

```
CREATE TABLE Retailer ( retailerName VARCHAR(255), retailerAddress  
VARCHAR(255) DEFAULT NULL, PRIMARY KEY (retailerName) );
```

```
CREATE TABLE Brand ( brandName VARCHAR(255), productCount INT DEFAULT 0,  
PRIMARY KEY (brandName) );
```

```
CREATE TABLE Product ( productId INT, productName VARCHAR(255), productUrl  
VARCHAR(255), brandName VARCHAR(255), PRIMARY KEY (productId), FOREIGN  
KEY (brandName) REFERENCES Brand(brandName) ON DELETE SET NULL ON  
UPDATE CASCADE );
```

```
CREATE TABLE Price ( productId INT, retailerName VARCHAR(255), price DOUBLE,  
FOREIGN KEY (productId) REFERENCES Product(productId) ON DELETE CASCADE  
ON UPDATE CASCADE, FOREIGN KEY (retailerName) REFERENCES  
Retailer(retailerName) ON DELETE CASCADE ON UPDATE CASCADE );
```

```
CREATE TABLE User ( username VARCHAR(255), password VARCHAR(255),  
PRIMARY KEY (username) );
```

SQL Query 1:

```
SELECT Product.ProductId, Avg(Price) as avgPrice FROM Product LEFT JOIN Price  
ON Product.ProductId=Price.ProductId GROUP BY ProductId ORDER BY avgPrice  
DESC LIMIT 15
```

```
mysql> SELECT Product.ProductId, Avg(Price) as avgPrice FROM Product LEFT JOIN Price ON Product.ProductId=Price.ProductId GROUP BY ProductId ORDER BY avgPrice DESC LIMIT 15;
```

ProductId	avgPrice
648	13288.81
26171	12295.81
14975	7900
3631	7900
5867	7898.9
19440	7800
1180	7800
28473	6249.9
28375	6197
29507	5990
5853	5990
10038	5990
15997	5990
21037	5949.9
28028	5046

```
15 rows in set (0.09 sec)
```

The above query returns the average price of each product in the database over all retailers.

SQL Query 2:

```
SELECT Price.retailerName, Avg(Price) as avgPrice FROM Price WHERE  
retailerName="Walmart" UNION SELECT Price.retailerName, Avg(Price) as avgPrice  
FROM Price WHERE retailerName="Target"
```

```
mysql> SELECT Price.retailerName, Avg(Price) as avgPrice FROM Price WHERE retailerName="Walmart" GROUP BY retailerName UNION SELECT retailerName, Avg(Price) as avgPrice FROM Price WHERE retailerName="Target" GROUP BY retailerName;
+-----+
| retailerName | avgPrice |
+-----+
| Walmart     | 70.93429985966614 |
+-----+
1 row in set (0.04 sec)
```

The above query returns the average price of all products in several retailers unioned together. There is only one row since the only data we have is from Walmart at the moment.

```
mysql> SELECT COUNT(*) FROM Brand;
+-----+
| COUNT(*) |
+-----+
|      10227 |
+-----+
1 row in set (0.01 sec)

mysql> SELECT COUNT(*) FROM Retailer;
+-----+
| COUNT(*) |
+-----+
|         1 |
+-----+
1 row in set (0.01 sec)

mysql> SELECT COUNT(*) FROM Price;
+-----+
| COUNT(*) |
+-----+
|      30001 |
+-----+
1 row in set (0.00 sec)

mysql> SELECT COUNT(*) FROM Products;
ERROR 1146 (42S02): Table 'khanh_new.Products' doesn't exist
mysql> SELECT COUNT(*) FROM Product;
+-----+
| COUNT(*) |
+-----+
|      30001 |
+-----+
1 row in set (0.01 sec)
```

The above shows the row count for each table in our database.

```
mysql> everettyang@cloudshell:~ (inventaggies)$ gcloud sql connect produce-database --user=root
Allowlisting your IP for incoming connection for 5 minutes...done.
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 19265
Server version: 8.0.26-google (Google)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> Show Database;
```

The above is the connection to our database server.