Project Design Phase-I
Proposed Solution Template

Date	23 October 2023
Team ID	Team-592616
Project Name	Detecting Covid-19 from Chest X-Rays using Deep Learning Techniques
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The COVID-19 pandemic has affected millions of people all over the world. The most common method to identify people who have contracted COVID-19 is through the RT-PCR test. However, this method can be time-consuming. An alternative is the use of chest X-rays of patients. By automating the diagnosis process with the help of a Convolutional model or other image-processing models, and with the supervision of health professionals, the diagnosis process can be accelerated. This helps in providing timely medical care for the patient.
2.	Idea / Solution description	It is required to develop and deploy a Convolutional Neural Network model for determining the diagnosis result. To achieve this, a transfer learning approach is recommended where the output layer of a pre-defined model is modified and trained with the necessary data set. This will help in achieving the desired model. Additionally, finetuning the existing or built model can lead to better accuracy.

3.	Novelty / Uniqueness	The proposed solution can generate results in a matter of seconds, unlike the RT-PCR test which takes around a day to provide results. The proposed model takes a chest X-ray as an input and quickly determines the outcome. The health professional can verify the results and proceed with further processing. A less time-consuming model for diagnosis is the major novelty of this proposed solution.
4.	Social Impact / Customer Satisfaction	Using AI models to assist in Covid diagnostics has the potential to greatly benefit healthcare. It serves as a powerful aid for doctors, especially in scenarios where diagnoses may be complex or uncertain. These models can provide doctors with an additional layer of insight, helping to validate their findings and reduce the margin of error, ultimately leading to more accurate decisions.
5.	Business Model (Revenue Model)	The shift from RT-PCR to chest X-ray can help the scan and test centers handle a larger volume of patients. With this model, the centers can hire a professional to determine the results, reducing their dependency on doctors and other officials. With this proposed solution the diagnosis center can directly send results to the patient and notify the corporation on the result. By doing so, the test centers can increase their profits.
6.	Scalability of the Solution	The proposed solution can be scaled in a manner to predict other lung-related issues apart from COVID-19. Training the model labelled examples of different lung disorder X-rays can make it feasible