Project Initialization and Planning Phase

Date	2 Dec 2024
Team ID	TMID739650
Project Name	ADVANCED COVID-19 DETECTION USING LUNG X-RAY BY DEEP LEARNING
Maximum Marks	3 Marks

Define Problem Statements (Customer Problem Statement Template):

The COVID-19 pandemic has significantly impacted global health, and timely detection of the disease is critical for effective management. Traditional diagnostic methods, such as RT-PCR, are time-consuming and resource-intensive, leading to delays in diagnosis and treatment. Chest X-rays have been shown to provide valuable insights into lung abnormalities associated with COVID-19. However, manual interpretation of X-rays is prone to errors and requires expert radiologists. This project aims to develop an advanced deep learning-based system that can automatically detect COVID-19 from lung X-ray images. By leveraging convolutional neural networks (CNNs) and transfer learning, the system will be able to accurately identify COVID-19 infections, providing a faster and more reliable alternative to traditional diagnostic methods. The proposed model can assist healthcare professionals in diagnosing COVID-19 more efficiently, especially in regions with limited access to medical experts.

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a healthcare professional working in a hospital.	diagnose COVID-19 patients using chest X-rays.	manual interpretation of X-rays is time-consuming and prone to human error.	it requires expert radiologists to analyze the images accurately, which may lead to delays in diagnosis and treatment.	concerned about the inefficiency and the risk of misdiagnosis, especially during high patient volumes.
PS-2	a researcher developing AI-based diagnostic tools.	create an automated solution for COVID-19 detection using X-ray images.	existing systems lack the accuracy and robustness needed for reliable clinical use.	current AI models have limitations in detecting COVID-19 in diverse patient populations and varying image qualities.	frustrated by the need for more advanced and accurate models to support healthcare professionals in making timely diagnoses.