# COMP 430 Assignment 3 (Part 1)

Complete the problems in this document. Submit a PDF document with your answers.

These problems are not in a Jupyter Notebook because we want you to solve the problems without using SQL.

1. (30 points – 5 points each join) We have two tables below: Company (left) and Employee (right). For the pair, show each of the following.
   1. Inner, left outer, right outer, and full outer joins ON Company.id = company\_id
   2. Natural inner and cross joins

**Employee**

|  |  |  |
| --- | --- | --- |
| **Id** | **name** | **company\_id** |
| **2** | **Joe** | **3** |
| **3** | **Mary** | **1** |
| **4** | **Elizabeth** | **5** |
| **5** | **John** | **7** |

**Company**

|  |  |  |
| --- | --- | --- |
| **id** | **name** | **state** |
| **1** | **ThisCo** | **CA** |
| **3** | **ThatCo** | **TX** |
| **5** | **TheOtherCo** | **KS** |
| **8** | **AnotherCo** | **OK** |

inner

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **id** | **Name** | **state** | **id** | **name** | **company\_id** |
| **1** | **ThisCo** | **CA** | **3** | **Mary** | **1** |
| **3** | **ThatCo** | **TX** | **2** | **Joe** | **3** |
| **5** | **TheOtherCo** | **KS** | **4** | **Elizabeth** | **5** |

left outer,

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **id** | **Name** | **state** | **id** | **name** | **company\_id** |
| **1** | **ThisCo** | **CA** | **3** | **Mary** | **1** |
| **3** | **ThatCo** | **TX** | **2** | **Joe** | **3** |
| **5** | **TheOtherCo** | **KS** | **4** | **Elizabeth** | **5** |
| **8** | **AnotherCo** | **OK** | null | null | Null |

right outer

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **id** | **Name** | **state** | **id** | **name** | **company\_id** |
| **1** | **ThisCo** | **CA** | **3** | **Mary** | **1** |
| **3** | **ThatCo** | **TX** | **2** | **Joe** | **3** |
| **5** | **TheOtherCo** | **KS** | **4** | **Elizabeth** | **5** |
| Null | Null | null | **5** | **John** | **7** |

full outer joins

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **id** | **Name** | **state** | **id** | **name** | **company\_id** |
| **1** | **ThisCo** | **CA** | **3** | **Mary** | **1** |
| **3** | **ThatCo** | **TX** | **2** | **Joe** | **3** |
| **5** | **TheOtherCo** | **KS** | **4** | **Elizabeth** | **5** |
| **8** | **AnotherCo** | **OK** | null | null | Null |
| Null | Null | null | **5** | **John** | **7** |

Natural inner

|  |  |  |  |
| --- | --- | --- | --- |
| **id** | **name** | **state** | **company\_id** |

**Cross join**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **id** | **Name** | **state** | **id** | **name** | **company\_id** |
| **1** | **ThisCo** | **CA** | **2** | **Joe** | **3** |
| **1** | **ThisCo** | **CA** | **3** | **Mary** | **1** |
| **1** | **ThisCo** | **CA** | **4** | **Elizabeth** | **5** |
| **1** | **ThisCo** | **CA** | **5** | **John** | **7** |
| **3** | **ThatCo** | **TX** | **2** | **Joe** | **3** |
| **3** | **ThatCo** | **TX** | **3** | **Mary** | **1** |
| **3** | **ThatCo** | **TX** | **4** | **Elizabeth** | **5** |
| **3** | **ThatCo** | **TX** | **5** | **John** | **7** |
| **5** | **TheOtherCo** | **KS** | **2** | **Joe** | **3** |
| **5** | **TheOtherCo** | **KS** | **3** | **Mary** | **1** |
| **5** | **TheOtherCo** | **KS** | **4** | **Elizabeth** | **5** |
| **5** | **TheOtherCo** | **KS** | **5** | **John** | **7** |
| **8** | **AnotherCo** | **OK** | **2** | **Joe** | **3** |
| **8** | **AnotherCo** | **OK** | **3** | **Mary** | **1** |
| **8** | **AnotherCo** | **OK** | **4** | **Elizabeth** | **5** |
| **8** | **AnotherCo** | **OK** | **5** | **John** | **7** |