

### 1. AIM:

To design a website “Agro Tech” related to farming, which is used to help farmers in various activities, provide resources and makes farming easier.

### 2. ABSTRACT:

As the title of the project itself implies that the website is developed for the farmers to add a bit of ease in their farming. Agriculture is regarded as one of the most important sector and lifeline for living beings. And it is the most difficult job anyone can do until the technology gets embedded in it. As it is well known that technology can make anything so easy just by one click. Similarly, this website can help farmers in booking appointments, renting machineries, online buying or selling of products, getting reminders for important dates, predicting the weather etc just by a click which actually requires a lot of human involvement and efforts. The main aim of this project is to create convenience to farmers and help farmers with increasing resource availability.

### 3. INTRODUCTION:

#### a. **SCOPE:**

Agro Tech is designed to provide one-stop solution to all farm related problems like:

- Soil testing
- Availability of farm equipments at cheaper rates.
- Online platform for selling and buying agri-products at reasonable prices.
- Locating nearby cold storages, showing the price updates.
- Comprehensive videos related to agricultural activities.
- Providing weather updates in their respective places.
- Showing schedule for seeds and fertilizers distribution.

#### b. **PURPOSE:**

In current scenario there are very few farmers benefited from the digital world due to lack of informative websites available for them to know about the revolutions happening with the technology. So AGRO TECH comes up with the idea of introducing the digital world to them from testing the soil to selling their products in one click to make their farming easier.

#### **Product Functions:**

**1) Appointment booking (for soil test):** One of the most important considerations in growing crops is the type of soil. So, it is necessary to test the soil and know the most suitable crops and fertilizers to be used. This functionality provides the online booking of appointments for soil testing in the laboratories.

**2) Renting machineries:** Generally small farmers cannot afford all the machineries that are useful in farming. So, they need to use the rented machines in which most of the time will be wasted in searching. This functionality provides the data regarding the rent time slots when the machines will be available so that farmers can easily block the time slots as per their requirement and can use those rented machines.

**3) Online trading:** This functionality is to help farmers to sell their products to consumers directly online without any market or mediators. On the other hand,

customers will benefit from the fresh and genuine products.

**4) Video streaming:** Videos are the most approached way of learning now-a-days. This can be applied to the field of agriculture as well. There were different and more healthy techniques which our ancestors followed in farming (can be referred as organic farming). It is very important for us to get that style of farming back as it is free of chemicals and a healthy way of farming. In today's farming almost every product can be traced with chemicals which is really not good for the health of people on both ends. This video streaming facility teaches the farmers about the techniques and how organic farming can be adopted in their farming.

**5) Locating nearby cold storages:** Storing the products is really a challenging task for the farmers. This functionality makes the process a bit handy by showing the cold storages nearby.

**6) Schedule for seeds and fertilizers distribution:** Usually farmers may forget or miss the dates of distribution of seeds by government. This functionality provides a schedule letting them know about the distribution of seeds and fertilizers.

**7) Weather forecast:** Weather plays a vital role in deciding the future of crops. So it is good to have the knowledge regarding the weather and the immediate actions that can be taken in any adverse weather conditions. This functionality helps the farmers to have prior knowledge regarding the weather so that they can act accordingly.

**9) Price update of agriproducts:** The prices of agriproducts will be changing on a daily basis so it is important to get the updates regarding the price which helps them to plan their purchase accordingly. This functionality helps the people in getting the price updates in an effortless way.

**c. TECHNOLOGIES TO BE USED:**

- Describing the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components.
- Identifying the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.
- Requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms.
- Defining any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.

#### **4. OVERVIEW:**

##### **a. Process model selection and justification with 150 words:**

#### **PROCESS MODEL: Iterative waterfall model**

##### **Iterative waterfall**

- Iterative Waterfall Model is the extension of the Waterfall model.
- This model is almost same as the waterfall model except some modifications are made to improve the performance of the software development.
- The iterative waterfall model provides customer's feedback paths from each phase to its previous phases.
- There is no feedback path provided for feasibility study phase, so if any change is required in that phase then iterative model doesn't have scope for modification or making corrections.
- Iterative waterfall allows to go back on the previous phase and change the requirements and some modification can be done if necessary.
- This model reduces the developer's effort and time required to detect and correct the errors.
- In iterative waterfall model, next phase can only begin when the previous phase is completed as waterfall model.

##### **Why iterative waterfall model?**

- Agro Tech is a website for farmers to help them to make farming easy. Most of the features are static and few are like using API for making it dynamic. We have a clear idea of requirement and tech stack that will help in implementation so we chose iterative waterfall model.

#### **B. REQUIREMENT GATHERING:**

##### **i. Functional Requirements:**

##### **For Appointment booking (for soil testing):**

**REQ-1:** Collecting user's data using form. (User's details like name, email-id, phone number and their desired date for appointment.)

**REQ-2:** Listing the appointments booked on particular date for soil testing agencies (Date).

##### **For Renting machineries:**

This functionality enables the farmers to get machineries for rent by booking the machineries online.

**REQ-1:** Collecting the data of machineries from farmers (Machinery details such as type, name, available dates, rent per day).

Collected data from the machine's owner will be stored in the database.

**REQ-2:** Booking dates to get the machineries for rent

Selecting the required machine from the displayed list.

### **For Online Trading:**

This functionality enables the farmers to sell their agri-products online at desired price and enables consumers to buy the agri-products online at reasonable rates.

**REQ-1:** Farmers adding their products to the website. Farmers enter their product details in the website.

Details of products will be stored in the database.

**REQ-2:** Displaying the products. User navigate to the online trading page by clicking on corresponding icon.

**REQ-3:** Ordering the products. User enters his/her phone number, address and clicks order(button).

**REQ-4:** Tracking the product. Clicking on track the product. Shows the stage of delivery through which the product is undergoing presently.

### **Locating nearby cold storages:**

This functionality enables the farmers to locate the nearby cold storages by accessing farmer's location.

**REQ-1:** Accessing user's location.

Clicking on button to allow the google map API to access the user's location (latitude and longitude)

Google uses the user's location details to get the latitude and longitude information.

**REQ-2:** Showing nearby cold storages.

Clicking on show nearby cold storages. Cold storages that are around the farmer's location will be displayed by the google API.

**REQ-3:** Showing the distance between farmer's location and selected cold storage  
Selecting a cold storage from the displayed list of cold storages.

### **Schedule for seeds and fertilizers distribution:**

This functionality enables the farmers to know the dates when the seeds and fertilizers will be distributed.

**REQ-1:** Displaying the list of seeds and date of distribution.

Clicking on the button (Schedule for seeds and fertilizer distribution). Retrieving information from government API and databases.

**REQ-2:** Email alerts for live distributions.

Fill the form with details like name and email id.