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dATAbASE

Group 15

# Introduction

# Database description

# Functionality of database

The database will handle all data received by the drone and will be inputted by an operator or AI (but AI will be a future implementation of the program) into the database. The database will include sections for each of the farm's fields as well as the farm's animals. Before the Database can function properly, the management must first enter the main data into the system. The functionality will be altered based on the needs of the users, such as whether the farm is based on crop yield or livestock and poultry, and so on.

# The use of the Database

The database will be used to track agricultural yields and animal and poultry placements. What regions of the fields are influenced by what, what parts of the agricultural field require fertilizer, water, crop dusting, and so on. The primary purpose of this database is to keep track of everything on the farm and where assistance is required.

# Database File creation

--Creation of Database

--Batch START

CREATE DATABASE TelloDrone\_DB

ON PRIMARY

(

NAME = TelloDrone\_Data1,

FILENAME = 'C:\test1\PrimaryDBfile.mdf',

SIZE = 2MB,

MAXSIZE = UNLIMITED,

FILEGROWTH = 4%

),

FILEGROUP SECONDARY

(

NAME = TelloDrone\_Data2Secondary,

FILENAME = 'C:\test1\SecondaryDBfile.ndf',

SIZE = 10MB,

MAXSIZE = UNLIMITED,

FILEGROWTH = 2%

)

LOG ON

(

NAME = TelloLog,

FILENAME = 'C:\test\LogDBfile.ldf',

SIZE = 2MB,

MAXSIZE = UNLIMITED,

FILEGROWTH = 1%

)

USE TelloDrone\_DB

GO

--Creation of Tables

--Crops

CREATE TABLE Crops

(

CropID INT PRIMARY KEY IDENTITY (1, 1),

Wheat VARCHAR(25),

Corn VARCHAR(25),

Grapes VARCHAR(25),

Potatos VARCHAR(25),

Cotton VARCHAR(25),

SoyBean VARCHAR(25),

Apples VARCHAR(25),

--Better

Citrus VARCHAR(25),

Fruit VARCHAR(25),

Veg VARCHAR(25)

)

--LiveStock

CREATE TABLE LiveStock

(

LiveStockID INT PRIMARY KEY IDENTITY (1, 1),

Pig VARCHAR(25),

Cow VARCHAR(25),

Sheep VARCHAR(25),

Chicken VARCHAR(25)

)

--FieldProblems

CREATE TABLE FieldProblems

(

FieldProblemsID INT PRIMARY KEY IDENTITY (1, 1),

Error1 VARCHAR(35),

Error2 VARCHAR(35),

Error3 VARCHAR(35)

)

--Identifications

CREATE TABLE Identifications

(

IdentificationsID INT PRIMARY KEY IDENTITY (1, 1),

Crop VARCHAR(25),

Soil VARCHAR(25),

Insects VARCHAR(25),

Erosion VARCHAR(25),

WaterSaturation VARCHAR(25),

WaterSource VARCHAR(25),

FieldProblemsID INT FOREIGN KEY REFERENCES FieldProblems(FieldProblemsID),

)

--FieldInfo

CREATE TABLE FieldInfo

(

--This will be the main table that will be populated through the use of the program and displayed to the GUI

FieldInfoID INT PRIMARY KEY IDENTITY (1, 1),

Information VARCHAR(25),

CropID INT FOREIGN KEY REFERENCES Crops(CropID),

LiveStockID INT FOREIGN KEY REFERENCES LiveStock(LiveStockID),

FieldProblemsID INT FOREIGN KEY REFERENCES FieldProblems(FieldProblemsID),

GroundType VARCHAR(25)

)

--Drone

CREATE TABLE Drone

(

DroneID INT PRIMARY KEY IDENTITY (1, 1),

DroneName VARCHAR(25),

DroneType VARCHAR(25),

DroneStatus VARCHAR(25),

DroneLocation VARCHAR(25),

Manufacturer VARCHAR(25),

FieldInfoID INT FOREIGN KEY REFERENCES FieldInfo(FieldInfoID)

)

--FieldCrop

CREATE TABLE FieldCrop

(

FieldInfoID INT FOREIGN KEY REFERENCES FieldInfo(FieldInfoID),

CropID INT FOREIGN KEY REFERENCES Crops(CropID)

)

--FieldLiveStock

CREATE TABLE FieldLiveStock

(

FieldInfoID INT FOREIGN KEY REFERENCES FieldInfo(FieldInfoID),

LiveStockID INT FOREIGN KEY REFERENCES LiveStock(LiveStockID),

)

--Batch END

--Creation of Queries and Views

--Selecting all data in Drone table ;)

SELECT \* FROM Drone

--Stored procedure

USE TelloDrone\_DB

GO

CREATE VIEW vDroneLocation AS

SELECT

Drone.DroneID,

Drone.DroneLocation

FROM Drone