# Agronomic data Program

The following system allows users to properly manage their agronomic data and get an accurate picture of the areas they can change to improve their yield. The system uses SQL database and Python’s GUI interface.

The program allows users to do 4 basic tasks:

1. CREATE, UPDATE and DELETE Fields
2. CREATE, UPDATE and DELETE Field Operations
3. Assign FIELD OPERATIONS to a Field
4. See what FIELD OPERATIONS have been assigned to a particular Field

The MENU tab is the first page of the site. It has 3 buttons:

1. FIELD – allows the user to CREATE, UPDATE, and DELETE Fields
2. FIELD OPERATIONS – allows the user to CREATE, UPDATE, and DELETE Field Operations and assign operations to a field
3. SPECTATE OPERATIONS – allows the user to view each created field along with the operations assigned to them

On clicking the FIELD button, a new page is loaded which has 3 buttons:

1. CREATE Field – allows the user to create a new field and set a name and dimensions to it (which is automatically added to the field database)

* When clicked, the user is prompted to type out a new field name along with its dimensions

1. UPDATE Field – allows the user to set a new name and dimensions to a field (which updates the cells in the database)

* When clicked, the user is prompted to enter the current name of the field, the new name of the field, and the new dimensions of the field

1. DELETE Field – allows the user to delete a field name (which deletes its row in the database)

* When clicked, the user is prompted to enter the name of the field they wish to delete

On clicking the FIELD OPERATIONS button, a new page is loaded which has 3 buttons:

1. CREATE Field Operation – allows the user to create a new field operation (which is automatically added to the field database)

* When clicked, a new page is loaded which gives the user 4 options:
* Seeding
* Corn
* Soybean
* Potato
* Cotton
* Rice
* Spraying
* Water
* Pesticide
* Tilling (yes/no)
* Harvest (yes/no)

1. UPDATE Field Operation – allows change a previously created field operation (which updates its cell in the data base)

* When clicked, the user is asked to select a field name, a field operation, and a new field operation

1. DELETE Field Operation – allows the user to delete a field operation (which deletes its cell in the database)

* When clicked, the user is asked to select a field name and a field operation to delete

On clicking the SPECTATE OPERATIONS button, a database of all the field names, associated dimensions, and field operations is displayed to the user. A sample database has been displayed below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Field Name** | **Dimensions (yds)** | **Seed Type** | **Spraying** | **Tillage** | **Harvest** |
| Sample1 | 48X231 | Cotton | No | Yes | No |
| Sample2 | 921X78 | Corn | No | No | Yes |

**NOTE:** Before running the program, please type in the following lines of code in the Python terminal:

pip install opencv-python  
pip install mysql-connector-python

pip install Pillow