**DBMS MINI PROJECT**

**BOTANICAL GARDEN DATABASE**

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**Section: D**

# Short Description and Scope of the Project

This project deals with the ‘Botanical Garden Database’. This system will be used by a botanical garden to store their plants’ scientific names, local names, family, Suppliers supplying the required tools, manure and organize them into a systematic database.

The main aim of this project is to computerize the maintenance of a botanical garden and to reduce paperwork.

Using the database one can view the different plants in the botanical garden, where they are cultivated, who the suppliers are and what they supply the required items on specific dates.

**ER Diagram**

Diagram

Description automatically generated

**Relational Schema**

**A picture containing timeline

Description automatically generated**

# DDL statements - Building the database

create table garden(garden\_id integer not null,garden\_name varchar(30),garden\_loc varchar(30),date\_of\_establishment datetime,primary key(garden\_id));

describe garden;

create table horticultural\_data(local\_name varchar(30),scientific\_name varchar(30),species varchar(30),genus varchar(30),family varchar(30),propagation varchar(30),primary key(scientific\_name));

create table plant(plant\_id varchar(30),scientific\_name varchar(30),local\_name varchar(30), primary key(plant\_id),foreign key(scientific\_name) references horticultural\_data(scientific\_name))

create table vouchers(voucher\_id varchar(30),scientific\_name varchar(30),collector\_name varchar(30),habitat\_site varchar(30),location varchar(30),primary key(voucher\_id), foreign key(voucher\_id) references plant(plant\_id));

create table cultivated\_in(plant\_id varchar(30),garden\_id integer,primary key(plant\_id,garden\_id),foreign key(plant\_id) references plant(plant\_id),foreign key(garden\_id) references garden(garden\_id));

create table plant\_update(status\_date datetime,status varchar(40),plant\_id varchar(30),primary key(plant\_id),foreign key(plant\_id) references plant(plant\_id));

create table supplier(supplier\_id varchar(30),supplier\_name varchar(30),primary key(supplier\_id));

create table supplied\_to(supplier\_id varchar(30),garden\_id integer,supply\_date datetime,product varchar(30),primary key(supplier\_id,garden\_id),foreign key(supplier\_id) references supplier(supplier\_id),foreign key(garden\_id) references garden(garden\_id));

create table employee(E\_name varchar(30),E\_id varchar(30),designation varchar(30),garden\_id integer,primary key(E\_id),foreign key(garden\_id) references garden(garden\_id));

create table parent\_plant(plant\_id varchar(30),parent\_plant\_id varchar(30),primary key(plant\_id,parent\_plant\_id),foreign key(plant\_id) references plant(plant\_id),foreign key(parent\_plant\_id) references plant(plant\_id));

show tables;

# Populating the Database

INSERT INTO `cultivated\_in` (`plant\_id`, `garden\_id`) VALUES

('apple1', 1),

('apple2', 2),

('apple3', 3),

('apple4', 4),

('apple5', 5),

('apple6', 5),

('bishopcapcactus1', 1),

('bishopcapcactus2', 3),

('bishopcapcactus3', 5),

('christmascactus1', 2),

INSERT INTO `employee` (`E\_name`, `E\_id`, `designation`, `garden\_id`) VALUES

('James', '63679', 'Gardner', 1),

('John', '64989', 'Gardner', 1),

('Luke', '65271', 'Gardner', 1),

('Jack', '65646', 'Gardner', 1),

('Charles', '66564', 'Gardner', 2),

INSERT INTO `garden` (`garden\_id`, `garden\_name`, `garden\_loc`, `date\_of\_establishment`) VALUES

(1, 'BlrBG', 'Bangalore', '1970-11-10 00:00:00'),

(2, 'MdyBG', 'Mandya', '1971-11-10 00:00:00'),

(3, 'MysBG', 'Mysore', '1972-11-10 00:00:00'),

(4, 'UdpBG', 'Udupi', '1973-11-10 00:00:00'),

(5, 'MangBG', 'Mangalore', '1974-11-10 00:00:00');

INSERT INTO `horticultural\_data` (`local\_name`, `scientific\_name`, `species`, `genus`, `family`, `propagation`) VALUES

('fairy castle cactus', 'acanthocereus tetragonus', 'cactus\_spec2', 'cactus\_gen', 'cactus\_fam', 'leaf'),

('star cactus', 'astrophytum asterias', 'cactus\_spec8', 'cactus\_gen', 'cactus\_fam', 'leaf'),

('bishop cap cactus', 'astrophytum myriostigma', 'cactus\_spec6', 'cactus\_gen', 'cactus\_fam', 'leaf'),

('spider plant', 'chlorophytum comosum', 'rose\_spec', 'rose\_gen', 'rose\_fam', 'spiderettes'),

INSERT INTO `parent\_plant` (`plant\_id`, `parent\_plant\_id`) VALUES

('apple2', 'apple1'),

('apple3', 'apple2'),

('apple5', 'apple4'),

('apple6', 'apple4'),

('apple6', 'apple5'),

('waterlily2', 'waterlily1'),

('waterlily3', 'waterlily1');

INSERT INTO `supplied\_to` (`supplier\_id`, `garden\_id`, `supply\_date`, `product`) VALUES

('23240', 1, '2022-10-18 23:27:51', 'manure'),

('23240', 2, '2022-09-22 08:43:26', 'manure'),

INSERT INTO `supplier` (`supplier\_id`, `supplier\_name`) VALUES

('23240', 'Supply Depot(m)'),

('23241', 'Crown Distributing(t)'),

('23242', 'RiseUp Distributors(f)'),

('23243', 'Total Retail Supply(sb)');

# Join Queries

# Aggregate Functions

1.

SELECT COUNT(plant\_id), local\_name FROM plant GROUP BY local\_name

Graphical user interface, text, application, email

Description automatically generated

Shows the total number of plant ids under each local name.

2.

SELECT COUNT(propagation) AS propagation\_leaf FROM horticultural\_data WHERE propagation="leaf";

Graphical user interface, text

Description automatically generated

Shows the total number of propagations which come under the leaf category.

3.

SELECT COUNT(plant\_id), garden\_id FROM cultivated\_in GROUP BY garden\_id;

Graphical user interface, text, application, email

Description automatically generated

Shows the total number of plant ids in each garden.

# Set Operations

# FUNCTION AND PROCEDURE

# TRIGGERS

# Developing a Frontend

**Read:**

**Create:**

**Update:**

**Delete:**