General Description: - This problem statement mainly aims at the soul of the Indian economy, our farmers. They are the ones who feed the huge population of India. Without them, no one would be getting food on their plate today. Although advancements are taking place every day and farmers are getting aware of the new technologies and they know what crops to grow and how to supply it to meet the demands of the rapidly growing population, still many are cut off from all these facilities. The motive of this task is to make the farmers aware of digital farming and make them aware about it and how is it better than traditional farming and using our website farmers can predict which crops they can sow on their land based on certain factors like their soil condition (pH of the soil, type of the soil etc.,), weather conditions to name a few. The prediction is based on the machine learning model which is trained with adequate amounts of statistical data so that the prediction is accurate and is ultimately helpful for the farmers to increase their income. Our website also predicts the revenue that can be generated by harvesting any crop and several other factors. In addition to this our website also helps them in choosing healthy pesticides, fertilizers etc., which helps farmers to maximize their productivity, quality and boost income.

Uniqueness: The uniqueness of this project is that the website will be in various languages so that it is accessible to all the farmers of various parts of the country. The user interface would be simple so that they can navigate through the website easily. Also, the website would be conveying different aspects of farming whether it is information related to seeds, soil, and other government schemes or subsidies provided by them. It would also be showing the weather conditions of various places and the current price of the crops, MSP, etc. It would also tell farmers about methods of organic farming and the benefits from that. There would also be a section related to the latest news regarding agricultural policies. We would be telling which crop to sow at the right time. How to prepare the soil and selection of pesticide, fertilizers and what is the right framing process and which market would be better for them for maximum revenue. There would also be a section for crop suggestions. There would be an estimated crop schedule of 12 months where farmers can see which crop they could grow throughout the year so that their land is never empty otherwise they would be facing the loss. If a farmer is unable to navigate through the website there would be a chatbot present to help them through the process and answer all their queries.

Business/Social Impact: In terms of future business perspective the proposed solution could be better than many ongoing businesses in this field as the website which will be deployed will be better as it will be providing much information all in one place and the user interface will be easy so that anyone could access it. Also, the share of agriculture in gross domestic product (GDP) has reached almost 20 per cent for the first time in the last 17 years, making it the sole bright spot in GDP performance during 2020-21, according to the Economic Survey 2020-2021.The resilience of the farming community in the face of adversities made agriculture the only sector to have clocked a positive growth of 3.4 per cent at constant prices in 2020-21, when other sectors slid. So, as we can predict from the data, in the upcoming years the agricultural sector is going to boom provided that farmers adopt new and healthy agriculture practices driven by technology and science. Our platform can act as one of the back-bone to increase the economy from agriculture as it has the capability to predict the best crops that can be sown by a farmer according to his soil conditions etc., which in turn increases farmer's profit. Once the trial of our website is over giving the proper results which we intended for, we advertise about our website in various kinds of media’s so that we can make sure that it reaches the farmers even those who reside in some remote village and can access it and make profit thereby. We are also planning to host our website with the help of any prominent cloud service providers. With minimal investment we can help crores of farmers. We could also earn through our website by sponsoring agricultural products and through advertising and by other means. Keeping aside the profit, the platform would help numerous farmers in their daily wages so that they could lead a better life.

Technology Stack: The flow of the proposed solution will be that we will be dividing the work among ourselves. One will be working on the User Interface (UI) or the Front-End of the website so that it'll be easy for everyone to navigate. For this purpose, we will be making use of HTML, CSS, Bootstrap and JavaScript. Simultaneously, for the backend we will use of Node.js/Django frameworks. Furthermore, coming to the machine learning model we will be making use of Technologies & Tools provided by IBM such as IBM Watson Desktop, IBM Cloud and IBM Auto AI. We will also be using the datasets that are provided to train and test the machine learning model. We will also refer to the references from various platforms like GitHub provided in the problem statement. One of the members would also be working on the chatbot which has to be added in the website for answering all the queries of farmers and help them navigate through the website. After the completion of these two domains (Front-End and the machine learning model) we will be integrating both of them. Once finished next we will concentrate on integrating and displaying the information about Government Schemes and Subsidies for farmers with the help of Application Program Interfaces (APIs). Overall we will work at providing a aesthetic website for farmers using which they can make use of to decide the right crop that can be sown on their land based on their soil conditions, climate etc., along with these they can also forecast their yield & revenue.

Scope: Once the website is deployed, we would be spreading the word about it and in the later stages we could advertise it so that it reaches the maximum number of people. The main aim of the website is to help the farmers in growing their business by growing the right crop at the right time and making them aware about government subsidies and policies. Also, how they can sell their crop for maximum revenue.And as this website can be accessed from anywhere in the world, even a farmer in some remote village can access it and make profit thereby. All their queries will be answered by the chatbot present in the website and platform would also tell the farmers the MSP and current price of crops.