

# SYNERGY

Farmer's Database

Team members:

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## **PROBLEM STATEMENT :**

The primary goal of this project is to create a centralized and robust database management system to support and enhance the agricultural sector in India. The system will serve as a valuable resource for both government agencies and farmers, enabling efficient and data-driven decision-making. It aims to facilitate the management of various aspects of agriculture, from seed distribution and crop information to expert guidance and resource allocation.

## **Components of the Database:**

### **Farmers Information:**

- Store detailed information about individual farmers, including their personal details, contact information, land holdings, and farming practices.
- Track the history of crops grown, yields, and past agricultural interventions for each farmer.

### **Agro-Stores Data :**

- Maintain records of agro-stores across the country, including their location, contact details, and inventory.
- Monitor the availability of agricultural supplies, seeds, fertilizers, pesticides at these stores.

### **Inventory Management:**

- Keep track of agricultural inventory in agro-stores to ensure adequate supply of seeds, fertilizers, pesticides, and livestock resources.

### **Seeds & Crops Information:**

- Record data on various crop types, planting and harvest seasons, recommended practices, and expert advice.
- Offer farmers information on suitable crops for their regions and the best practices for crop management.

#### Expert Database:

- Create a database of agricultural experts, including their areas of specialization, contact information.
- Allow farmers to connect with experts for guidance and advice on crop management, livestock care, and agricultural best practices.

#### Data Accessibility :

- Government agencies, including agricultural departments will have access to the system to plan and execute agricultural initiatives, vaccination campaigns, and resource allocation.
- farmers can access the system through user-friendly interfaces or mobile apps to receive information about best practices, expert advice, and access to necessary resources.

## **Assumptions:**

- A farmer can grow more than one crop in his field with 1:N relationship between the two entities.
- A crop can be grown with many fertilisers , pesticides, seeds, which belong to the particular crop and of different companies there is 1:N relationship between the entities.
- A agro-store sells many types of fertiliser, seeds, pesticides (M:N) there many to many relationship between these two entities.
- A farmer asks many queries there is one is to many (1:N) relationship between these two entities.
- Any Expert can answer any query it is many to many (M:N) relationship between these two entities.
- A farmer can post many blogs it is one is to many (1:N) relationship between these two entities.

## FUNCTIONAL DEPENDENCIES :-

- Location 3<sup>rd</sup> Normal Form  
    {Pincode} -> {City}  
    {City} -> {State}
- Agro\_center 3<sup>rd</sup> Normal Form:  
    {Center\_id}-> {City}  
    {City}->{Pincode}
- Fertilisers 2<sup>nd</sup> Normal Form:  
    {Fertiliser\_id} -> {Price}  
    {Fertiliser\_name,company}-> {Price}
- Pesticides 2<sup>nd</sup> Normal Form:  
    {Pesticide\_id} -> {Price}  
    {Pesticide\_name,company}-> {Price}
- Seeds 2<sup>nd</sup> Normal Form:  
    {Pesticide\_id} -> {Price}  
    {Pesticide\_name,company}-> {Price}
- Farmer 2<sup>nd</sup> Normal form:  
    {Aadhar\_number}->{name,location,phone\_number}  
    {phone\_number} ->{name,location}