

BASIC SQL AND BOOLEANS

1. The **contact table** has many different titles (e.g., "Mr." and "Mrs."). Which ones does it use?
One of the titles in the contact table is missing the period. Which title is this, and to whom does it belong (first name and last name)?
2. Select the first and last names of all contacts whose last name is 'Brown'. Order these contacts alphabetically by first name.
3. The contact table has a column called EmailPromotion. What kind of column is it?
(Remember how to describe or explain tables using SQL.)
4. Find the names of the contacts that have an EmailPromotion value of 2.
5. Find the names of the contacts whose last name is 'Brown' that have an EmailPromotion value of 2.
6. Find the names of the contacts whose last name is either 'Brown' or 'Black' that have an EmailPromotion value of 2.
 - a. Do this query using the Boolean OR operator
 - b. Do this query using an IN clause
7. Select the employee IDs and vacation hours from the **employee table** that have two weeks (80 hours) or more of vacation left. Order the IDs so that those with the **least** vacation are listed first.
8. Select the employee IDs that have more sick leave hours than vacation hours. Order the IDs so that those with the **most** vacation are listed first.
9. Select the employee IDs where the number of sick leave hours exceeds the number of vacation hours by more than 20 hours. Order the IDs so that those with the **most** vacation are listed first.
10. Select the employee IDs where the number of sick leave hours is between 20 and 40 inclusive
 - a. Do this query using the Boolean AND operator
 - b. Do this query using a BETWEEN clause
11. Display the employee IDs along with the number of sick leave hours, the number of vacation hours, and the sum of both which you should title "Total Hours" for employees that were hired prior to the year 2000.
12. Display the employee IDs and the hire dates for all the Vice Presidents and all the Chief Officers.
(Hint: Before starting, you might want to write a query to show you what the unique job titles are for Adventure Works Inc.)
13. Display all information about any employees that have no manager.
14. Display all female employees. Order the display by job title and within a job title by Adventure Works seniority.
(The most junior Adventure Works employees should be listed first.)

TABLE JOINS

15. Modify query 3 above to select the first and last names of all **employees** whose last name is 'Brown'. Order these employees alphabetically by first name.
16. Modify query 9 above to select the employee IDs, **first and last names** for employees that have more sick leave hours than vacation hours.
17. Use the **StateProvince** table and the **CountryRegion** table to display all of the states of the United States.
Assume you need the full country name to perform this query.
18. Now, also using the **Address** table, display the list of states for which Adventure Works has addresses on file.
19. Modify the query above to display the list of states for which Adventure Works does NOT have addresses on file.
(Hint, use an outer join.)

20. Display all female managers per the example below. Order the display by department and within department by Adventure Works seniority. (The most senior Adventure Works employees should be listed first.)

| Name | FirstName | LastName | Title | HireDate |
|----------------------|-----------|-------------------|------------------------------|---------------------|
| Finance | Wendy | Kahn | Finance Manager | 1999-01-26 00:00:00 |
| Human Resources | Paula | Barreto de Mattos | Human Resources Manager | 1999-01-07 00:00:00 |
| Information Services | Jean | Trenary | Information Services Manager | 1999-01-12 00:00:00 |

Do you notice something unusual about the results? What is going on?

21. Modify the above query
- First add in the column EndDate.
 - Then modify the query to reflect the managers' current jobs only.
22. List the first name and last name of all the contacts whose last name is 'Brown' that are **not** employees of Adventure Works.
23. Select the first name, last name, shift, and city of residence for all employees who ever worked in the Sales department.
24. Repeat the query above, but add in the state or province name, and the country name.
25. Select the name and title of Eric Brown's first-level boss, and the name and title of his second-level boss.
26. **CHALLENGE QUESTION.**

To do this optional challenge, you will need a local installation of AdventureWorks.

The AdventureWorks HR department is incredibly accurate and has perfect address records. However, what would have happened to the query above if some of the oldest employees did not have their home addresses in the database? Would the historical list of people in the Sales department have been accurate then?

This demonstrates the importance of knowing the rules of your database. In this case, one would have to know whether there is an address record for every employee before being sure of the query results.

In MySQL Workbench, run this query:

```
SELECT * FROM adventureworks.employeeaddress WHERE EmployeeID IN (28,288);
```

Modify employee ID 288 to 28, and press Apply, Update and Finish. Now you have changed how the tables work together. Employee 28 has two addresses on file, and Employee 288 has none. Rerun query 25. Note that Syed Abbas is no longer listed in the display of data. Modify query 25 so that we can see Syed's name appear.

CLEANUP: Please reset Syed back, so the rows in EmployeeAddress look like this:

| EmployeeID | AddressID |
|------------|-----------|
| 28 | 270 |
| 288 | 3 |