

E8.2b Create a dimensional model containing an aggregated fact table, where a fact table shows a summary of daily revenue amount for each officer.

E8.2c Populate the tables created in **E8.2b** with the data. Use the data that you used to populate the tables in the [Figure 8.46](#) as a basis for aggregation.

E8.3 Consider the following scenario involving Big Z Inc., an automotive products wholesaler.

Big Z Inc. wants to create the analytical database (data warehouse) to analyze its order quantities.

The two available data sources, Source 1 and Source 2, are described below.

Source 1 The Big Z Inc. Human Resources Department Table, shown in [Figure 8.47](#).

Source 2 The Big Z Inc. Orders Database, shown in [Figure 8.48](#).

The data warehouse has to enable an analysis of order quantities by:

- date, including:
 - full date
 - day of week
 - day of month
 - month
 - quarter
 - year
- time
- product, including:
 - product ID
 - product name
 - product type
 - product supplier name
- customer, including:
 - customer ID
 - customer name
 - customer type
 - customer zip
- depot, including:
 - depot ID
 - depot size

- depot zip
- order clerk, including:
 - order clerk id
 - order clerk name
 - order clerk title
 - order clerk education level
 - order clerk year of hire

E8.3a Based on the sources and requirements listed above, create a dimensional model that will be used for the dimensionally modeled data warehouse for Big Z Inc.

E8.3b Using data from [Figures 8.47](#) and [8.48](#), illustrate how the tables in the dimensional model created in E8.3a would be populated.

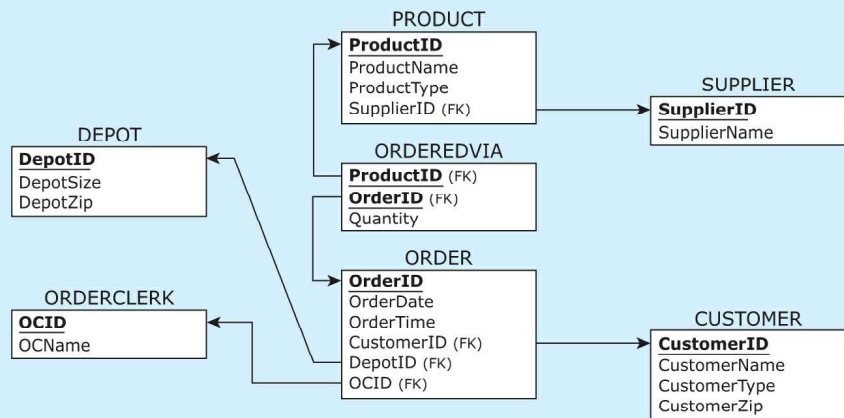
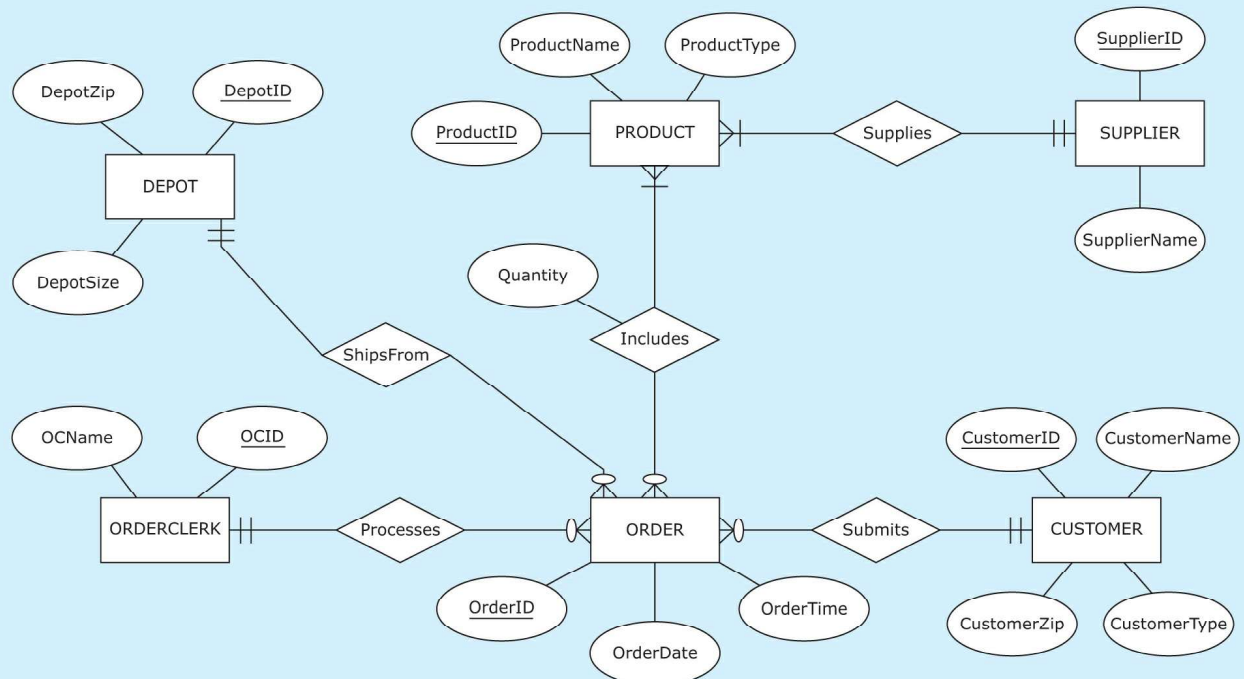
E8.3c Based on the sources and requirements listed above, create an ER model and a mapped relational model for the normalized data warehouse for Big Z Inc.

E8.3d Using data from [Figures 8.47](#) and [8.48](#), illustrate how the tables in the relational model created in E8.3c would be populated.

HUMAN RESOURCES DEPARTMENT TABLE (EMPLOYEE DATA)

<u>EmployeeID</u>	Name	Title	EducationLevel	YearOfHire
OC1	Antonio	Order Clerk	High School	2001
OC2	Wesley	Order Clerk	College	2005
OC3	Lilly	Order Clerk	College	2005

FIGURE 8.47 Source 1: The Big Z Inc. Human Resources Department Table.



DEPOT

DepotID	DepotSize	DepotZip
D1	Small	60611
D2	Large	60660
D3	Large	60611

PRODUCT

ProductID	ProductName	ProductType	SupplierID
P1	BigGripper	Tire	ST
P2	TractionWiz	Tire	ST
P3	SureStart	Battery	BE

SUPPLIER

SupplierID	SupplierName
ST	Super Tires
BE	Batteries Etc

ORDERCLERK

OCID	OCName
OC1	Antonio
OC2	Wesley
OC3	Lilly

ORDER

OrderID	CustomerID	DepotID	OCID	OrderDate	OrderTime
O1	C1	D1	OC1	1-Jan-2013	9:00:00 AM
O2	C2	D1	OC2	2-Jan-2013	9:00:00 AM
O3	C3	D2	OC3	2-Jan-2013	9:30:00 AM
O4	C1	D2	OC1	3-Jan-2013	9:00:00 AM
O5	C2	D3	OC2	3-Jan-2013	9:15:00 AM
O6	C3	D3	OC3	3-Jan-2013	9:30:00 AM

ORDEREDVIA

ProductID	OrderID	Quantity
P1	O1	4
P2	O1	8
P1	O2	12
P2	O3	4
P3	O4	7
P3	O5	5
P2	O6	8
P1	O6	4

CUSTOMER

CustomerID	CustomerName	CustomerType	CustomerZip
C1	Auto Doc	Repair Shop	60137
C2	Bo's Car Repair	Repair Shop	60140
C3	JJ Auto Parts	Retailer	60605

FIGURE 8.48 Source 2: The Big Z Inc. Orders Database.

E8.4. Consider the following scenario involving the slowly changing dimension EMPLOYEE shown below:

Assume Sidney's title changes from Business Analyst to Senior Business Analyst.

EMPLOYEE

<u>EmployeeKey</u>	EmployeeID	EmployeeName	EmployeeTitle
1	E101	Ava	Project Manager
2	E202	Sidney	Business Analyst
3	E303	Lena	Senior Business Analyst

E8.4a Show the dimension EMPLOYEE (with all of its records) if the Type 1 option for handling slowly changing dimensions is applied.

E8.4b Show the dimension EMPLOYEE (with all of its records) if the Type 2 option for handling slowly changing dimensions is applied.

E8.4c Show the dimension EMPLOYEE (with all of its records) if the Type 3 option for handling slowly changing dimensions is applied.

Mini Cases

MC6 Jones Dozers

Jones Dozers wants to create an analytical database to analyze its sales and rentals revenue. The only available data source is the Jones Dozers Sales and Rentals Database (depicted by the ER diagram in [Figure 2.59](#) in mini case **MC6** in [Chapter 2](#), and the relational schema created in mini case **MC6** in [Chapter 3](#)).

Create a dimensional model for a data warehouse that enables analysis of sales and rentals revenue by:

- date
- type of revenue (sale or rental)
- customer
- equipment