanced COVID-19 Detection from Lung X-rays with Machine Learning or Deep Learnings
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.

❶ Problem Statement

COVID-19 (coronavirus disease 2019) is an infectious disease caused by severe acute Medical images and artificial intelligence (AI) have been found useful for rapid assessment to provide treatment of COVID-19 infected patients.One of the biggest challenges following the Covid-19 pandemic is the detection of the disease in patients. To address this challenge we have been using the Deep Learning Algorithm to build an image recognition model that can detect the presence of Covid-19 from an X-Ray or CT-Scan image of a patient's lungs.
Transfer learning has become one of the most common techniques that has achieved better performance in many areas, especially in medical image analysis and classification. We used Transfer Learning techniques like Inception V3, Resnet50, Xception V3 that are more widely used as a transfer learning method in medical image analysis and they are highly effective.

❷ Brainstorm

Type your paragraph...

🕐 Type your paragraph...

> **TIP** 💡
> You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Keerthanaa

| Deep learning algorithms | Datasets collection | Study about X-Ray analysis |

Nadheedha

| Transfer laerning | Study of Inception V3 | Analyzing CT scans |

Sharon

| Xception Model | Kaggle Datasets | Classification algorithms |

Kamali

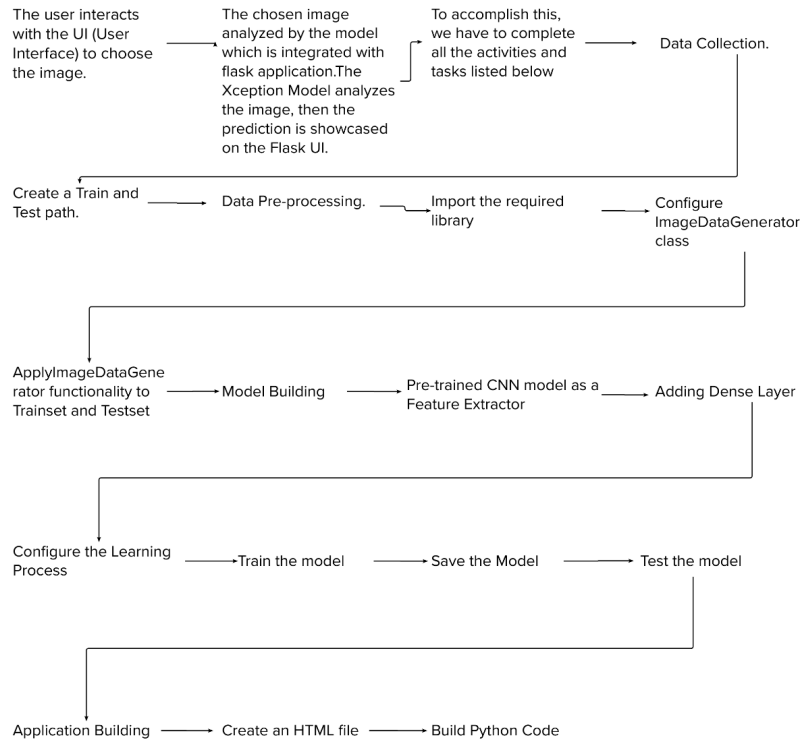| TensorFlow: | Image Analysis of X-ray and CT scans | Performance analysis |

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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 and break it up into smaller sub-groups.

🕐 **20 minutes**

The user interacts with the UI (User Interface) to choose the image. → The chosen image analyzed by the model which is integrated with flask application.The Xception Model analyzes the image, then the prediction is showcased on the Flask UI. → To accomplish this, we have to complete all the activities and tasks listed below → Data Collection.

Create a Train and Test path. → Data Pre-processing. → Import the required library → Configure ImageDataGenerator class

ApplyImageDataGenerator functionality to Trainset and Testset → Model Building → Pre-trained CNN model as a Feature Extractor → Adding Dense Layer

Configure the Learning Process → Train the model → Save the Model → Test the model

Application Building → Create an HTML file → Build Python Code

The main idea here is to analyze the image using Xception model and then to predict it on Flask UP. Then after collecting training and testing the data is pre-processed and the model is built. For feature Extraction, we use a pre-trained CNN model. Then we add a dense layer and configure the learning process then to train and save the model. Finally, the model is tested and the application is built and the python code is built

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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**

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.)