**Valerie Dandar – Week 10 – SQL Drills**

1. Cartesian Joins

a) Number of rows =250

b) The query SELECT \* FROM table\_one, table\_two:

|  |  |
| --- | --- |
| 1 | 10 |
| 1 | 11 |
| 1 | 12 |
| 2 | 10 |
| 2 | 11 |
| 2 | 12 |
| 3 | 10 |
| 3 | 11 |
| 3 | 12 |
| 4 | 10 |
| 4 | 11 |
| 4 | 12 |

1. Foreign Keys
   1. Employees table with Employee\_ID, First\_Name, Last\_Name, Dept\_ID, Department Name
   2. Departments table with ID

It’s possible that both tables have more records for both more employees and other departments, but this is only asking for dept 45, thus the only results returned.

1. ACID
   1. ACID stands for Atomicity, Consistency, Isolation, and Durability. A database system maintains these properties in order to ensure the integrity of data during a transaction.
   2. I liked the following example I found online which I think is actually a really straightforward way to demonstrate this concept: <https://beginnersbook.com/2015/04/acid-properties-in-dbms/>
2. Case

Select animal\_name, species

CASE

When animal\_name = ‘Mickey Mouse’ THEN species= ‘mouse’

When animal\_name = ‘Donald Duck’ THEN species= ‘duck’

Else ‘unknown species’

End

FROM disney\_table

1. Index

The CREATE INDEX statement is used to create indexes in tables. Indexes are used to retrieve data from the database more quickly than otherwise. The users cannot see the indexes, they are just used to speed up searches/queries.

There are different types of indexes—clustered and nonclustered.

* Clustered indexes sort and store the data rows in the table or view based on their key values. These are the columns included in the index definition. There can be only one clustered index per table, because the data rows themselves can be stored in only one order.
* Nonclustered indexes have a structure separate from the data rows. A nonclustered index contains the nonclustered index key values and each key value entry has a pointer to the data row that contains the key value.