Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	20 October 2022
Team ID	PNT2022TMID49029
Project Name	Project – Fertilizer recommendation system for disease prediction
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	NAME: Enter Name EMAIL: Enter Mail PASSWORD: Enter Password PHONE: Enter Phone number (Registration through form Registration through gmail Registration through linked IN)
FR-2	User Confirmation	Thank you for your email We have received a request from your mail. Please confirm to proceed further. If any queries please contact our help centre to help get you an instant answer to your question. (Confirmation via Email Confirmation via OTP)
FR-3	Product Features	It provides data of the fertilizer to full fill the user's demands. Reading soil and plants characteristics by sensors.
FR-4	Testing Features	This estimation of nutrient in soil is done using an NPK monitoring unit with Arduino UNO as the microcontroller to read the values from it. Convolutional Neural Networks (CNN) algorithms recommend appropriate fertilizers that can be used to prevent damage to plants from pathogenic viruses. The fertilizer data is collected from various markets about the brand name and NPK ratio of the fertilizer is collected.
FR-5	Objective	Smart farming and precession farming can be advanced by calculating NPK value for more accurate values.

		Analyzing the soil condition of any region and the requirements of the farmer to maximize the soil production.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	It is very easily usable for the customer. The customer gets a notification whenever the insufficient nutrient or disease is detected in the plant. Help the farmer to identify the disease.
NFR-2	**Security**	Security is very much concerned regarding the data collected and customer details. These securities are mainly related to the cloud services, they have strict security across the network. The proposed method combines the two major aspects in farming,pest identification and insecticides recommendation.
NFR-3	**Reliability**	The use of artificial intelligence gives appropriate result. The CNN algorithm model has 95% accuracy. The reliability is more for the customers. It is easy to use so that health issues can be avoided.
NFR-4	**Performance**	The app runs on a mobile device under various loads and circumstances. Precision fertilizer and precision crops is mostly used.
NFR-5	**Availability**	There is a high availability for user's access. Anyone can make use of it. Reduces the losses as ammonia,nitrate leaching, apply the right rate and accurately.
NFR-6	**Scalability**	It is an effective way to minimize the damages for a plant by early detection of disease and recommending suitable fertilizers. If the soilis not replenished with nutrients through fertilizer,crop yield will deteriote over time.