SQL Careers Assessment

Question 1

Take a look at the example query. Which is an accurate description of the results of the following query?

```
#standardSQL
SELECT
date,
COUNT (DISTINCT visitId) as num_records,
SUM(totals.visits) as num_visits,
SUM(totals.hits) num_hits,
AVG(totals.pageviews) average_page_views,
AVG(totals.transactions) average_transactions,
SUM(totals.totalTransactionRevenue) total_revenue
FROM `bigquery-public-data.google_analytics_sample.ga_sessions*`
GROUP BY date
ORDER BY date
```

Answers

A. **Retrieves web analytics data from a data warehouse that stores web analytics from Google for a commercial website**

B. Adds website transaction data to a database

C. Guesses how many visits this website will have next month

Responses

A. Correct! This is an example of retrieving Google analytics for a data warehouse stored in BigQuery. Let's learn more about this in the section on marketing and analytics.

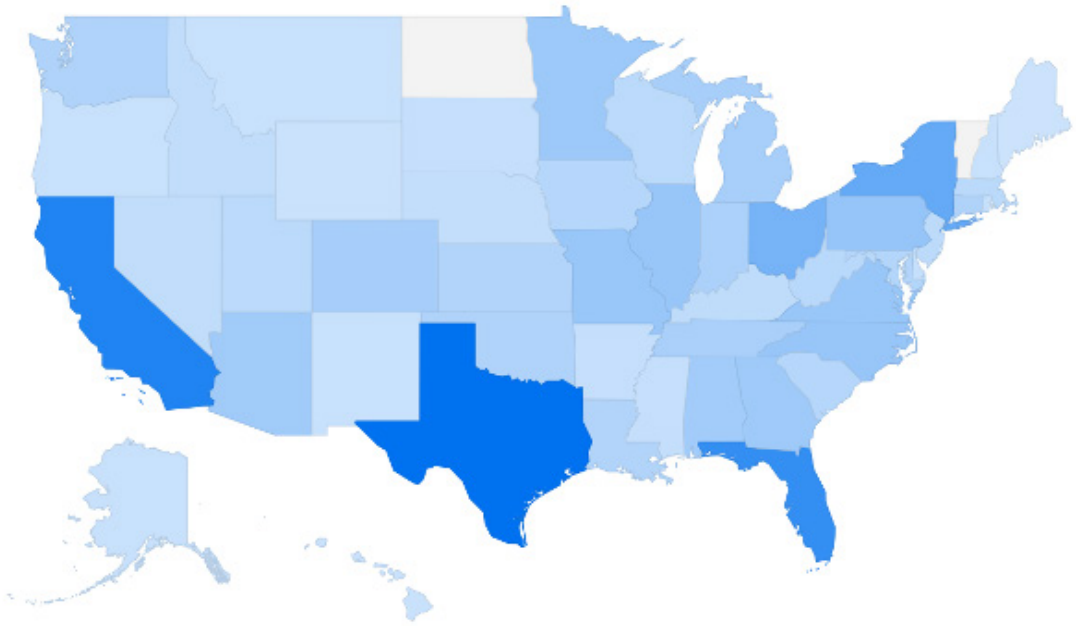
B. This is actually an example of retrieving Google analytics for a data warehouse stored in BigQuery. Let's learn more about this in the section on marketing and analytics.

C. This is actually an example of retrieving Google analytics for a data warehouse stored in BigQuery. Let's learn more about this in the section on marketing and analytics.

Question 2

True or false: Can the following code help populate the data used for the data visualization below?

```
select city, state, count(CustomerID) as num_customers
from `sql-careers.HPlusSports.customer`
group by city, state
```



Answers

A. True

B. False

Responses

A. Correct! This code helps to select data to drive the visualization in Google Data Studio. If you'd like to learn more about SQL and data visualization, let's learn more in the section on marketing and analytics.

B. This code does help drive a data visualization in Google Data Studio. If you'd like to learn more about SQL and data visualization, let's learn more in the section on marketing and analytics.

Question 3

What type of information does the following query provide?

```
SELECT
SUMMARY_1.MEASURE as MEASURE,
ST_DEV,
AVERAGE_TOTAL_ORDER,
MIN_TOTAL_DUE,
PERCENTILE_25,
MEDIAN,
PERCENTILE_75,
MAX_TOTAL_DUE

FROM
(SELECT 'TotalDue' as MEASURE, stddev(TotalDue) as ST_DEV,
    avg(TotalDue) as AVERAGE_TOTAL_ORDER,
    max(TotalDue) as MAX_TOTAL_DUE,
    min(TotalDue) as MIN_TOTAL_DUE
 from `sql-careers.HPlusSports.orders`) as SUMMARY_1,

(SELECT 'TotalDue' as MEASURE, PERCENTILE_CONT(TotalDue, 0.25) OVER () AS PERCENTILE_25,
PERCENTILE_CONT(TotalDue, 0.5) OVER () AS MEDIAN, PERCENTILE_CONT(TotalDue, 0.75) OVER () AS
PERCENTILE_75
FROM
 (SELECT TotalDue FROM `sql-careers.HPlusSports.orders`) as Total
LIMIT
 1) AS SUMMARY_2
 WHERE SUMMARY_1.MEASURE = SUMMARY_2.MEASURE
```

Answers

A. Adds the order summary data to the orders table

B. Shows various descriptive statistics, including average, standard deviation, median, and percentiles of the variable TotalDue on the orders table

C. I have no clue; I'm completely new to SQL

Responses

A. This query doesn't add the data to the table, but we can do that in a different way. Let's take a look at the section on descriptive and predictive analytics to see how this code can be useful in various fields.

B. Correct! This code is an example of descriptive analytics that can be performed in SQL. Take a look at the section on descriptive and predictive analytics to see how this code can be useful in various fields.

C. No worries! You are in the right place. Take a look at the section on descriptive and predictive analytics to see how this code can be useful in various fields.

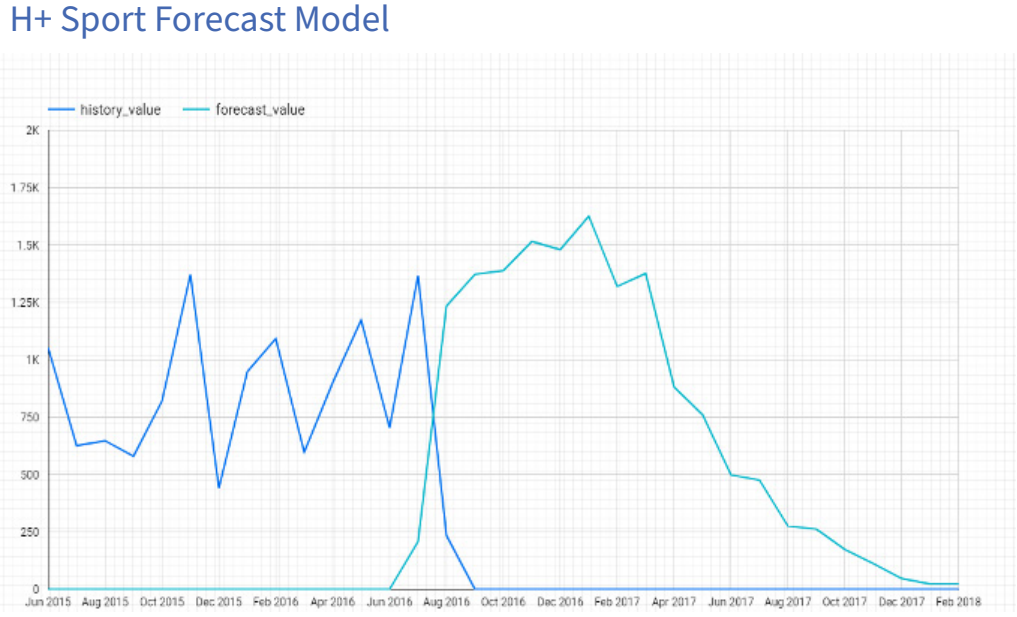
Question 4

Take a look at the following query. What type of results would you expect from the following code sample and visualization?

```
CREATE OR REPLACE MODEL HPlusSports.forecast_model

OPTIONS(
 MODEL_TYPE='ARIMA',
 TIME_SERIES_TIMESTAMP_COL='OrderDate',
 TIME_SERIES_DATA_COL='total_products_sold',
 TIME_SERIES_ID_COL='ProductCode',
 HOLIDAY_REGION='US'
) AS

SELECT OrderDate, ProductCode,total_products_sold
FROM `sql-careers.HPlusSports.forecast_training_data`
```



Answers

A. Creates a table to store predictions made from other software

B. Shows historical data about the number of products sold

C. Creates a model to make predictions on total products sold

Responses

D. Close! The code will create a model that will store predictions directly from SQL instead of using outside software. Check out the section on predictive analytics with SQL to learn more.

E. Close! The historical data is already stored in the database and this code uses that data to make future predictions. Check out the section on predictive analytics with SQL to learn more.

F. Correct! The code will create a model that will store predictions directly from SQL using BiqQuery ML. Check out the section on predictive analytics with SQL to learn more.

Question 5

Take a look at the following code sample. What type of results would you expect to see?

```
def get_customers():
    conn = open_connection()
    with conn.cursor() as cursor:
        sql = 'SELECT * FROM customers LIMIT 50;'
        result = cursor.execute(sql)
        customers = cursor.fetchall()

        if result > 0:
            customers_json = jsonify(customers)
        else:
            customers_json = 'No Customers in the Database'
    conn.close()
    return customers_json
```

Answers

A. **Retrieves the first 50 customer records from the database and return a JSON file**

B. Adds 50 new customer records to the database

C. Exports customer records to an Excel spreadsheet

Responses

A. Correct! The code sample demonstrates a call to MySQL in Python to retrieve customer records. Learn more about SQL in web development in the section on engineering and administration.

B. Not yet, although we can add customer records from a web app using SQL. Learn more about SQL in web development in the section on engineering and administration.

C. Although you can export SQL results to Excel, that's not part of this code. The code sample demonstrates a call to MySQL in Python to retrieve customer records. Learn more about SQL in web development in the section on engineering and administration.

Question 6

True/false: The following screen shows an iPhone app with customer data. You can import customer data to a mobile device, but the database has to be stored in another text file format, not a relational database.

Answers

A. True

B. False

Responses

A. There may be instances where you want to store your data in another type of database, but you can definitely still store it in a relational database. Check out the engineering and administration section on using SQLite in mobile development.

B. Correct! Let's look at how you can incorporate SQLite into mobile application development in the section on engineering and administration.

Question 7

Data engineering involves ETL processes. ETL stands for

Answers

A. Export Transfer Language

B. Extract, Transform, and Load

C. Ecommerce, Transportation, and Locations

Responses

A. Data engineers help organizations extract, translate, and load data from one source to another. Check out the section on data engineering to see examples and learn a little about data engineers.

B. Correct! Data engineers help organizations extract, transform, and load data from one source to another. Check out the section on data engineering to see examples and learn a little about data engineers.

C. Data engineers help organizations extract, translate, and load data from one source to another. Check out the section on data engineering to see examples and learn a little about data engineers.

Question 8

True/false: Database administrators are responsible for troubleshooting the database management system, along with supporting the hardware and software related to both the database and server where the database is located.

Answers

A. True

B. False

Responses

A. Correct! Database administrators are responsible for troubleshooting the database management system, along with supporting the hardware and software related to both the database and server where the database is located. Learn more about where you can apply SQL language in database administration in the section on engineering and administration.

B. Database administrators are responsible for troubleshooting the database management system, along with supporting the hardware and software related to both the database and server where the database is located. Learn more about where you can apply SQL language in database administration in the section on engineering and administration.