



# Relational Databases: In Depth



In this activity, you will gather an in depth analysis of how relational databases work, the key components needed for companies and why they are so useful.

As you experienced in Lesson 1 relational databases store similar information into a single table and then relate it to other tables. Just as salespeople need information about their customers to make a sale, companies need additional information to track their inventory and profits.

Take a look at the tables below.

*Table A2-1: Company Information*

| Company Name                | Address                                | Phone        | E-mail                   | Sales Price Level |
|-----------------------------|--|--------------|--------------------------|-------------------|
| Bob's Gas                   | 135 Gas Lane<br>Boca Raton, FL         | 561-896-5285 | bobsgas@gmail.com        | \$5 per bottle    |
| Anne's Neighbor Supermarket | 258 Healthy Food Ct<br>Palm Beach, FL  | 561-847-2035 | annesmarket@yahoo.com    | \$3 per bottle    |
| All Things Wholesale        | 123 Wholesale Way<br>Boynton Beach, FL | 561-145-6789 | allwholesale@hotmail.com | \$2 per bottle    |
| Big Box Max Retailer        | 789 Max Retailer St<br>Jupiter, FL     | 561-478-9101 | bigmaxstore@gmail.com    | \$2 per bottle    |
| Mom & Pop Shop              | 901 Small Shop Blvd<br>Wellington, FL  | 561-789-4561 | momandpop@aol.com        | \$2.50 per bottle |

*Table A2-2: Company Contact Information*

| Company Name                | First & Last Name | Title                  | Birthday   | Phone        |
|-----------------------------|-------------------|------------------------|------------|--------------|
| Bob's Gas                   | Bob Sikorski      | Owner                  | 05/08/1980 | 561-896-5285 |
| Anne's Neighbor Supermarket | Hannah Martuna    | Logistics Manager      | 02/25/1986 | 561-847-2035 |
| All Things Wholesale        | Johanna Guarano   | Store Manager          | 06/19/1986 | 561-145-6789 |
| Big Box Max Retailer        | Maximilano Torres | Director of Operations | 05/12/1974 | 561-478-9101 |
| Mom & Pop Shop              | Jacob Kiense      | Owner                  | 08/07/1950 | 561-789-4561 |

Table A2-3: Product Information

| Item Number | Description     | Size/Weight              | Cost  | Warehouse Location |
|-------------|-----------------|--------------------------|-------|--------------------|
| 121         | Cherry soda     | 6 bottles per pack/ 8 oz | \$.50 | Bay E7             |
| 122         | Watermelon soda | 6 bottles per pack/ 8 oz | \$.80 | Bay F5             |
| 123         | Chocolate soda  | 6 bottles per pack/ 8 oz | \$.70 | Bay S9             |
| 124         | Apple soda      | 6 bottles per pack/ 8 oz | \$.60 | Bay E9             |
| 125         | Orange soda     | 6 bottles per pack/ 8 oz | \$.50 | Bay G2             |



Table A2-4: Employee Information

| Name             | Commission Rate | Social Security | Address                                      |
|------------------|-----------------|-----------------|--|
| John Doe         | 2%              | 458-57-5896     | 8989 Coconut Ave, West Palm Beach, FL        |
| Jane Morris      | 1%              | 123-45-6789     | 4565 SW 78 St, West Palm Beach, FL           |
| Katherine Monica | 1.5%            | 987-65-4321     | 1232 Frontier Ave, Lake Worth, FL            |
| Jackson Oneil    | 2%              | 258-36-9741     | 1474 Aussie Blvd, Boca Raton, FL             |
| Jason Hart       | 1.5%            | 147-25-8369     | 2585 Little Ranch Blvd, Royal Palm Beach, FL |

Table A2-5: Shipping Information

| Name                        | Address                             | Sales Tax | Freight Rate |
|-----------------------------|-------------------------------------|-----------|--------------|
| Bob's Gas                   | 135 Gas Lane Boca Raton, FL         | 6.5%      | \$200        |
| Anne's Neighbor Supermarket | 258 Healthy Food Ct Palm Beach, FL  | 6.5%      | \$100        |
| All Things Wholesale        | 123 Wholesale Way Boynton Beach, FL | 6.5%      | \$200        |
| Big Box Max Retailer        | 789 Max Retailer St Jupiter, FL     | 6.5%      | \$150        |
| Mom & Pop Shop              | 901 Small Shop Blvd Wellington, FL  | 6.5%      | \$100        |

**Instructions:** As you can see the information above has already been organized into tables and fields. Now, it's your turn to find the data that relates with another database.

1. Below, highlight the fields (columns in a database) that relate (or duplicate) in each database.
2. Identify which of the highlighted fields is your primary key and foreign key in the database. Draw a key  next to the primary key and a relationship  next to the foreign key.

| <b>Company's Information</b>                                   |
|--|
| Company Name<br>Address<br>Phone<br>Email<br>Sales Price Level |

| <b>Employee</b>                                       |
|---|
| Name<br>Commission Rate<br>Social Security<br>Address |

| <b>Product</b>  |
|---|
| Item Number<br>Description<br>Size/weight<br>Cost<br>Warehouse Location |

| <b>Company's Contact</b>  |
|---|
| Company Name<br>First & Last Name<br>Title<br>Birthday<br>Phone |

| <b>Shipping</b>                                      |
|--|
| Company Name<br>Address<br>Sales Tax<br>Freight Rate |

In your own words, describe a primary key in a database.

In your own words, describe a foreign key in a database.

3. Of course, the primary and foreign keys currently in place are somewhat unrealistic. It is not likely that a salesman will search a database off an address. If you could add a primary and/or foreign key, how would you organize this database more efficiently?

| <b>Company's Information</b>                                   |
|--|
| Company Name<br>Address<br>Phone<br>Email<br>Sales Price Level |

| <b>Employee</b>                                       |
|---|
| Name<br>Commission Rate<br>Social Security<br>Address |

| <b>Product</b>  |
|---|
| Item Number<br>Description<br>Size/weight<br>Cost<br>Warehouse Location |

| <b>Company's Contact</b>  |
|---|
| Company Name<br>First & Last Name<br>Title<br>Birthday<br>Phone |

| <b>Shipping</b>                                      |
|--|
| Company Name<br>Address<br>Sales Tax<br>Freight Rate |