Module 5
Extended Query Formulation with SQL
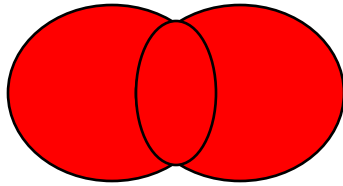
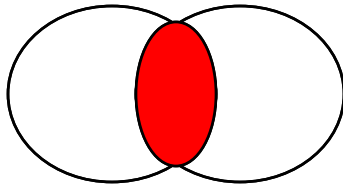## Lesson 4: SQL SET Operators

Lesson Objectives

- Briefly explain the union compatibility requirement and row matching

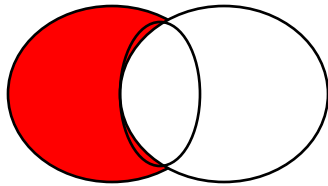- Write SQL SELECT statements using the UNION operator
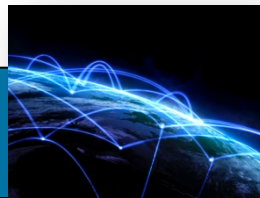
# Traditional Set Operators

A UNION B

A INTERSECT B

A MINUS B

Business School
UNIVERSITY OF COLORADO **DENVER**

Information Systems Program

# Union Compatibility

- Requirement for the traditional set operators

- Strong requirement

  - Same number of columns

  - Each corresponding column is compatible

  - Positional correspondence

- Apply to similar tables by removing columns first
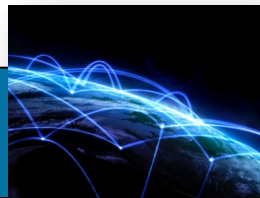
SQL UNION Example

Example 1: Retrieve basic data about all university people
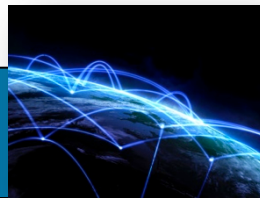
```
SELECT FacNo AS PerNo, FacFirstName AS FirstName,
       FacLastName AS LastName, FacCity AS City,
       FacState AS State
 FROM Faculty
       UNION
SELECT StdNo AS PerNo, StdFirstName AS FirstName,
       StdLastName AS LastName, StdCity AS City,
       StdState AS State
 FROM Student;
```
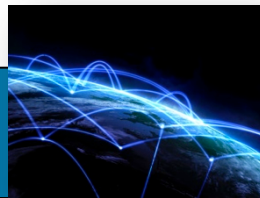
Oracle INTERSECT Example

Example 2 (Oracle): Show teaching assistants, faculty who are students. Only show the common columns in the result.

```
SELECT FacNo AS PerNo, FacFirstName AS
       FirstName, FacLastName AS LastName,
       FacCity AS City, FacState AS State
 FROM Faculty
    INTERSECT
SELECT StdNo AS PerNo, StdFirstName AS
       FirstName, StdLastName AS LastName,
       StdCity AS City, StdState AS State
 FROM Student;
```

Oracle MINUS Example

Example 3 (Oracle): Show faculty who are <u>not</u> students (only faculty). Only show the common columns in the result.

```
SELECT  FacNo AS PerNo, FacFirstName AS
        FirstName, FacLastName AS LastName,
        FacCity AS City, FacState AS State
 FROM Faculty
    MINUS
SELECT StdNo AS PerNo, StdFirstName AS
        FirstName, StdLastName AS LastName,
        StdCity AS City, StdState AS State
 FROM Student;
```
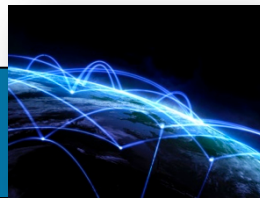
Summary

- Traditional set operators are not common in queries

- Must have union compatible tables to apply the traditional set operators

- Some usage of UNION in business intelligence queries