SYNOPSIS OF PROJECT

Problem statement :

Primitive Diagnosis of Respiratory Diseases

This project aims to diagnose respiratory diseases like tuberculosis and pneumonia using chest X-ray images. A Convolutional Neural Network (CNN) is implemented and classifying individuals into normal, pneumonia, or tuberculosis categories. An integrated Internet of Things (IoT) component activates upon disease detection, utilizing a DHT sensor to measure environmental conditions. Based on this data and the individual's temperature, a voice alert advises on whether it's safe for the person to go outside.

Approach:

In our project, we begin by examining chest X-ray images to identify potential lung diseases, such as tuberculosis or pneumonia. To streamline this process, we employ a computer system known as a Convolutional Neural Network (CNN). This advanced technology allows for a rapid and efficient analysis of the X-ray images, alloqing us to diagnosis by saving time and simplifying the overall procedure.

By leveraging this smart computer system, we aim to enhance the accuracy of disease detection, ultimately facilitating quicker medical interventions. The integration of technology in medical diagnostics serves as a valuable tool in improving healthcare outcomes for patients with respiratory concerns.

Alongside this, we have an additional device equipped with a sensor. This sensor checks the air around a person, measuring how warm and humid it is, and it also keeps track of the person's temperature. If the computer system suggests that someone might be sick, we use this device to determine if it's safe for them to go outside. It's like having a helpful friend providing guidance based on the situation.

Moreover, in instances where the computer system identifies potential illness, this device is programmed to issue voice alerts to the individual. These alerts provide clear and immediate guidance based on the situation, enhancing the communication of critical information and enabling individuals to make informed decisions about their health and daily activities.

Benefits/Usecases of Project:

Efficient Screening: Using a computer program called a Convolutional Neural Network (CNN) to analyze chest X-ray pictures makes screening quicker and might make it easier for doctors by reducing their workload.

Remote Monitoring: The project includes a device that can check people's health from a distance. This is useful when regular check-ups or quick medical help are not easy to get.

Personalized Alerts: The device uses information about a person's health and the environment to give customized alerts. This makes the alerts more useful and fitting for each person.

Public Health Help: The project gives timely alerts and advice, which can help manage public health better. It might stop the spread of contagious respiratory diseases and support people's well-being.

Conclusion:

In conclusion, our project uses clever technology to quickly find if someone might have lung sickness from chest X-ray pictures. By teaming up with a sensor-equipped device, we not only check the air around a person but also keep an eye on their temperature. If the computer thinks someone could be sick, this device helps us decide if it's safe for them to go outside.

The best part is that if someone needs to stay indoors, we make sure they get a clear voice alert. This way, everyone stays well-informed about their health, and we all work together to keep each other safe. Our goal is to make things easier for doctors, help people get care sooner, and contribute to the health of the whole community. This project shows how smart tech and a bit of care can make a big difference in looking after each other's well-being.