Chapter 15 Problems

2. Victoria Ephanor manages a small product distribution company. Because the business is growing fast, she recognizes that it is time to manage the vast information pool to help guide the accelerating growth. Ephanor, who is familiar with spreadsheet software, currently employs a sales force of four people. She asks you to develop a data warehouse application prototype that will enable her to study sales figures by year, region, salesperson, and product. (This prototype will be used as the basis for a future data warehouse database.)

Using the data supplied in the **Ch13\_P2.xls** file, complete the following seven problems:

1. Identify the appropriate fact table components.

**Some components that should be included in the fact table include the common facts of units purchased and sold, costs of said units, the prices of said units, and the revenue being generated by the sales of said units. Additional facts could be profit, funding raised, loan amounts, and age of inventory.**

1. Identify the appropriate dimension tables.

**Dimensions can include the amount of sales per salesperson, the amount of sales per region, the amount of sales in a given period of time, and the amount of sales per product type.**

1. Draw a star schema diagram for this data warehouse.

Sales Fact

1. Identify the attributes for the dimension tables that will be required to solve this problem.

**Product Dimension: Product Type, Product Price, Product Code, Product QTY, Product Brand, Product Size**

**Time Dimension: Year, Month, Quarter, Week, Day**

**Region Dimension: Region name or code, State, City, Zip Code, Address, County**

**Salesperson: Name, Rank, Sales Amounts, Sales region, Education, Years of Experience**

1. Using Microsoft Excel or any other spreadsheet program that can produce pivot tables, generate a pivot table to show the sales by product and by region. The end user must be able to specify the display of sales for any given year. The sample output is shown in the first pivot table in Figure P13.2E.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Year | 2016 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Sum of Value | Region |  |  |  |  |  |
|  | Product | East | North | South | West | Grand Total |  |
|  | Balls |  |  | 259 |  | 259 |  |
|  | Erasers | 62 |  |  |  | 62 |  |
|  | Pencils |  |  |  | 145 | 145 |  |
|  | Widgets |  | 250 |  |  | 250 |  |
|  | Grand Total | 62 | 250 | 259 | 145 | 716 |  |
|  |  |  |  |  |  |  |  |

**CONTINUED BELOW**

1. Using Problem 2e as your base, add a second pivot table (see Figure P13.2E) to show the sales by salesperson and by region. The end user must be able to specify sales for a given year or for all years, and for a given product or for all products.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Year | (All) |  |  |  |  |  |
|  | Product | (All) |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Sum of Value | Region |  |  |  |  |  |
|  | Agent | East | North | South | West | Grand Total |  |
|  | Carlos | 95 | 150 | 30 | 25 | 300 |  |
|  | Mary |  | 60 | 125 | 145 | 330 |  |
|  | Tere | 12 | 100 | 160 | 100 | 372 |  |
|  | Victor | 55 | 20 | 259 |  | 334 |  |
|  | Grand Total | 162 | 330 | 574 | 270 | 1336 |  |
|  |  |  |  |  |  |  |  |

1. Create a 3D bar graph to show sales by salesperson, by product, and by region. (See the sample output in Figure P13.2G.)