



APPLE TREE SUPPLIER



Referral Assignment 2

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Relational Schema:

Customer (Customer_ID, Family_Name, Given_Name, Address, Town, Phone_No, Register_Date)

Order_Form (Order_ID, Customer_ID*, Order_Date)

Order_Item (Tree_ID*, Order_ID*)

Tree (ID, RootType*, Variety*, Age, Pot_size, Price, Available_On)

Rootstock (RootstockType, Tree_Size, Discription)

Variety (Name, Pollination_Group, Fruiting_Season, Cooking, Eating, Fruit_Size, Fruit_Color, Yield)

Create Table Commands:

```
CREATE TABLE Customer(
Customer_ID VARCHAR2(10),
Family_Name VARCHAR2(20) NOT NULL,
Given_Name VARCHAR2(20) NOT NULL,
Address VARCHAR2(150),
Town VARCHAR2(50),
Phone_No VARCHAR2(20) CONSTRAINT Check_Amount_Of_Phone_No_Char
CHECK(Phone_No >= 7 AND Phone_No < 20),
Register_Date DATE NOT NULL,
CONSTRAINT PK_Customer_CID PRIMARY KEY(Customer_ID)
);
```

```
CREATE TABLE Rootstock(
RootstockType VARCHAR2(10),
Tree_Size VARCHAR2(10) NOT NULL,
Discription VARCHAR2(100) NOT NULL,
CONSTRAINT PK_Rootstock_RType PRIMARY KEY(RootstockType)
);
```

```

CREATE TABLE Variety(
Name VARCHAR2(10),
Pollination_Group NUMBER(1) CONSTRAINT Check_Pol_Grp_In_1_Early_To_8_Late
CHECK(Pollination_Group IN ('1','2','3','4','5','6','7','8')) NOT NULL,

Fruiting_Season VARCHAR2(7) CONSTRAINT Check_Fruiting_Season CHECK(Fruiting_Season
IN ('Early','Mid','Late')) NOT NULL,

Cooking VARCHAR2(1) CONSTRAINT Check_Suitablity CHECK(Cooking IN ('Y','N')) NOT NULL,

Eating VARCHAR2(1) CONSTRAINT Check_Suitable CHECK(Eating IN ('Y','N')) NOT NULL,

Fruit_size VARCHAR2(8) CONSTRAINT Check_Fruit_Size CHECK(Fruit_Size IN
('Large','Medium','Small')) NOT NULL,

Fruit_color VARCHAR2(10) NOT NULL,

Yield VARCHAR2(9) CONSTRAINT Check_Yield_Amount CHECK(Yield IN
('Heavy','Average','Light')) NOT NULL,

CONSTRAINT PK_Variety_Name PRIMARY KEY(Name)
);

```

```

CREATE TABLE Tree(
ID VARCHAR2(10),
Roottype VARCHAR2(10) NOT NULL
REFERENCES Rootstock(RootstockType),
Variety VARCHAR2(10) NOT NULL
REFERENCES Variety(Name),
Age NUMBER(3),
Pot_size VARCHAR2(8),
Price DECIMAL(4,2) CONSTRAINT Check_Price_Greater_than_Zero CHECK(Price > 0) NOT
NULL,
Available_On DATE NOT NULL,
CONSTRAINT PK_Tree_ID PRIMARY KEY(ID)
);

```

```

CREATE TABLE Order_Form(
Order_ID VARCHAR2(10),
Customer_ID VARCHAR2(10) NOT NULL,
Order_Date DATE NOT NULL,
CONSTRAINT PK_Order_Form_OID PRIMARY KEY(Order_ID),
CONSTRAINT FK_Order_Form_CID FOREIGN KEY(Customer_ID) REFERENCES
Customer(Customer_ID)
);

```

```

CREATE TABLE Order_Item(
Tree_ID VARCHAR2(10) NOT NULL,
Order_ID VARCHAR2(10) NOT NULL,
CONSTRAINT FK_Order_Item_TID FOREIGN KEY(Tree_ID) REFERENCES Tree(ID),
CONSTRAINT FK_Order_Item_OID FOREIGN KEY(Order_ID) REFERENCES
Order_Form(Order_ID),
CONSTRAINT PK_Order_Item_TID PRIMARY KEY(Tree_ID)
);

```

Customer and Rootstock Table Command:

The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows an 'Oracle Connection' with a tree view containing tables like BUILDING, CUSTOMER, DEPARTMENT, EMPLOYEE, FLOORSPEACE, JOB, ROOTSTOCK, and VARIETY. The main window displays the 'SQL Worksheet' with the following SQL commands:

```

CREATE TABLE Customer(
Customer_ID VARCHAR2(10),
Family_Name VARCHAR2(20) NOT NULL,
Given_Name VARCHAR2(20) NOT NULL,
Address VARCHAR2(150),
Town VARCHAR2(50),
Phone_No VARCHAR2(20) CONSTRAINT Check_Amount_Of_Phone_No_Char CHECK(Phone_No >= 7 AND Phone_No < 20),
Register_Date DATE NOT NULL,
CONSTRAINT PK_Customer_CID PRIMARY KEY(Customer_ID)
);

CREATE TABLE Rootstock(
RootstockType VARCHAR2(10),
Tree_Size VARCHAR2(10) NOT NULL,
Discription VARCHAR2(100) NOT NULL,
CONSTRAINT PK_Rootstock_RType PRIMARY KEY(RootstockType)
);

```

The 'Script Output' pane at the bottom shows the execution results:

```

Table CUSTOMER created.

Table ROOTSTOCK created.

```

Variety Table Command:

The screenshot shows the Oracle SQL Developer interface. The main window displays the 'SQL Worksheet' with the following SQL command:

```

CREATE TABLE Variety(
Name VARCHAR2(10),
Pollination_Group NUMBER(1) CONSTRAINT Check_Pol_Grp_In_1_Early_To_8_Late CHECK(Pollination_Group IN ('1','2','3','4','5','6','7','8')) NOT NULL,
Fruiting_Season VARCHAR2(7) CONSTRAINT Check_Fruiting_Season CHECK(Fruiting_Season IN ('Early','Mid','Late')) NOT NULL,
Cooking VARCHAR2(1) CONSTRAINT Check_Suitability CHECK(Cooking IN ('Y','N')) NOT NULL,
Eating VARCHAR2(1) CONSTRAINT Check_Suitable CHECK(Eating IN ('Y','N')) NOT NULL,
Fruit_size VARCHAR2(8) CONSTRAINT Check_Fruit_Size CHECK(Fruit_Size IN ('Large','Medium','Small')) NOT NULL,
Fruit_color VARCHAR2(10) NOT NULL,
Yield VARCHAR2(9) CONSTRAINT Check_Yield_Amount CHECK(Yield IN ('Heavy','Average','Light')) NOT NULL,
CONSTRAINT PK_Variety_Name PRIMARY KEY(Name)
);

```

The 'Script Output' pane at the bottom shows the execution results:

```

Table CUSTOMER created.

Table ROOTSTOCK created.

Table VARIETY created.

```

Tree, Order Form And Order Item Table Command:

The screenshot displays the Oracle SQL Developer interface with the following components:

- Connections:** Shows the 'Oracle Connection' selected in the left pane.
- Tables (Filtered):** Lists existing tables including BUILDING, CUSTOMER, DEPARTMENT, EMPLOYEE, FLOORSPEACE, JOB, ROOTSTOCK, and VARIETY.
- SQL Worksheet:** Contains the following SQL commands:


```

CREATE TABLE Tree(
  ID VARCHAR2(10),
  Roottype VARCHAR2(10) NOT NULL
  REFERENCES Rootstock(RootstockType),
  Variety VARCHAR2(10) NOT NULL
  REFERENCES Variety(Name),
  Age NUMBER(3),
  Pot_size VARCHAR2(8),
  Price DECIMAL(4,2) CONSTRAINT Check_Price_Greater_than_Zero CHECK(Price > 0) NOT NULL,
  Available_On DATE NOT NULL,
  CONSTRAINT PK_Tree_ID PRIMARY KEY(ID)
);

CREATE TABLE Order_Form(
  Order_ID VARCHAR2(10),
  Customer_ID VARCHAR2(10) NOT NULL,
  Order_Date DATE NOT NULL,
  CONSTRAINT PK_Order_Form_OID PRIMARY KEY(Order_ID),
  CONSTRAINT FK_Order_Form_CID FOREIGN KEY(Customer_ID) REFERENCES Customer(Customer_ID)
);

CREATE TABLE Order_Item(
  Tree_ID VARCHAR2(10) NOT NULL,
  Order_ID VARCHAR2(10) NOT NULL,
  CONSTRAINT FK_Order_Item_TID FOREIGN KEY(Tree_ID) REFERENCES Tree(ID),
  CONSTRAINT FK_Order_Item_OID FOREIGN KEY(Order_ID) REFERENCES Order_Form(Order_ID),
  CONSTRAINT PK_Order_Item_TID PRIMARY KEY(Tree_ID)
);
      
```
- Script Output:** Shows the execution results:


```

Table CUSTOMER created.

Table ROOTSTOCK created.

Table VARIETY created.

Table TREE created.

Table ORDER_FORM created.

Table ORDER_ITEM created.
      
```