Project 381 Tian Hanekom Database Documentation

Table of Contents

[Database Creation Query 3](#_Toc41425489)

[Database Retrieving Data Stored Procedure Query 4](#_Toc41425490)

# Database Creation Query

All ID variables are unique and auto generated in order to avoid any complications and reduce redundancy as efficiently as possible.

User Table:

Created user table for storing personal information of our clients and the people who make use of our systems in order to bill clients and be able to contact our clients when needed.

Farm Table:

Stores basic variables about a farm like name and location. Farm locations can be very complex at times which is why I allowed for a hundred characters to be able to store as many locations details as possible. Because the farm location contains so much data, I created a farm location alias variable in order to easily reference the farm’s location.

Plots Table:

Only contains performance review and whether or not the user has overridden our own settings, if so the name of the user’s override files will be stored in this variable for reference purposes.

Farm and plant ID’s are referenced in the plots table since a plot will only ever contain one plant and belong to a single farm.

Plants Table:

Contains 4 sets of variables namely:

Basic variables: that consists of the plant id, name and references the category id which indicates to which category the plant belongs to.

Ambient variables: Contains all the variables concerning the surroundings of our plants needed to obtain optimal results. All variables are measured in decimal for accuracy except for light since it’s measurement is more complex.

Internal variables: Contains all the variables concerning the plants themselves needed to obtain optimal results. All variables are measured in decimal for accuracy except for light since it’s measurement is more complex.

Nutrients variables: Contains all the variables concerning the nutrients of the plants needed to obtain optimal results. All variables are measured in decimal for accuracy.

Plant Category Table:

Only contains ID for referencing, name and description.

# Database Retrieving Data Stored Procedure Query

Procedures for Plant Table:

Contains two sets of procedures. Ones set is for grouping plants by referring to a single variable which then returns the ID of the plant where the given variable matches the appropriate stored variable. Since the plant table contains 4 sets of variables, where each set contains at least 3 variables, I also included three procedures that asks for three variables instead of just one in order to return the plant ID in case we want do more precise searches. The second set of procedures returns a variable belonging to a plant when given a plant’s ID. This set of procedures also contains a procedure that returns all data belonging to a plant given the plant ID for displaying purposes.

This way all of the variables stored in the plant table can be accessed as long as you have a plant’s id or a single variable belonging to a plant.

Procedures for Plot Table:

Contains two sets of procedures. Ones set is for grouping plots by referring to a single variable which then returns the ID of the plot where the given variable matches the appropriate stored variable. The second set of procedures returns a variable belonging to a plot when given a plot’s ID. This set of procedures also contains a procedure that returns all data belonging to a plant given the plot ID for displaying purposes.

This way all of the variables stored in the plot table can be accessed as long as you have a plot’s id or a single variable belonging to a plot.

Procedures for Farm Table:

Contains two sets of procedures. Ones set is for grouping farms by referring to a single variable which then returns the ID of the farm where the given variable matches the appropriate stored variable. The second set of procedures returns a variable belonging to a farm when given a farm’s ID. This set of procedures also contains a procedure that returns all data belonging to a farm given the farm ID for displaying purposes.

This way all of the variables stored in the farm table can be accessed as long as you have a farm’s id or a single variable belonging to a farm.

Procedures for User Table:

All procedures regarding the user table retrieves all of the data for an entry in the user table. Each procedure asks for a different variable in the user tables and retrieves all of the data where the given variable matches a stored variable in an entry.

This way it is required to have at least a single variable belonging to a user in order to access all of the stored data regarding the user.

Procedures for Plant Category Table:

All procedures regarding the Plant Category table retrieves all of the data for an entry in the Plant Category table. Each procedure asks for a different variable in the Plant Category tables and retrieves all of the data where the given variable matches a stored variable in an entry.

This way it is required to have at least a single variable belonging to a Plant Category in order to access all of the stored data regarding the Plant Category.