Project Proposal Form

Final Year Projects (FYP) 2022-23

**Project Title:** Artificial Intelligence Based And Controlled Smart Agricultural Farm

**Field:** Image Processing, A.I, E.S, DLD, DBMS and Web Based Applications.

**Supervisor:**  Dr. Zulqarnain Siddiqui

**Group Members:**

**1)** HUSSAIN SALEEM (13079)

2) MUHAMMAD HAMZA SIDDIQUI (12626)

3) SYED TAHIR ABBAS (12868)

4) MUHAMMAD OSAMA (13088)

* 1. **PROBLEM STATEMENT**

To provide efficient decision making through a web based server using wireless sensors which handle different activities of farm and provides useful information associated with Farm, Soil, Moisture, Temperature and Humidity. There are times when the crops are effected due to atmospheric condition as well as the rising of water level, this increases the chances of Farmers neglecting some crops intentionally or unintentionally which isn't good for Agriculture, but this app can help them in those times by working automatically and it can also be used manually by Farmers. Performing agriculture is incredibly much time consuming, by using this app we can save resources and time. It can come as costly for the farmers but in the long run it can save their money and give them more profit. This app overcomes the need of manual operations required to observe and maintain the agricultural farms.

* 1. **PROJECT SCOPE**

As all of us know that the agriculture is one the most important industry of Pakistan which gives us many benefits and is linked to our country's economy, despite all of that the situation of our farmers is very poor. They don't even have the necessary tools or knowledge to use those tools and they have to work tirelessly to do their work that's why we are making an application that can automate the process of farming by using image recognition through an AI which can save our farmers time and extra effort that they have to put and make the chances of growing good crops higher and the percentage of crops Getting bad lower. The idea of our project is that we can check how or when our crops needs water or supplements that it needs on time, this can be figured out by using datasets Air Humidity, Air Temperature, Soil Moisture, Soil pH and Soil Salinity, by using these datasets we can check if there is any disease, pesticides, humidity, temperature of the crops, moisture level of soil, availability of nutrients in soil, toxicities in the soil.

* 1. **FEATURES**

1. It performs Automatic operation of Farming products like windmill, water fall etc.
2. With the help of image recognition it can detect Diseases in farming products like plants, vegetables and fruits.
3. We can get a complete Information of Bugs and Diseases in our online servers.
4. It display all information on web pages related to the Field
5. Smart agriculture is an emerging concept, because IOT sensors are capable of providing information about agriculture fields and so touch supported the user input.
6. Smart farming refers to the use of technology and data analysis to optimize and improve agricultural practices. Some examples of smart farming technologies include precision agriculture, which uses sensors and GPS to collect data on soil conditions, crop health, and weather patterns, and then uses that data to optimize irrigation, fertilization, and pest control; and precision livestock farming, which uses sensors and other technologies to monitor.
7. One way that image processing could be used in a smart farming project is for disease detection in crops or livestock. By analyzing images of crops or animals, it may be possible to identify signs of disease or stress, such as changes in color, texture, or shape. This information could be used to take early action to prevent the spread of Disease or to treat affected plants or animals. There are many other ways that image processing could be used in a smart farming project. For example, it could be used to monitor the growth and development of crops, to identify weeds or pests, or to assess the quality of produce. It could also be used in conjunction with other technologies, such as sensors or drones, to provide a more comprehensive view of the farm and its operations.
   1. **TECHNOLOGY:**
      1. **Software Detail:**
8. **Visual Studio Code**

VS Code could potentially be used to write and test code for various aspects of the A.I based farming system, such as the database, sensors, and AI algorithms.

1. **PHP my Admin**

PHP Admin could potentially be used to manage the database that stores the data from the sensors and the results of the AI algorithms.

1. **Tensor Flow**

Tensor Flow could potentially be used in the context of AI-based farming to build and train machine learning models that can detect diseases in plants.

* + 1. **Programming Languages:**   
       1. **JavaScript**

JavaScript could potentially be used to build the front-end of the web-based application or website that is used to access and interact with the farming system.

* + - 1. **PHP**

In the context of AI-based farming, PHP could potentially be used to build the website or web-based application that is used to access and interact with the farming system.

* + - 1. **PYTHON**

Python could potentially be used for a variety of tasks related to the development and operation of the farming system.

* + - 1. **OPEN CV**

Open CV is a powerful tool for image processing and analysis that could be used to improve the accuracy and efficiency of AI-based farming systems by detecting diseases in plants.

* + 1. **Designing languages:**

These technologies could potentially be used to build the front-end of the web-based application or website that is used to access and interact with the farming system. Overall, HTML, CSS, and Bootstrap are important technologies that could be used to build the front-end of an AI-based farming system, allowing users to easily access and interact with the system through a web browser