Project Design Phase-I
Proposed Solution

Date	19 September 2022
Team ID	PNT2022TMID30275
Project Name	Project – Digital Naturalist – AI enabled tool for Biodiversity Researchers
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	**A naturalist** is someone who studies the patterns of nature, identifies a different kind of flora and fauna in nature. Being able to identify the **flora and fauna** around us often leads to an interest in protecting wild spaces, and collecting and sharing information about the **species** we see on our travels is very useful for conservation groups like **NCC**.
2.	Idea / Solution description	This problem can be solved using **Artificial Intelligence**. Artificial intelligence can be used to identify all the classes and species of animals and plants based on the **set of databases**. We use **deep learning approach** to train a long and heavy data that are useful for a naturalist to classify images based on the nature of species.
3.	Novelty / Uniqueness	The **uniqueness of our application** is that we use very deeply trained neural network named **Resnet50**. It is a powerful CNN model that can classify more than **20000 classes of images**. Its weights are predefined so we do not need to train the model which helps us to save computational cost. Based on the data availability, we further include more classes in training the model.
4.	Social Impact / Customer Satisfaction	It is a useful product for all the **research analyst, Ornithologist, Biologist** and **Marine drivers** who can instantly capture images of different species and are able to get all the relevant information about those breeds.
5.	Business Model (Revenue Model)	We can introduce **subscription-based** approach to earn a good revenue. The more number of features attracts the end users to use our application. It can generate up to an income of more than **10 million per year**.
6.	Scalability of the Solution	Our application can handle more than **1000 users** and load at a time, without compromising on performance and causing disruptions to user experience. We use **IBM Watson cloud server** to manage the loads and server requests.