**Lab 4-3: Linking Two Tables Using VLOOKUP for Relational Data in Excel**

**Master the Data:** Open the Excel file for Lab 4-3.

**Step 1:** Add a new column to the Sales\_Transactions table for the Product\_Description associated with every Product\_Code listed in the transactions table.

Navigate to the Sales\_Transactions spreadsheet. Add a new column to the right of the Product\_Sale\_Price named Product\_Description (cell H1). In cell H2, we will create a VLOOKUP Function.

**Step 2:** Because the ranges of data are not only formatted as tables, but also named properly, the VLOOKUP function should be relatively easy to follow: =VLOOKUP([@[Product\_Code]],Products,2,FALSE). Click Enter; the formula should copy all the way down, once again exhibiting the benefits of working with Excel tables instead of ranges.

**Step 3:**

1. Create a column titled Customer\_St in the Sales\_Transactions table. Use VLOOKUP to match the Customer\_ID from the Sales\_Transaction table to the Customer\_ID in the Customers table and pull in the data from the column containing Customer\_St.
2. Create a column titled Customer\_City. Use VLOOKUP to match the Customer\_ID from the Sales\_Transactions table to the Customer\_ID in the Customers table and pull in the data from the column containing Customer\_City.

**Step 4:** One of the benefits of using VLOOKUP functions to add descriptive attributes to the transactions table is to analyze the sales data more thoroughly using PivotTables. Create a PivotTable from the new Sales\_Transactions table. You may need to click Refresh from the Analyze tab on the ribbon to see the new attributes.

**Lab 4-4 Linking Tables in Excel using the Internal Data Model**

**Master the Data:** Open Excel File Lab 4-4 Data.xlsx.

In Lab 4-3, you created VLOOKUPs to bring descriptive attributes about the products and customers into the Sales\_Transactions table. An option is to build the relationships in Excel; this option is preferable if you want to be able to access all the attributes in any of the three tables.

**Step 1:** From the Data tab in the ribbon, click Relationships. In the window that pops up, click New.

The first relationship is between the Sales\_Transactions table and the Products table.

* Select Sales\_Transactions as the first table and Product\_Code as the foreign key.
* Then, select Products as the related table and Product\_Code as the primary key.
* Click OK to enforce the relationship (as shown in Exhibit 4.38).

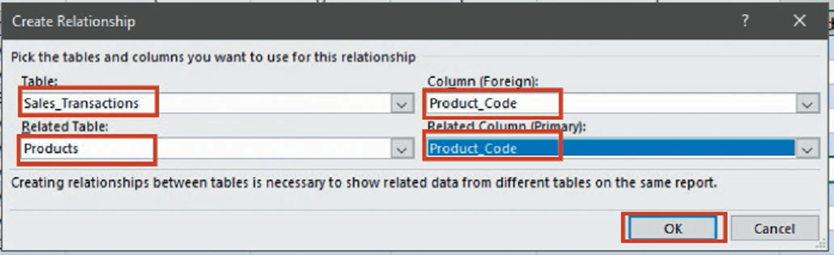


EXHIBIT 4.38

Click New… again to build the relationship between Sales\_Transactions and Customers. Follow similar steps as above, except this time relate Customer\_ID to Customer\_ID, and then click close in the Manage Relationships window.

While it doesn’t appear that anything special has occurred between the tables in Excel, once we create a pivottable, we will see a difference.

**Step 2:** From any of the tables, create a pivottable. In the box that pops up, make sure to place a check mark next to Add this Data to the Data Model, then click OK.

In the PivotTable field list, change your view to All, as shown in Exhibit 4.40. This will adjust the field list from only showing the fields from the active table to showing the fields from all three tables.

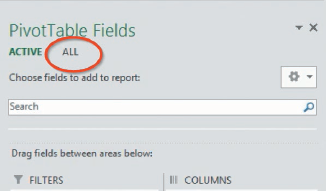


EXHIBIT 4.40

Step 3: Expand the Products table, and place a check mark next to Product\_Description. Next, expand the Sales\_Transactions table, and place a check mark next to Sales\_Order\_Quantity\_Sold. Then expand the Customers table, and place a check mark next to Customer\_St.

With these three fields in the pivottable, you have circumvented the need to use VLOOKUP to add the descriptive attributes to the Sales\_Transactions table, and you can pivot and analyze data from all three tables in the Excel workbook together.