

## Project charter

GENERAL PROJECT INFORMATION	
Detection of respiratory diseases using Machine Learning	<b>Date Prepared</b> 20th August 2022
<b>Project Guide</b>	<b>Program Lead</b>
Prof . M.S Dabale	Mr. Kshitij Jadhav
<b>Team Members</b>	
Miss Shravani Pawar Miss Palak Shravagi Miss Namrata Mali Miss Sayali Housale Miss Utkarsha Lokhande	

SCOPE STATEMENT
<b>Business Need and Problem Statement</b>
<ul style="list-style-type: none"><li>• Respiratory diseases are the cause of death and disability. Hence, to prevent and early diagnosis we are developing a model that can detect and classify severe respiratory diseases using respiratory voice.</li><li>• We are trying to develop a model to detect and classify respiratory diseases by using novel algorithms based on machine learning and deep learning.</li><li>• The application will be useful to respiratory therapists/professionals whose responsibilities include patient assessment, disease management, diagnostic evaluation, management, education, rehabilitation, and care of patients with abnormalities of the respiratory system.</li></ul>

<b>Project Goals and Objectives (Deliverables)</b>
<ul style="list-style-type: none"> <li>• To construct a model that takes in respiratory sound as input and classifies if a person's respiratory system is healthy or not.</li> <li>• To classify the type of disease.</li> <li>• To achieve higher accuracy and precision</li> </ul>
<b>Benefits</b>
<ul style="list-style-type: none"> <li>• The doctor can easily detect the disease .</li> <li>• The time will reduce which will lead to fast medical treatment of patient</li> <li>• It will reduce the manpower and increase the accuracy .</li> </ul>

<b>SUPPORTING DETAIL</b>
<b>Cost</b>
A budget is not allocated to this project as the required infrastructure is made available on the google colab . So the utilization of google colab can be done in this project .
<b>High-Level Phases (Project Lifecycle)</b>
Detailed Plan Train model Test Develop
<b>Critical Milestone Date(s) – include desired end date</b>
<ul style="list-style-type: none"> <li>• PA+1 week = Planning Complete</li> <li>• PA+2 weeks= Started learning DL</li> <li>• PA+ 3 weeks = Collecting Dataset and started development</li> <li>• PA+4 weeks = 70% model installed and trained</li> <li>• PA+8 weeks = 100% software installed and users trained</li> </ul>
<b>Constraints/Assumptions</b>
<ul style="list-style-type: none"> <li>• The implementation of model on a machine whose configurations are given below,  Processor: Intel(R) Core(TM)i5-5200U GPU: GeForce 920M,compute capability: 3.5  CPU: 2.20 GHz</li> </ul>

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Detection of respiratory diseases using Machine Learning

# **PROJECT MANAGEMENT PLAN**

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Version *1.0*

*1-Dec-2022*

# **1 INTRODUCTION**

Respiratory diseases are among the most common causes of severe illness and death worldwide. Prevention and early diagnosis are essential to limit or even reverse the trend that characterizes the diffusion of such diseases. In this regard, the development of advanced computational tools for the analysis of respiratory sounds can become a game changer for detecting disease-related anomalies, or diseases themselves. Respiratory audios are important indicators of respiratory health and respiratory disorder. So, to overcome this problem we need to developed a model which will classify or detect respiratory diseases using deep neural network

## **1.1 ASSUMPTIONS/CONSTRAINTS**

The implementation of model on a machine whose configurations are given below, Processor: Intel(R) Core(TM)i5-5200U GPU: GeForce 920M,compute capability: 3.5 CPU: 2.20 GHz

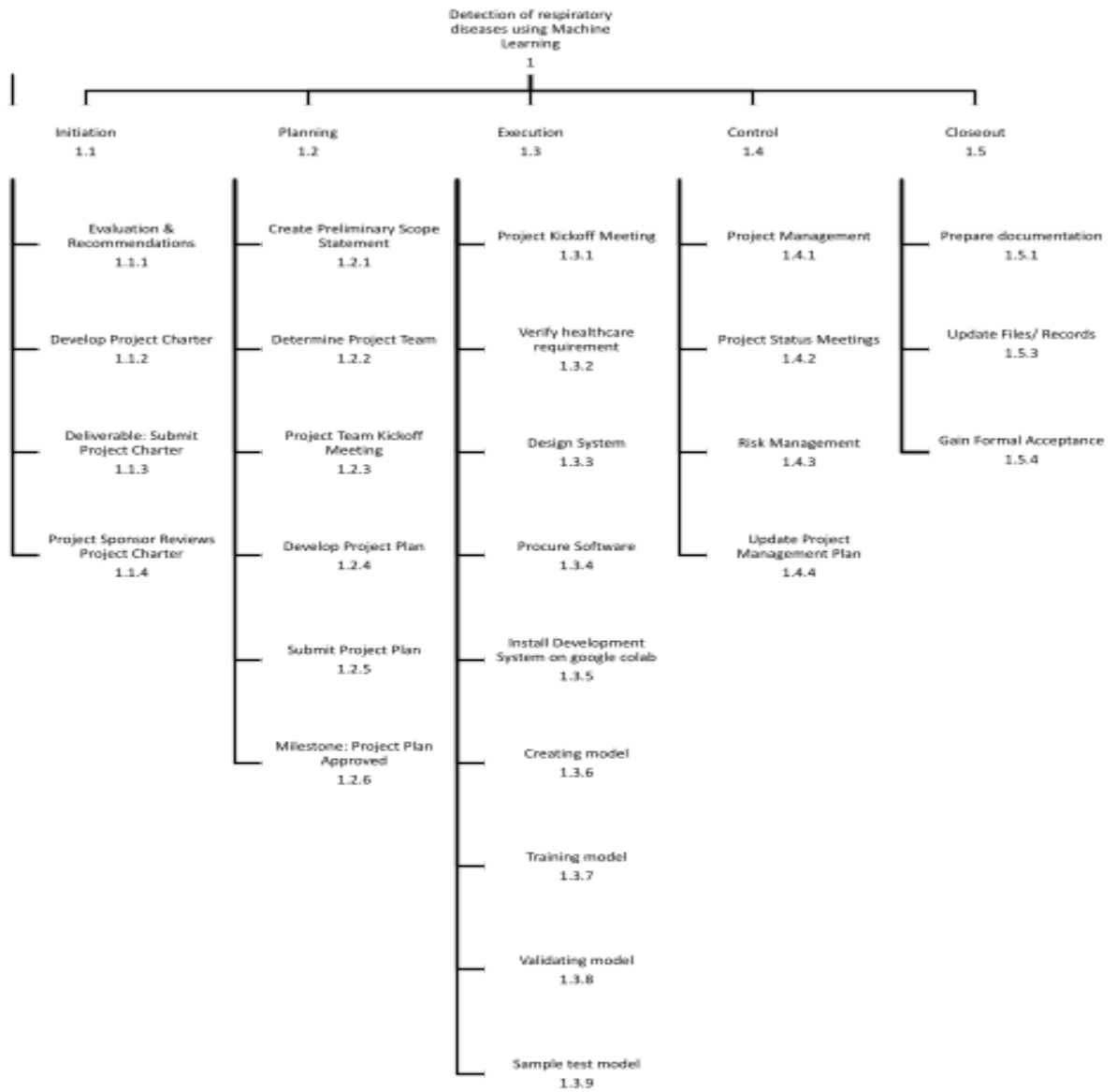
# **2 SCOPE MANAGEMENT**

## **2.1 REQUIREMENT ANALYSIS**

Due to pollution and many diseases related to respiration are coming into picture .

The healthcare service needed a model that could help to detect the disease related respiratory track and gave the required output quickly .

## 2.2 WORK BREAKDOWN STRUCTURE



## 2.3 MILESTONES

The table below lists the milestones for this project, along with their estimated completion timeframe.

Milestones	Estimated Completion Timeframe
Planning	PA+1 week
Started learning DL	PA+2 week
Collecting Dataset and started development	PA+ 3 weeks
70% model installed and trained	PA+4 weeks
100% software installed and users trained	PA+8 weeks

## REFERENCES

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
<i>Lightweight Skip Connections With Efficient Feature Stacking for Respiratory Sound Classification</i>	<i>Y. Choi, H. Choi, H. Lee, S. Lee, and H. Lee April, pp. 53027–53042, 2022</i>	<a href="https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9773104">https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9773104</a>
<i>Respiratory diseases recognition through respiratory sound with the help of deep neural network</i>	<i>V. Basu and S. Rana</i>	<a href="https://ieeexplore.ieee.org/document/9080747">https://ieeexplore.ieee.org/document/9080747</a>