Introduction to Database

Chapter Two

Exercise 2 - Morgan Importing

Morgan Importing purchases antiques and home furnishings in Asia and ships those items to a warehouse facility in Los Angeles. Mr. Morgan uses a database to keep a list of items purchased, shipments and shipment items. His database includes the following tables:

SHIPMENT (**ShipmentID**, ShipperName, ShipperInvoiceNumber, DepartureDate, ArrivalDate, InsuredValue)

ITEM (**ItemID**, Description, PurchaseDate, Store, City, Quantity, LocalCurrencyAmt, ExchangeRate)

SHIPMENT_ITEM (***ShipmentID***, **ShipmentItemID**, ***ItemID***, Quantity, Value)

In the database schema above, the primary keys are underlined and the foreign keys are shown in italics.

SHIPMENT

Column Name	Type	Key	Required	Remarks
ShipmentID	Number	Primary Key	Yes	Long Integer
ShipperName	Text (35)	No	Yes	
ShipperInvoiceNumber	Number	No	Yes	Long Integer
DepartureDate	Date/Time	No	No	
ArrivalDate	Date/Time	No	No	
InsuredValue	Currency	No	No	Two Decimal Places

ITEM

Column Name	Type	Key	Required	Remarks
ItemID	Number	Primary Key	Yes	Long Integer
Description	Text (255)	No	Yes	Long Integer
PurchaseDate	Date/Time	No	Yes	
Store	Text (50)	No	Yes	
City	Text (35)	No	Yes	
Quantity	Number	No	Yes	Long Integer
LocalCurrencyAmt	Number	No	Yes	Decimal, 18 Auto
ExchangeRate	Number	No	Yes	Decimal, 12 Auto

SHIPMENT_ITEM

Column Name	Type	Key	Required	Remarks
ShipmentID	Number	Primary Key, Foreign Key	Yes	Long Integer
ShipmentItemID	Number	Primary Key	Yes	Long Integer
ItemID	Number	Foreign Key	Yes	Long Integer
Quantity	Number	No	Yes	Long Integer
Value	Currency	No	Yes	Two Decimal Places

SHIPMENT

ShipmentID	ShipperName	ShipperInvoiceNumber	DepartureDate	ArrivalDate	InsuredValue
1	ABC Trans-Oceanic	2008651	10-Dec-08	15-Mar-09	$15,000.00
2	ABC Trans-Oceanic	2009012	10-Jan-09	20-Mar-09	$12,000.00
3	Worldwide	49100300	05-May-09	17-Jun-09	$27,500.00
4	International	399400	02-Jun-09	17-Jul-09	$7,500.00
5	Worldwide	84899440	10-Jul-09	28-Jul-09	$25,000.00
6	International	488955	05-Aug-09	11-Sep-09	$18,000.00

ITEM

ItemID	Description	PurchaseDate	Store	City	Quantity	LocalCurrencyAmt	ExchangeRate
1	QE Dining Set	07-Apr-09	Eastern Treasures	Manila	2	403405	0.01774
2	Willow Serving Dishes	15-Jul-09	Jade Antiques	Singapore	75	102	0.5903
3	Large Bureau	17-Jul-09	Eastern Sales	Singapore	8	2000	0.5903
4	Brass Lamps	20-Jul-09	Jade Antiques	Singapore	40	50	0.5903

SHIPMENT_ITEM

ShipmentID	ShipmentItemID	ItemID	Quantity	Value
4	1	4	40	$1,200.00
4	2	3	8	$9,500.00
4	3	2	75	$4,500.00

Write SQL statements and show the results based on the MDC data for each of the following:

1. Show all data in each of the tables.
2. List the ShipmentID, ShipperName, and ShipperInvoiceNumber of all shipments.
3. List the ShipmentID, ShipperName, and ShipperInvoiceNumber for all shipments with an insured value greater than 10000.
4. List the ShipmentID, ShipperName, and ShipperInvoiceNumber of all shippers whose name starts with “AB”.
5. Assume DepartureDate and ArrivalDate are in the format MM/DD/YY. List the ShipmentID, ShipperName, and ShipperInvoiceNumber and ArrivalDate of all shipments that departed in December.
6. Assume DepartureDate and ArrivalDate are in the format MM/DD/YY. List the ShipmentID, ShipperName, and ShipperInvoiceNumber and ArrivalDate of all shipments that departed on the 10th of any month.
7. Determine the maximum and minimum InsuredValue.

8. Determine the average InsuredValue.
9. Count the number of shipments.
10. Show ItemID, Description, Store, and a calculated column named StdCurrencyAmount that is equal to LocalCurrencyAmt times the ExchangeRate for all rows of ITEM_PURCHASE.
11. Group item purchases by City and Store.
12. Count the number of purchases having each combination of City and Store.
13. Show the ShipperName and DepartureDate of all shipments that have an item with a value of 1000 or more. Use a subquery. Present results sorted by ShipperName in ascending order and then DepartureDate in descending order.
14. Show the ShipperName and DepartureDate of all shipments that have an item with a value of 1000 or more. Use a join. Present results sorted by ShipperName in ascending order and then DepartureDate in descending order.

15. Show the ShipperName and DepartureDate of all shipments that have an item that was purchased in Singapore. Use a subquery. Present results sorted by ShipperName in ascending order and then DepartureDate in descending order.
16. Show the ShipperName and DepartureDate of all shipments that have an item that was purchased in Singapore. Use a join. Present results sorted by ShipperName in ascending order and then DepartureDate in descending order.
17. Show the ShipperName, DepartureDate of shipment, and Value for items that were purchased in Singapore. Use a combination of a join and a subquery. Present results sorted by ShipperName in ascending order and then DepartureDate in descending order.