

## **DAD 220 Cardinality and Targeted Data Template**

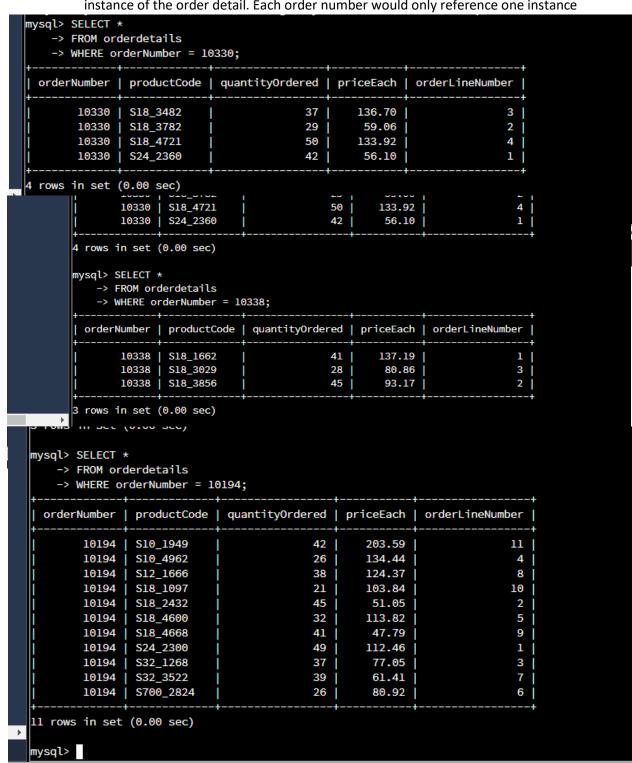
Replace the bracketed text in this template with your screenshots and responses. Then submit it to the Module Four Lab for submission, grading, and feedback. Screenshots should be sized to approximately one quarter of a page. Written responses should be in complete sentences. Rename this document by adding your last name to the file name before you submit.

1. **Retrieve employee tuples and identify the number of employees** in San Francisco and New York.

```
mysql> SELECT firstName, lastName, jobTitle, offices.city
    -> FROM employees
    -> INNER JOIN offices
    -> ON employees.officeCode = office.officeCode
    -> WHERE state = 'NY';
ERROR 1054 (42S22): Unknown column 'office.officeCode' in 'on clause'
mysql> SELECT firstName, lastName, jobTitle, offices.city
    -> FROM employees
    -> INNER JOIN offices
    -> ON employees.officeCode = offices.officeCode
    -> WHERE state = 'NY';
  firstName |
             lastName | jobTitle
  Foon Yue
             Tseng
                        Sales Rep
  George
             Vanauf
                         Sales Rep |
2 rows in set (0.00 sec)
mysql> SELECT firstName, lastName, jobTitle, offices.city
   -> FROM employees
   -> INNER JOIN offices
   -> ON employees.officeCode = offices.officeCode
    -> WHERE state = 'CA';
 firstName | lastName
                        | jobTitle
                                              city
 Diane
             Murphy
                          President
                                              | San Francisco
                          VP Sales
                                                San Francisco
              Patterson
 Mary
 Jeff
              Firrelli
                          VP Marketing
                                               San Francisco
                          Sales Manager (NA)
 Anthony
              Bow
                                               San Francisco
 Leslie
              Jennings
                          Sales Rep
                                                San Francisco
 Leslie
             Thompson
                        | Sales Rep
                                                San Francisco
6 rows in set (0.00 sec)
mysql>
```



- I used the SELECT statement to get the proper info that was needed to be displayed. I did make an error when doing the NY table because I had accidently typed 'office.officeCode' instead of 'offices.officeCode', this was corrected! I used the WHERE statement to distinguish which city would be shown on the table
- 2. **Retrieve order details** for orderNumber 10330, 10338, and 10194 and **identify** what **type of cardinality** this represents in the entity relationship model.
  - a. The cardinality that this represents is ZERO-ONE because there could be no *or* only one instance of the order detail. Each order number would only reference one instance





3. Delete records from the payments table where the customer number equals 103.

```
mysql> SELECT *
   -> FROM payments
   -> WHERE customerNumber = 103;
 customerNumber
                 | checkNumber | paymentDate | amount
             103
                  HQ336336
                                 2004-10-19
                                                 6066.78
                                               14571.44
             103
                   JM555205
                                 2003-06-05
             103
                  OM314933
                                 2004-12-18
                                                 1676.14
3 rows in set (0.00 sec)
mysql>
```

Here is the table before it was deleted, I used the SELECT statement ^

```
2003-06-05
             103
                  OM314933
                                 2004-12-18
                                                1676.14
3 rows in set (0.00 sec)
mysql> DELETE FROM payments
   -> WHERE customerNumber = 103;
Query OK, 3 rows affected (0.05 sec)
mysql> SELECT &
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds
to your MySQL server version for the right syntax to use near '&' at line 1
mysql> SELECT *
   -> FROM payments
    -> WHERE customerNumber = 103;
Empty set (0.00 sec)
```

Here, I accidentally typed 'SELECT &' instead of 'SELECT \*', I fixed this with the proper statement and displayed that the customerNumber of 103 has been deleted, here you can see it say "Empty set"

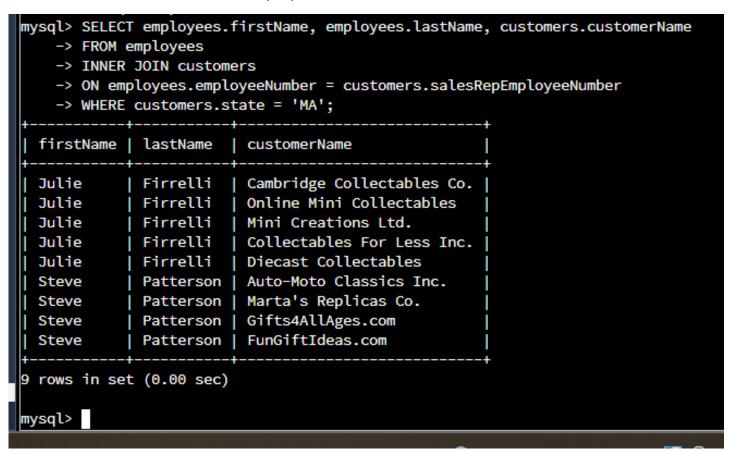


- 4. **Retrieve customer records** for sales representative Barry Jones and **identify** if the **relationships** are one-to-one or one-to-many.
  - The relationship is ONE-MANY because Barry Jones is one employee, but handles customers

```
mysql> SELECT *
    -> FROM employees
   -> INNER JOIN customers
   -> ON employees.employeeNumber = customers.salesRepEmployeeNumber
   -> WHERE employees.employeeNumber = 1504;
                                                                              | officeCode | reportsTo | jobTitle | customerNumber | customerName
| employeeNumber | lastName | firstName | extension | email
                 | contactLastName | contactFirstName | phone
                                                                        addressLinel
                                                                                                addressLine2
                                                                                                                city
                                                                                                                            | state | postalCode | co
untry | salesRepEmployeeNumber | creditLimit |
                                                 | bjones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                                                                                                                              121 | Baane Mini Import
                                                    07-98 9555
                                                                                                                                   | 4110
                 | Bergulfsen
                                  Jonas
                                                                        | Erling Skakkes gate 78 | NULL
                                                                                                                 Stavern
                                                                                                                            NULL
                         1504
                                   81700.00
                                                 | bjones@classicmodelcars.com | 7
           1504 | Jones
                          Barry
                                      | x102
                                                                                                 1102 | Sales Rep |
                                                                                                                              128 | Blauer See Auto,
                 | Keitel
                                  Roland
                                                                                                                 | Frankfurt | NULL
                                                    | +49 69 66 90 2555 | Lyonerstr. 34
Co.
                                                                                                NULL
                                                                                                                                    60528
                                                                                                                                                Ge
                         1504
rmany
                                   59700.00
                                                                                                                              144 | Volvo Model Repli
           1504 | Jones
                                  | x102
| Christina
                                                 | biones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                          Barry
                                                                                                                 | Luleå
                                                                        | Berguvsvägen 8
                 | Berglund
                                                    0921-12 3555
                                                                                                                                   S-958 22 Sw
cas, Co
                                                                                                NULL
                                                                                                                            NULL
eden
                         1504
                                   53100.00 |
           1504 | Jones
                                     x102
                                                 | bjones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                                                                                                                              167 | Herkku Gifts
                          Barry
                                                                        | Brehmen St. 121
                 0eztan
                                  Veysel
                                                    +47 2267 3215
                                                                                                | PR 334 Sentrum | Bergen
                                                                                                                                   N 5804
                                                                                                                                                No
                         1504
                                   96800.00
rway
                                                 | bjones@classicmodelcars.com | 7
           1504 | Jones
                          Barry
                                                                                                 1102 | Sales Rep |
                                                                                                                              189 | Clover Collection
                                                                        | 25 Maiden Lane
  Co.
                Cassidy
                                                    +353 1862 1555
                                                                                                | Floor No. 4 | Dublin
                                                                                                                            NULL 2
                                                                                                                                                | Ir
                                   69400.00
eland
                         1504
                                     | x102
                          Barry
           1504 Jones
                                                 | bjones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                                                                                                                              259 | Toms Spezialitäte
n, Ltd
                                                                                                                 | Köln
                                                                                                                                                | Ge
                 | Pfalzheim
                                  | Henriette
                                                     0221-5554327
                                                                        | Mehrheimerstr. 369
                                                                                                 NULL
                                                                                                                            I NULL
                                                                                                                                    50739
                         1504
                                  120400.00
rmany |
                                                                                                1102 | Sales Rep |
| PB 211 Sentrum | Oslo
           1504 | Jones
                                                 | bjones@classicmodelcars.com | 7
                                                                                                                              299 | Norway Gifts By M
                          Barry
                                      x102
                 | Klaeboe
                                                                        | Drammensveien 126A
ail. Co.
                                                    +47 2212 1555
                                  l Jan
                                                                                                                             I NULL
                                                                                                                                   N 0106
                                                                                                                                                No
                         1504
                                   95100.00
rway
           1504 | Jones
                                                 | bjones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                                                                                                                              415 | Bavarian Collecta
                          Barry
                                      x102
                                  Michael
bles Imports, Co. | Donnermeyer
                                                    +49 89 61 08 9555 | Hansastr. 15
                                                                                                                 Munich
                                                                                                                                   80686
                                                                                                                                                Ge
                                   77000.00 |
rmany
           1504 | Jones
                                     | x102
                                                  | bjones@classicmodelcars.com | 7
                                                                                                 1102 | Sales Rep |
                                                                                                                              448 | Scandinavian Gift
                          Barry
                                                                                                                 Bräcke
Ideas
                                  Martha
                                                                        Åkergatan 24
                                                                                                                                   S-844 67 Sw
                                                                                                                            NULL
                          1504
                                  116400.00
9 rows in set (0.00 sec)
```

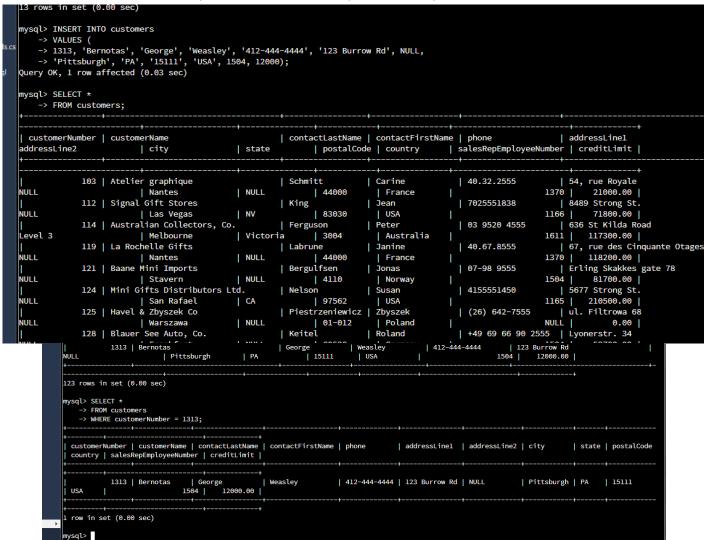


- 5. **Retrieve records** for customers who reside in Massachusetts and **identify their sales rep and the relationship of entities**. Identify if these entities demonstrate one-to-one or many-to-many relationships.
  - a. The relationship is MANY-MANY because each Rep has many customers and each customer can have many Reps





6. **Add one customer record** with your last name using an INSERT statement. You may use the name of a celebrity or fictional character if you don't use your own name.



I used my last name and a fictional name from Harry Potter, "George Weasley", I took two screenshots just so that you could see it was for sure added!



## 7. Reflection

- a. **Define how cardinality is applied** to the databases you've been working with and why different numbers of records returned from the different offices.
  - i. Cardinality is applied to databases to help represent a relationship between tables. In this database specifically, cardinality was used to determine the relationship between customer and employee. It kept track of which customers were represented by which representative. There were different numbers of records returned from different offices because of the MANY-MANY relationship. One Rep can have many customers, so there would be more than one record under that representatives office, same way vise versa as a customer could have many representatives.
- b. **Compare and contrast** the different **queries** you ran and how cardinality applies to them.
  - i. I ran a few different queries but the most common ones were a SELECT statement and an INNER JOIN. SELECT and INNER JOIN applies to cardinality because it allows the use of special syntax to pull from two, or more, tables at once. This is what allows us to see the relationship between tables. When creating the table, the most important part of incorporating cardinality is by using keys. Especially with the FOREIGN KEY, which was used in the database, this allows us to reference another column from a separate table, all while keeping the information.
- c. **Describe two** of the crucial **benefits of cardinality** in this type of database.
  - i. When having a database that is keeping track of customer orders, products, etc. Using cardinality is a major benefit because it allows organization among order numbers, products, and who is handling a specific customer. Distinguishing the relationship among the employees and customers allows orders to not get lost as easily. This linking of relationship to table to table puts everything in a structured manner.
  - ii. Another major benefit of cardinality in this database is allowing the user to search for data very easily. Accessing data in a database that is using cardinality makes it much easier to access. This way you do not have to physically match employee ID and order numbers yourself, but can separate it through the system much faster and more efficiently.