Coffee Time

ISYS 464-05

Team #3

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Part I: Background

Organization

Coffee Time is a company founded in 2017 by six students from San Francisco State University. Our goal is to develop a database that will improve the wholesale process of ordering coffee beans from our array of suppliers and distributing them to coffee shops from all over. We receive our supply from large-scale coffee roasters that process the coffee beans in streamlined factories.

Information System

We have many information systems that are utilized in order for us to analyze the business processes and forecast sales trends, as well as provide real time information necessary for inventory management of all our supplies. The purpose of the information system is to store, process, and produce up-to-date data that streamlines our coffee wholesale process, and to allow customers to place orders. The information systems will be utilized for managing large-scale inventory, greater efficiency processing orders, and generating sales.

Database

The purpose of the database is to store the data from the information system concerning customers, warehouses, and the coffee shops that receive our products. The database is a supplier-based ordering system. This includes data about coffee beans, coffee sales, coffee shops (clients), customers, shipment methods, etc. Also, the database needs to show certain employees of the company their corresponding views of the data in order to achieve their roles. The

database will help the information system accomplish its purpose by showing different managers the data they need to see how well the company is doing and what decisions to ultimately make.

User groups

User groups will include all staff personnel and clients that are necessary for daily operations. The following user-groups consist of:

Manager - Coffee Time has one executive manager that oversees all daily operations. The executive manager manages the sales team and warehouse team, and requires access to all available information that each respective team utilizes.

Sales Team - This team is responsible for operations regarding the sale of coffee beans to our clients and new/potential customers. The sales team acts as our customer service representatives that will oversee sales and customer support. Sales managers are responsible for ensuring the team is meeting sales goals, acquiring new clients, and maintaining old ones. This user group will require information about our suppliers, purchasing records, product info, our clients, and shipping logistics.

Warehouse Team - This team is responsible for all operations regarding movement of product, inventory, and shipping & delivery. Along with managing and ordering the coffee beans we distribute to our clients, the warehouse management team is responsible for rating beans that are for sale. The team will also supervise shipment specialists and assist with operations. Managers

are required to complete paperwork and reports related to daily responsibilities. This user group will require information about suppliers, purchasing records, product info, client info, and shipping & delivery.

Customer - This position will be filled by clients requesting quotes and placing orders. This user will require information about products and shipping.

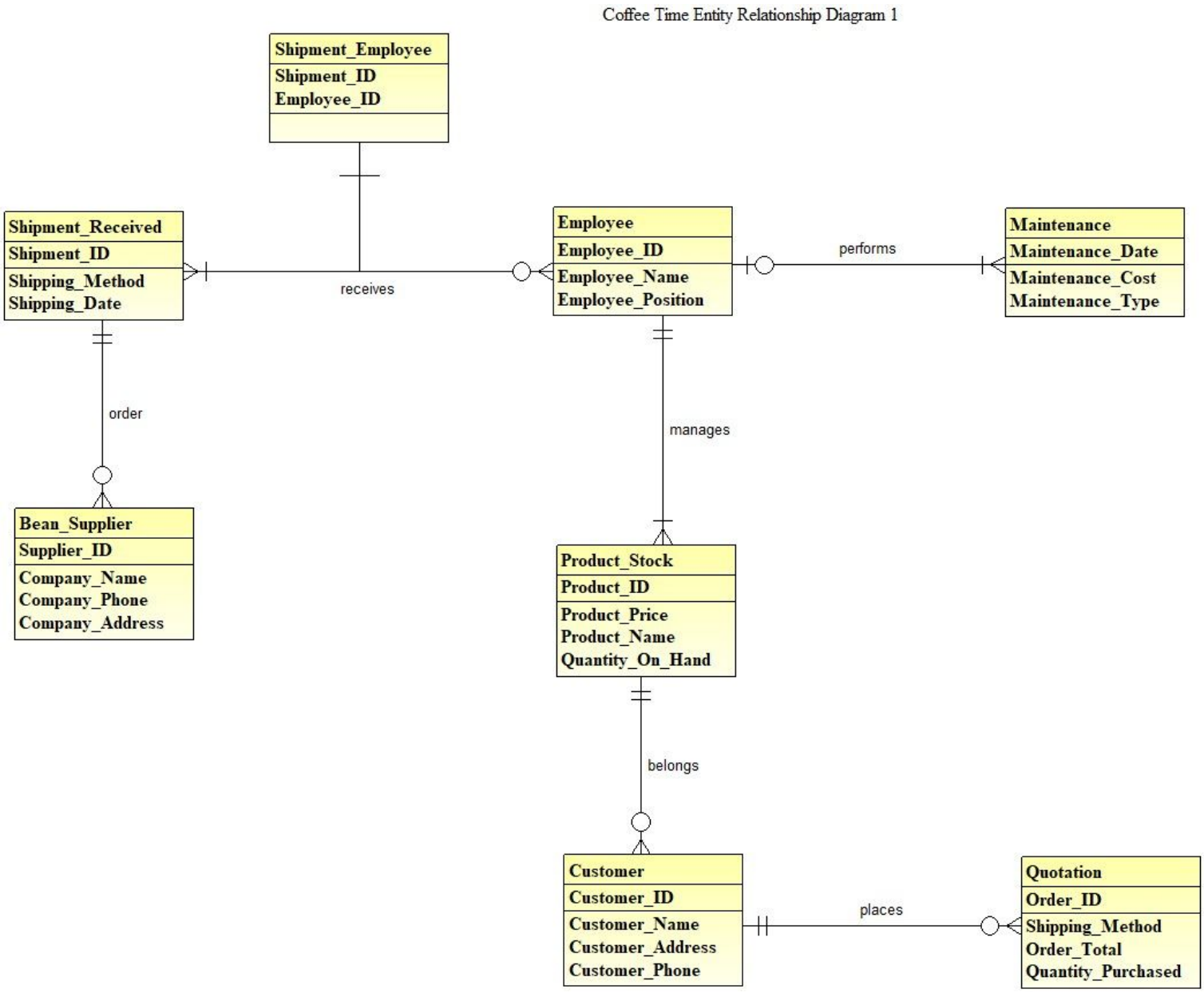
Suppliers - These users will respond to queries about sales and inventory. They will also require information about inventory of product, sales data, and tracking/shipping updates.

Part II: Requirements

User/ User Group	**Output Data Requirements**	**Input Data Requirements**
Manager(s)	Data: Response to query about sales, order data, shipping and receiving orders: ● Sales data ● Products desired ● Product info ● Orders Data Use: To analyze sales trends, determine what products need to be reordered and make sure no products are out of stock.	Data: Entered when orders are fulfilled: ● Customer Info ● Order data ● Sales data
Sales Team	Data: Response to query about customer's needs: ● Products cost ● Product information ● Total cost ● Inventory Use: To advise customers of prices and total cost	Data: Entered when someone purchases a product: ● Customer Info ● Type of payment ● Amount paid
Warehouse Team	Data: Response to query about customer's order and maintenance: ● Product location ● Inventory levels ● Product SKU ● Order details ● Products reordered ● Maintenance jobs done Use: To pack and ship out customer's orders and maintenance	Data: Entered when orders are received and shipped and maintenance jobs need to be done: ● Product location ● Inventory ● Order details ● Shipping details ● Maintenance job type ● Maintenance cost
Customer(s)	Data: Response to query about product information: ● Product price ● Product description Use: To determine what products they need and want	Data: Entered when orders are placed: ● Customer info ● Shipping info ● Products desired ● Shopping cart
Supplier(s)	Data: Response to query about sales and inventory data: ● Inventory ● Sales data ● Products desired Use: To supply what products are needed.	Data: Entered when orders are fulfilled: ● Shipping tracking ● Product cost ● Inventory

Part III: Conceptual Design

Entity Relationship Diagram



Attribute List

Bean Suppliers

- Supplier ID, Company Name, Company Phone Number, Company Address (Address, City, State, Zip Code)

Customers

- Customer ID, Customer Name, Customer Phone Number, Customer Address (Address, City, State, Zip Code)

Quotation

- Order ID, Shipping Method, Order Total, Quantity Purchased

Products in Stock

- Product ID, Product Price, Product Name, Quantity on Hand

Maintenance

- Maintenance Type, Maintenance Cost, Maintenance Date

Shipments Received

- Shipment ID, Shipping Method, Shipping Date

Employee

- Employee ID, Employee Name, Employee Position

Relationship Explanation

Shipment-Supplier: The shipment-supplier relationship is a one-to-many binary relationship because each shipment belongs to one and only one supplier, while supplier may have zero-to-many shipments. Shipments must be received from the supplier to maintain stock for inventory. Optimal inventory is necessary for customers to check quantities and make purchases.

Shipment-Employee: The shipment-employee relationship is a many-to-many binary relationship because shipments must be processed by at least one employee, and employees can have many shipments. Shipments must be processed by employees. Employees unpack shipments and update quantity on hand.

Product-Employee: The product-employee relationship is a binary one-to-many relationship because an employee must manage at least one product, but a product can only be handled by one employee. Employees can handle multiple products used for packing, shipping, and receiving new inventory.

Customer-Quotation: The customer-quotation relationship is a binary one-to-many relationship because each customer may have multiple orders, while each order can only have one customer. This relationship exists because customers have to be able to order the products they need.

Customer-Product: This binary relationship is a one-to-many relationship. Each customer may have one or several orders of products, but each product can only be ordered by one customer. A customer-product relationship has to exist in order for businesses to make any profit.

Employee-Maintenance: The employee-maintenance relationship is a binary one-to many relationship. Each employee may have multiple instances of maintenance duties, but each job can only be done by one employee. Maintenance has to be done in the warehouse in order for business functions to run smoothly, and employees need to be able to fix/replace the broken items.

Part IV: Logical Design

Logical Design

Primary keys are underlined and foreign keys are italicized.

Bean Suppliers: (Supplier ID, Company Name, Company Phone Number, Company Address)

Customers: (Customer ID, Customer Name, Customer Phone Number, Customer Address)

Quotation: (Order ID, Shipping Method, Order Total, Quantity Purchased, *Customer ID*)

Product: (Product ID, Product Price, Product Name, Quantity on Hand, *Employee ID, Customer ID*)

Maintenance: (Maintenance Date, Maintenance Cost, Maintenance Type, *Employee ID*)

Shipments Received: (Shipment ID, Shipping Method, Shipping Date, *Supplier ID*)

Shipment-Employee: (*Shipment ID,Employee ID*)

Employee: (Employee ID, Employee Name, Employee Position)

Domains

Bean Suppliers

- Supplier ID: The domain is the set of all possible supplier IDs. The character size is 10.
- Company Name: The domain is the set of all possible company names. The character size is 30.
- Company Phone Number: The domain is the set of all possible supplier phone numbers. The character size is 30
- Company Address (Address, City, State, Zip Code): The domain is the set of all possible supplier addresses. The character size is 41.

Customers

- Customer ID: The domain is the set of all possible customer IDs. The integer size is 3.
- Name: The domain is the set of all possible customer names. The character size is 30.
- Address (Address, City, State, Zip Code): The domain is the set of all possible customer addresses. The character size is 40.
- Phone Number: The domain is the set of all possible customer phone numbers. The character size is 20.

Quotation

- Order ID: The domain is the set of all possible order IDs. The integer size is 10.
- Shipping Method: The domain is the set of all possible shipping methods. The character size is 20.
- Order Total: The domain is the set of all possible order totals. The integer size is 5.

- Quantity Purchased: The domain is the set of all possible quantities purchased. The integer size is 5

Products

- Product ID: The domain is the set of all possible product IDs. The integer size is 10.
- Product Price: The domain is the set of all possible supplier IDs. The integer size is 5.
- Product Name: The domain is the set of all possible product names. The character size is 40.
- Quantity on Hand: The domain is the set of all possible quantities on hand. The integer size is 5.

Maintenance

- Maintenance Date: The domain is the set of all possible maintenance dates. The format is dd/mm/yy.
- Maintenance Cost: The domain is the set of all possible maintenance costs. The integer size is 5.
- Maintenance Type: The domain is the set of all possible types of maintenance. The character size is 10.

Shipments Received

- Shipment ID: The domain is the set of all possible Shipment IDs. The integer size is 5.
- Shipping Method: The domain is the set of all possible shipping methods. The character size will be 20.
- Shipping Date: The domain is the set of all possible shipment dates. The format for date will be mm/dd/yy.

Employee

- Employee ID: The domain is the set of all possible employee IDs. The character size is 10.
- Employee Name: The domain is the set of all possible employee names. The character size is 30.
- Employee Position: The domain is the set of all possible employee positions. The character size is 30.

Keys

Suppliers: The primary key is Supplier ID. A candidate key would be the composite key of Company Name and Company Address.

Customers: The primary key is Customer ID. A candidate key would be the composite key of Coffeehouse Name and Coffeehouse Address.

Quotation: The primary key is Order ID. The foreign key is Customer ID which is found in the Customer table.

Product: The primary key is Product ID. The foreign keys are Employee ID from the Employee table and Customer ID from the Customer table. A candidate key would be the composite key of Product Name and Product Price.

Maintenance: The primary key is Maintenance Date. The foreign key is Employee ID which is found in the Employee table.

Shipments Received: The primary key is Shipment ID. The foreign key is Supplier ID that is found in the Supplier table.

Shipment-Employee: The primary keys are Shipment ID and Employee ID. The foreign keys are also Shipment ID (from the Shipments Received table) and Employee ID (from the Employee table).

Employees: The primary key is Employee ID.

Conceptual/Logical Design Differences

For conceptual design we are doing top down approach while identifying entities, attributes, than relationships. The conceptual design of data modeling identifies the highest-level, minimalistic view of the relationships between entities. The logical design of data modeling describes the data as much as possible, withholding how the design will be physically implemented. In a logical data model, all entities and their relationships are included. Similarly, all attributes, primary keys, and foreign keys are specified, which allows normalization to occur.

In our project, there is a distinct difference between the conceptual design and the logical design. The conceptual design acts as a road map that is used to outline the main ideas and organize them accordingly. It specifies what tables and entities should exist and the connections between them. Then, as the complexity of the details increase with your needs, the need for a logical design is required so we understand the details of our data without worrying about how they will actually be implemented in the physical model. The logical design explicitly defines what the columns in each table are, and how it corresponds directly with the information system we are using for Coffee Time.

Part V: Implementation

Tables:

CREATE TABLE and INSERT Statements:

```
-- Drop old Tables
drop table Shipment_Employee;
```

```
drop table Shipment_Received;
drop table Maintenance;
drop table Quotation;
drop table Product_Stock;
drop table Employee;
drop table Customer;
drop table Bean_Supplier;

--Create New Tables
create table Bean_Supplier
(Supplier_ID            char(10),
Company_Name            char(30),
Company_Phone           char(30),
Company_Address         char(41),
primary key (Supplier_ID));

create table Customer
(Customer_ID            integer,
Customer_Name       char(30),
Customer_Address    char(40),
Customer_Phone          char(20),
primary key (Customer_ID));

create table Employee
(Employee_ID            char(10),
Employee_Name           char(30),
Employee_Position   char(30),
primary key (Employee_ID));

create table Shipment_Received
(Shipment_ID            integer,
Shipping_Method         char(20),
Shipping_Date           date,
Supplier_ID             char(10),
primary key (Shipment_ID),
foreign key (Supplier_ID) references Bean_Supplier (Supplier_ID) ON DELETE CASCADE);

create table Shipment_Employee
(Shipment_ID            integer,
Employee_ID             char(10),
primary key (Shipment_ID, Employee_ID));

create table Maintenance
(Maintenance_Date   date,
Maintenance_Cost    integer,
```

```
Maintenance_Type    char(10),
Employee_ID         char(10),
primary key (Maintenance_Date),
foreign key (Employee_ID) references Employee (Employee_ID) ON DELETE CASCADE);

create table Quotation
(Order_ID           integer,
Shipping_Method     char(20),
Order_Total         integer,
Quantity_Purchased  integer,
Customer_ID         integer,
primary key (Order_ID),
foreign key (Customer_ID) references Customer (Customer_ID) ON DELETE CASCADE);

create table Product_Stock
(Product_ID         int,
Product_Price       int,
Product_Name        char(40),
Quantity_On_Hand    integer,
Employee_ID         char(10),
Customer_ID         integer,
primary Key (Product_ID),
foreign key (Employee_ID) references Employee (Employee_ID) ON DELETE CASCADE,
foreign Key (Customer_ID) references Customer (Customer_ID) ON DELETE CASCADE);

-- Populate Bean_Supplier table
Insert into Bean_Supplier
Values ('S105', 'Coffee Time', '4156568843', 'Old Pennington Avenue Powell CA 37849');
Insert into Bean_Supplier
Values ('S106', 'Grounds coffee', '6504538942', '11 Shirley Road Lagrange CA 30240');
Insert into Bean_Supplier
Values ('S107', 'Unique beans', '4159322389', '178 Boston Avenue Benton Harbor CA 49022');
Insert into Bean_Supplier
Values ('S108', 'Pour over', '4158935988', '927 North Ave. Monsey CA 10952');
Insert into Bean_Supplier
Values ('S109', 'Flavor coffee', '6505416622', '416 N Sutor Drive Trussville CA 35173');
Insert into Bean_Supplier
Values ('S110', 'Exotic coffee', '4157640053', '7 Orange Avenue Stafford CA 22554');
Insert into Bean_Supplier
Values ('S111', 'Extreme caffeine', '4154564542', '14 Glen Creek Lane Valdosta CA 31601');
Insert into Bean_Supplier
Values ('S112', 'one more cup', '4156487221', '9998 Spruce Street West Chester CA 19380');
Insert into Bean_Supplier
Values ('S113', 'Filter inc', '6507138990', '56 Nichols Avenue Dalton CA 30721');
Insert into Bean_Supplier
```

```
Values ('S114', 'Cup of Joes', '4157803456', '478 Crescent Street Temple Hills CA 20748');
Insert into Bean_Supplier
Values ('S115', 'Cold brew', '6504549845', '9928 Wall Street Mesa CA 85203');
Insert into Bean_Supplier
Values ('S116', 'Around the world coffee', '7176748932', '51 Dogwood Avenue Gloucester CA
01930');
Insert into Bean_Supplier
Values ('S117', 'Black coffee', '7173436611', '9862 Cedar Lane Los Banos CA 93635');

-- Populate Customer table
insert into Customer
values (123, 'Blue Bottle Coffee', '2453 Fillmore St SF CA 94115', '5106533394');
insert into Customer
values (124, 'Starbucks', '5455 Geary Blvd SF CA 94121', '4153868813');
insert into Customer
values (125, 'Philz Coffee', '113 B St San Mateo CA 94401', '6509311770');
insert into Customer
values (126, 'Peets Coffee', '5201 Geary Blvd SF CA 94118', '4155922200');
insert into Customer
values (127, 'Home Cafe', '2018 Clement St SF CA 94121', '4157029244');
insert into Customer
values (128, 'Muddys Coffee', '1304 Valencia St SF CA 94110', '4156477994');
insert into Customer
values (129, 'Lunas Coffee', '1101 Potrero Ave SF CA 94110', '4157103066');
insert into Customer
values (130, 'Trouble Coffee', '4033 Judah St SF CA 94122', '4156824732');
insert into Customer
values (131, 'Antigua Coffee', '1131 Taraval St SF CA 94116', '4156833259');
insert into Customer
values (132, 'Caffe Trieste', '601 Vallejo St SF CA 94133', '4159822605');
insert into Customer
values (133, 'Garden Cafe', '3117 Clement St SF CA 94121', '4156681640');
insert into Customer
values (134, 'Sightglass Coffee', '270 7th St SF CA 94103', '4155737740');
insert into Customer
values (135, 'Snowbird Coffee', '1352 9th Ave A SF CA 94122', '6506927700');
insert into Customer
values (136, 'Janes Coffee', '2123 Fillmore St SF CA 94115', '4159315263');
insert into Customer
values (137, 'Farleys Coffee', '1315 18th St SF CA 94107', '4156481545');

--Populate Employee Table
insert into Employee
values ('E01', 'Henrianna Chung', 'Manager');
insert into Employee
```

```
values ('E02', 'Brian Yee', 'Sales Team');
insert into Employee
values ('E03', 'Shannon Lee', 'Warehouse Team');
insert into Employee
values ('E04', 'Katrina Sponsler', 'Manager');
insert into Employee
values ('E05', 'Chris Ion', 'Sales Team');
insert into Employee
values ('E06', 'Alex Tam', 'Warehouse Team');
insert into Employee
values ('E07', 'Bob Smith', 'Manager');
insert into Employee
values ('E08', 'Andy Tran', 'Sales Team');
insert into Employee
values ('E09', 'Mitch Green', 'Warehouse Team');
insert into Employee
values ('E10', 'Bill Baggins', 'Manager');

--Populate Shipment_Received Table
insert into Shipment_Received
values (10000, 'Expedited','12-AUG-16', 'S105');
insert into Shipment_Received
values (11000, 'Standard','30-SEP-16', 'S106');
insert into Shipment_Received
values (12000, 'Expedited','22-OCT-16', 'S107');
insert into Shipment_Received
values (13000, 'Standard','02-NOV-16', 'S108');
insert into Shipment_Received
values (14000, 'Expedited','24-JAN-17', 'S109');
insert into Shipment_Received
values (15000, 'Expedited','14-FEB-17', 'S110');
insert into Shipment_Received
values (16000, 'Standard','15-APR-17', 'S111');
insert into Shipment_Received
values (17000, 'Standard','05-JUN-17', 'S112');
insert into Shipment_Received
values (18000, 'Expedited','13-JUL-17', 'S113');
insert into Shipment_Received
values (21000, 'Standard','26-OCT-17', 'S116');
insert into Shipment_Received
values (22000, 'Standard','06-NOV-17', 'S117');

--Populate Shipment_Employee
insert into Shipment_Employee
values (10000, 'E01');
```

```
insert into Shipment_Employee
values (11000, 'E02');
insert into Shipment_Employee
values (12000, 'E03');
insert into Shipment_Employee
values (13000, 'E04');
insert into Shipment_Employee
values (11000, 'E05');
insert into Shipment_Employee
values (19000, 'E06');
insert into Shipment_Employee
values (18000, 'E07');
insert into Shipment_Employee
values (13000, 'E08');
insert into Shipment_Employee
values (19000, 'E09');
insert into Shipment_Employee
values (17000, 'E10');
insert into Shipment_Employee
values (15000, 'E01');
insert into Shipment_Employee
values (10000, 'E02');
insert into Shipment_Employee
values (16000, 'E03');


--Populate Maintenance Table
insert into Maintenance
values ('01-NOV-17', 200, 'Weekly', 'E01');
insert into Maintenance
values ('02-NOV-17', 10, 'Daily', 'E02');
insert into Maintenance
values ('03-NOV-17', 10, 'Daily', 'E03');
insert into Maintenance
values ('04-NOV-17', 10, 'Daily', 'E04');
insert into Maintenance
values ('05-NOV-17', 10, 'Daily', 'E05');
insert into Maintenance
values ('06-NOV-17', 10, 'Daily', 'E06');
insert into Maintenance
values ('07-NOV-17', 200, 'Weekly', 'E07');
insert into Maintenance
values ('08-NOV-17', 10, 'Daily', 'E08');
insert into Maintenance
values ('09-NOV-17', 10, 'Daily', 'E09');
```

```
insert into Maintenance
values ('10-NOV-17', 10, 'Daily', 'E10');
insert into Maintenance
values ('11-NOV-17', 10, 'Daily', 'E01');
insert into Maintenance
values ('12-NOV-17', 10, 'Daily', 'E02');
insert into Maintenance
values ('13-NOV-17', 10, 'Daily', 'E03');
insert into Maintenance
values ('14-NOV-17', 200, 'Weekly', 'E04');

--Populate Quotation table
insert into Quotation
values (51671, 'Standard', 1000.00, 100, 123);
insert into Quotation
values (51672, 'Standard', 5000.00, 500, 124);
insert into Quotation
values (51673, 'Expedited', 800.00, 80, 125);
insert into Quotation
values (51674, 'Expedited', 700.00, 70, 126);
insert into Quotation
values (51675, 'Standard', 4000.00, 40, 127);
insert into Quotation
values (51676, 'Standard', 1500, 150, 128);
insert into Quotation
values (51677, 'Standard', 1000, 100, 129);
insert into Quotation
values (51678, 'Expedited', 4300, 43, 130);
insert into Quotation
values (51679, 'Expedited', 200, 20, 131);
insert into Quotation
values (51680, 'Standard', 300, 3, 132);
insert into Quotation
values (51681, 'Standard', 2500, 25, 133);
insert into Quotation
values (51682, 'Standard', 700, 7, 134);
insert into Quotation
values (51683, 'Expedited', 2200, 22, 135);
insert into Quotation
values (51684, 'Standard', 3200, 32, 136);
insert into Quotation
values (51685, 'Expedited', 500, 50, 137);
insert into Quotation
values (51686, 'Standard', 100, 10, 123);
insert into Quotation
```

```
values (51687, 'Expedited', 600, 60, 124);

-- Populate Product_Stock table
insert into Product_Stock
values (01230, 2, 'Coffee Time Espresso', 50, 'E01', 123);
insert into Product_Stock
values (01231, 2, 'Coffee Time House Blend', 50, 'E02', 124);
insert into Product_Stock
values (01232, 2, 'Coffee Time Robusta', 75, 'E04', 125);
insert into Product_Stock
values (01233, 2, 'Coffee Time Arabica', 100, 'E05', 126);
insert into Product_Stock
values (01234, 2, 'Coffee Time French Roast', 150, 'E06', 127);
insert into Product_Stock
values (01235, 3, 'Coffee Time Dark Roast', 125, 'E07', 128);
insert into Product_Stock
values (01236, 3, 'Coffee Time Kona', 100, 'E08', 129);
insert into Product_Stock
values (01237, 4, 'Coffee Time Blue Mountain', 50, 'E09', 130);
insert into Product_Stock
values (01238, 4, 'Coffee Time Turkish Blend', 50, 'E10', 131);
insert into Product_Stock
values (01239, 5, 'Coffee Time Sumatra', 50, 'E01', 132);
commit;
```

Table Descriptions:

Shipment_Employee:

Name	Null?	Type
SHIPMENT_ID	NOT NULL	NUMBER(38)
EMPLOYEE_ID	NOT NULL	CHAR(10)

Shipment_Received:

Name	Null?	Type
SHIPMENT_ID	NOT NULL	NUMBER(38)
SHIPPING_METHOD		CHAR(20)
SHIPPING_DATE		DATE
SUPPLIER_ID		CHAR(10)

Maintenance:

Name	Null?	Type
MAINTENANCE_DATE	NOT NULL	DATE
MAINTENANCE_COST		NUMBER(38)
MAINTENANCE_TYPE		CHAR(10)
EMPLOYEE_ID		CHAR(10)

Quotation:

Name	Null?	Type
ORDER_ID	NOT NULL	NUMBER(38)
SHIPPING_METHOD		CHAR(20)
ORDER_TOTAL		NUMBER(38)
QUANTITY_PURCHASED		NUMBER(38)
CUSTOMER_ID		NUMBER(38)

Product_Stock:

Name	Null?	Type
PRODUCT_ID	NOT NULL	NUMBER(38)
PRODUCT_PRICE		NUMBER(38)
PRODUCT_NAME		CHAR(40)
QUANTITY_ON_HAND		NUMBER(38)
EMPLOYEE_ID		CHAR(10)
CUSTOMER_ID		NUMBER(38)

Employee:

Name	Null?	Type
EMPLOYEE_ID	NOT NULL	CHAR(10)
EMPLOYEE_NAME		CHAR(30)
EMPLOYEE_POSITION		CHAR(30)

Customer:

Name	Null?	Type
CUSTOMER_ID	NOT NULL	NUMBER(38)
CUSTOMER_NAME		CHAR(30)
CUSTOMER_ADDRESS		CHAR(40)
CUSTOMER_PHONE		CHAR(20)

Bean_Supplier:

Name	Null?	Type
SUPPLIER_ID	NOT NULL	CHAR(10)
COMPANY_NAME		CHAR(30)
COMPANY_PHONE		CHAR(30)
COMPANY_ADDRESS		CHAR(41)

Table Data:

Shipment_Employee:

SHIPMENT_ID	EMPLOYEE_I
10000	E01
10000	E02
11000	E02
11000	E05
12000	E03
13000	E04
13000	E08

15000 E01
16000 E03
17000 E10
18000 E07

SHIPMENT_ID EMPLOYEE_I
---------- ----------
19000 E06
19000 E09

13 rows selected.

Shipment_Received:

SHIPMENT_ID SHIPPING_METHOD SHIPPING_ SUPPLIER_I
---------- ---------- --------- ----------
10000 expedited 12-AUG-16 S105
11000 standard 30-SEP-16 S106
12000 expedited 22-OCT-16 S107
13000 standard 02-NOV-16 S108
14000 expedited 24-JAN-17 S109
15000 expedited 14-FEB-17 S110
16000 standard 15-APR-17 S111
17000 standard 05-JUN-17 S112
18000 expedited 13-JUL-17 S113
21000 standard 26-OCT-17 S116
22000 standard 06-NOV-17 S117

11 rows selected.

Maintenance:

MAINTENAN MAINTENANCE_COST MAINTENANC EMPLOYEE_I
--------- ---------- ---------- ----------
01-NOV-17 200 Weekly E01
02-NOV-17 10 Daily E02
03-NOV-17 10 Daily E03
04-NOV-17 10 Daily E04
05-NOV-17 10 Daily E05
06-NOV-17 10 Daily E06
07-NOV-17 200 Weekly E07
08-NOV-17 10 Daily E08
09-NOV-17 10 Daily E09
10-NOV-17 10 Daily E10
11-NOV-17 10 Daily E01

MAINTENAN MAINTENANCE_COST MAINTENANC EMPLOYEE_I
--------- ---------- ---------- ----------
12-NOV-17 10 Daily E02
13-NOV-17 10 Daily E03
14-NOV-17 200 Weekly E04

14 rows selected.

Quotation:

ORDER_ID	SHIPPING_METHOD	ORDER_TOTAL	QUANTITY_PURCHASED	CUSTOMER_ID
51671	Standard	1000	100	123
51672	Standard	5000	500	124
51673	Expedited	800	80	125
51674	Expedited	700	70	126
51675	Standard	4000	40	127
51676	Standard	1500	150	128
51677	Standard	1000	100	129
51678	Expedited	4300	43	130
51679	Expedited	200	20	131
51680	Standard	300	3	132
51681	Standard	2500	25	133

ORDER_ID	SHIPPING_METHOD	ORDER_TOTAL	QUANTITY_PURCHASED	CUSTOMER_ID
51682	Standard	700	7	134
51683	Expedited	2200	22	135
51684	Standard	3200	32	136
51685	Expedited	500	50	137
51686	Standard	100	10	123
51687	Expedited	600	60	124

17 rows selected.

Product_Stock:

PRODUCT_ID	PRODUCT_PRICE	PRODUCT_NAME	QUANTITY_ON_HAND	EMPLOYEE_I	CUSTOMER_ID
1230	2	Coffee Time Espresso	50	E01	123
1231	2	Coffee Time House Blend	50	E02	124
1232	2	Coffee Time Robusta	75	E04	125

PRODUCT_ID	PRODUCT_PRICE	PRODUCT_NAME	QUANTITY_ON_HAND	EMPLOYEE_I	CUSTOMER_ID
1233	2	Coffee Time Arabica	100	E05	126
1234	2	Coffee Time French Roast	150	E06	127
1235	3	Coffee Time Dark Roast	125	E07	128

PRODUCT_ID PRODUCT_PRICE PRODUCT_NAME
---------- ------------- --
QUANTITY_ON_HAND EMPLOYEE_I CUSTOMER_ID
---------------- ---------- ----------
1236 3 Coffee Time Kona
100 E08 129

1237 4 Coffee Time Blue Mountain
50 E09 130

1238 4 Coffee Time Turkish Blend
50 E10 131

PRODUCT_ID PRODUCT_PRICE PRODUCT_NAME
---------- ------------- --
QUANTITY_ON_HAND EMPLOYEE_I CUSTOMER_ID
---------------- ---------- ----------
1239 5 Coffee Time Sumatra
50 E01 132

10 rows selected.

Employee:

EMPLOYEE_I	EMPLOYEE_NAME	EMPLOYEE_POSITION
E01	Henrianna Chung	Manager
E02	Brian Yee	Sales Team
E03	Shannon Lee	Warehouse Team
E04	Katrina Sponsler	Manager
E05	Chris Ion	Sales Team
E06	Alex Tam	Warehouse Team
E07	Bob Smith	Manager
E08	Andy Tran	Sales Team
E09	Mitch Green	Warehouse Team
E10	Bill Baggins	Manager

10 rows selected.

Customer:

CUSTOMER_ID CUSTOMER_NAME
---------- ------------------------------
CUSTOMER_ADDRESS CUSTOMER_PHONE
-- --------------------
123 Blue Bottle Coffee
2453 Fillmore St SF CA 94115 5106533394

124 Starbucks
5455 Geary Blvd SF CA 94121 4153868813

125 Philz Coffee

113 B St San Mateo CA 94401 6509311770

CUSTOMER_ID CUSTOMER_NAME
---------- ------------------------------
CUSTOMER_ADDRESS CUSTOMER_PHONE
-- ----------
126 Peets Coffee
5201 Geary Blvd SF CA 94118 4155922200

127 Home Cafe
2018 Clement St SF CA 94121 4157029244

128 Muddys Coffee
1304 Valencia St SF CA 94110 4156477994

CUSTOMER_ID CUSTOMER_NAME
---------- ------------------------------
CUSTOMER_ADDRESS CUSTOMER_PHONE
-- ----------
129 Lunas Coffee
1101 Potrero Ave SF CA 94110 4157103066

130 Trouble Coffee
4033 Judah St SF CA 94122 4156824732

131 Antigua Coffee
1131 Taraval St SF CA 94116 4156833259

CUSTOMER_ID CUSTOMER_NAME
---------- ------------------------------
CUSTOMER_ADDRESS CUSTOMER_PHONE
-- ----------
132 Caffe Trieste
601 Vallejo St SF CA 94133 4159822605

133 Garden Cafe
3117 Clement St SF CA 94121 4156681640

134 Sightglass Coffee
270 7th St SF CA 94103 4155737740

CUSTOMER_ID CUSTOMER_NAME
---------- ------------------------------
CUSTOMER_ADDRESS CUSTOMER_PHONE
-- ----------
135 Snowbird Coffee
1352 9th Ave A SF CA 94122 6506927700

136 Janes Coffee
2123 Fillmore St SF CA 94115 4159315263

137 Farleys Coffee
1315 18th St SF CA 94107 4156481545

15 rows selected.

Bean_Supplier:

SUPPLIER_I COMPANY_NAME COMPANY_PHONE
---------- ------------------------------ ------------------------------
COMPANY_ADDRESS

S105 Coffee Time 4156568843
Old Pennington Avenue Powell CA 37849

S106 Grounds coffee 6504538942
11 Shirley Road Lagrange CA 30240

S107 Unique beans 4159322389
178 Boston Avenue Benton Harbor CA 49022

SUPPLIER_I COMPANY_NAME COMPANY_PHONE
---------- ------------------------------ ------------------------------
COMPANY_ADDRESS

S108 Pour over 4158935988
927 North Ave. Monsey CA 10952

S109 Flavor coffee 6505416622
416 N Sutor Drive Trussville CA 35173

S110 Exotic coffee 4157640053
7 Orange Avenue Stafford CA 22554

SUPPLIER_I COMPANY_NAME COMPANY_PHONE
---------- ------------------------------ ------------------------------
COMPANY_ADDRESS

S111 Extreme caffeine 4154564542
14 Glen Creek Lane Valdosta CA 31601

S112 one more cup 4156487221
9998 Spruce Street West Chester CA 19380

S113 Filter inc 6507138990
56 Nichols Avenue Dalton CA 30721

SUPPLIER_I COMPANY_NAME COMPANY_PHONE
---------- ------------------------------ ------------------------------
COMPANY_ADDRESS

```
----------------------------------------
S114        Cup of Joes                     4157803456
478 Crescent Street Temple Hills CA 20748

S115        Cold brew                       6504549845
9928 Wall Street Mesa CA 85203

S116        Around the world coffee         7176748932
51 Dogwood Avenue Gloucester CA 01930


SUPPLIER_I COMPANY_NAME                     COMPANY_PHONE
---------- ------------------------------ ------------------------------
COMPANY_ADDRESS
----------------------------------------
S117        Black coffee                    7173436611
9862 Cedar Lane Los Banos CA 93635


13 rows selected.
```

External Views:

This external views provides all data on one customer, Blue Bottle Coffee. This view shows data about how much coffee the customer purchased and how much money they spent. The sales team uses this data.

CREATE VIEW Statements:

```
create view Blue_Bottle_Coffee_View as
  2  select Customer_ID, Customer_Name
  3  from Customer
  4  where Customer_ID = 123;
create view Blue_Bottle_Quote_View as
  2  select Quotation.Customer_ID, Quantity_Purchased, Order_Total
  3  from Quotation, Blue_Bottle_Coffee_View
  4  where Quotation.Customer_ID = Blue_Bottle_Coffee_View.Customer_ID;
create view Blue_Bottle_Product_View as
  2  select Product_Stock.Customer_ID, Product_Name, Product_Price
  3  from Product_Stock
  4  where Product_Stock.Customer_ID in
  5  (select Blue_Bottle_Quote_View.Customer_ID
  6  from Blue_Bottle_Quote_View);
```

View Data:

```
CUSTOMER_ID CUSTOMER_NAME
----------- --------------------------------
        123 Blue Bottle Coffee


CUSTOMER_ID QUANTITY_PURCHASED ORDER_TOTAL
----------- ------------------ -----------
        123                100        1000
        123                 10         100
CUSTOMER_ID PRODUCT_NAME                                PRODUCT_PRICE
----------- ---------------------------------------- -------------
        123 Coffee Time Espresso                                   2
```

The second external view provides data on warehouse employees and their daily jobs. This view shows data about maintenance duties and restocking. The warehouse team uses this information to see what jobs are being done and by who.

CREATE VIEW Statements:

```
create view Warehouse_Team_Employee_View as
  2  select Employee_ID, Employee_Position
  3  from Employee
  4  where Employee_Position = 'Warehouse Team';
create view Warehouse_Team_Maint_View as
  2  select Maintenance.Employee_ID, Maintenance_Date, Maintenance_Type
  3  from Maintenance, Warehouse_Team_Employee_View
  4  where Maintenance.Employee_ID = Warehouse_Team_Employee_View.Employee_ID;
create view Warehouse_Team_Restock_View as
  2  select Product_Stock.Employee_ID, Product_Name, Quantity_on_Hand
  3  from Product_Stock
  4  where Product_Stock.Employee_ID in
  5  (select Warehouse_Team_Maint_View.Employee_ID
  6  from Warehouse_Team_Maint_View);
```

View Data:

```
EMPLOYEE_I EMPLOYEE_POSITION
---------- ------------------------------
E03        Warehouse Team
E06        Warehouse Team
E09        Warehouse Team


EMPLOYEE_I MAINTENAN MAINTENANC
---------- --------- ----------
E03        03-NOV-17 Daily
E03        13-NOV-17 Daily
E06        06-NOV-17 Daily
E09        09-NOV-17 Daily

EMPLOYEE_I PRODUCT_NAME                                QUANTITY_ON_HAND
---------- ---------------------------------------- ----------------
E06        Coffee Time French Roast                             150
E09        Coffee Time Blue Mountain                             50
```

Queries:

Suppliers:

```
SQL> Select Company_Name, Company_Address
  2  From Bean_Supplier
  3  Where Supplier_ID = 'S114';

COMPANY_NAME                   COMPANY_ADDRESS
------------------------------ ----------------------------------------
Cup of Joes                    478 Crescent Street Temple Hills CA 20748
```

Customers:

```
SQL> Select Customer_ID, Customer_Address
  2  From Customer
  3  Where Customer_Name = 'Home Cafe';

CUSTOMER_ID CUSTOMER_ADDRESS
----------- ----------------------------------------
        127 2018 Clement St SF CA 94121
```

Quotation:

```
SQL> Select Customer_ID, Order_Total
  2  From Quotation
```

```
  3  Where Shipping_Method = 'Standard'
  4  Order By Customer_ID;

CUSTOMER_ID ORDER_TOTAL
----------- -----------
        123        1000
        123         100
        124        5000
        127        4000
        128        1500
        129        1000
        132         300
        133        2500
        134         700
        136        3200

10 rows selected.
```

Product_Stock:

```
SQL> Select Product_Name, Product_Price, Quantity_On_Hand
  2  From Product_Stock
  3  Where Customer_ID = '128';

PRODUCT_NAME                         PRODUCT_PRICE QUANTITY_ON_HAND
------------------------------------ ------------- ----------------
Coffee Time Dark Roast                           3              125
```

Maintenance:

```
SQL> Select Maintenance_Cost
From   2  Maintenance
  3  Where Maintenance_Type = 'Weekly';
```

MAINTENANCE_COST

200

200

200

Shipments Received:

```
SQL> Select Supplier_ID, Shipping_Date
  2  From Shipment_Received
  3  Where Shipping_Method = 'airplane';
```

SUPPLIER_I SHIPPING_

---------- ---------

S105 12-AUG-16

S110 14-FEB-17

S111 15-APR-17

Shipment - Employee:

```
SQL> Select Shipment_ID
  2  From Shipment_Employee
  3  Where Employee_ID = 'E02';
```

SHIPMENT_ID

10000

11000

Employee:

```
SQL> Select Employee_Name, Employee_Position
  2  From Employee
  3  Where Employee_ID = 'E08';
```

EMPLOYEE_NAME EMPLOYEE_POSITION

------------------------------ ------------------------------

Andy Tran Sales Team

Grant Access:
Team Members:

Alex Tam: Database Administrator

Henrianna Chung: Manager

```
GRANT ALL
ON Warehouse_Team_Employee_View
TO OPS$hchung1

GRANT ALL
ON Warehouse_Team_Maint_View
TO OPS$hchung1

GRANT ALL
ON Warehousee_Team_Restock_View
TO OPS$hchung1

GRANT ALL
ON Blue_Bottle_Coffee_View
TO OPS$hchung1

GRANT ALL
ON Blue_Bottle_Product_View
TO OPS$hchung1

GRANT ALL
ON Blue_Bottle_Quote_View
TO OPS$hchung1
```

Brian Yee: Sales Team

```
GRANT ALL
ON Blue_Bottle_Quote_View
TO OPS$byee5

GRANT ALL
ON Blue_Bottle_Product_View
TO OPS$byee5
```

GRANT ALL
ON Blue_Bottle_Coffee_View
TO OPS$byee5

Shannon Lee: Warehouse Team
GRANT ALL
ON Warehouse_Team_Employee_View
TO OPS$leeshan

GRANT ALL
ON Warehouse_Team_Maint_View
TO OPS$leeshan

GRANT ALL
ON Warehousee_Team_Restock_View
TO OPS$leeshan

Katrina Sponsler: Customer
GRANT SELECT
ON Blue_Bottle_Quote_View
TO OPS$ksponsle

GRANT SELECT
ON Blue_Bottle_Product_View
TO OPS$ksponsle

GRANT SELECT
ON Blue_Bottle_Coffee_View
TO OPS$ksponsle

Chris Ion: Supplier
GRANT SELECT
ON Warehousee_Team_Restock_View
TO OPS$cion

GRANT SELECT
ON Blue_Bottle_Product_View
TO OPS$cion

Professor:

GRANT SELECT

```
ON Shipment_Employee
TO OPS$rnick

GRANT SELECT
ON Shipment_Received
TO OPS$rnick

GRANT SELECT
ON Maintenance
TO OPS$rnick

GRANT SELECT
ON Quotation
TO OPS$rnick

GRANT SELECT
ON Product_Stock
TO OPS$rnick

GRANT SELECT
ON Employee
TO OPS$rnick

GRANT SELECT
ON Customer
TO OPS$rnick

GRANT SELECT
ON Bean_Supplier
TO OPS$rnick

GRANT SELECT
ON Warehouse_Team_Employee_View
TO OPS$rnick

GRANT SELECT
ON Warehouse_Team_Maint_View
TO OPS$rnick

GRANT SELECT
ON Warehousee_Team_Restock_View
TO OPS$rnick

GRANT SELECT
ON Blue_Bottle_Coffee_View
```

TO OPS$rnick

GRANT SELECT
ON Blue_Bottle_Product_View
TO OPS$rnick

GRANT SELECT
ON Blue_Bottle_Quote_View
TO OPS$rnick

The username for the account with the database is: atam8.