Total time - 2.5 hours

Total marks - 100

Parts - there are two parts to the test - each with 50 marks. Part 1 test your ability to answer specifc questions visually. Part 2 tests you ability to understand the data set and design & develop a dashboard showing important insights. Both parts have an individual cut off. Please keep a separate dashboard / worksheet for each part.

Dataset - there are two datasets for this test. Please use both the datasets as needed. You can make changes to the data sets manually as well as needed. Do not merge the data sets manually. Please keep them separate. Data is self explanatory and does not need a dictionary. One expalnation - the US is divided into multiple regions and some data manipulation may be needed to answer some of the questions in Part 1.

Submission - please submit a PBIX / TWBX file and the data sets, in case you have chosen to manually modify them.

Part 1 - (45 Marks)

(a) Showcase year on year violent rate showing both the absolute change and percentage change. ( 5 marks )

(b) Showcase the different types of crimes in the different regions of the country. ( 10 marks )

(c) Create a state wise choropleth map for the total crimes. Allow user to choose the type of crime - one or multiple. ( 10marks )

(d) Showcase how the composition of total crimes has changed over the years. ( 10 marks )

(e) Allow the user to compare between violent and property crimes over the years in different regions of the country. ( 10 marks )

Part 2 -

Design a dashboard - which does not contain charts made for part 1 - which allows the user to quickly understand insights in an intuitive manner ( 45 marks )

Part 3 - SQL ( 10 Marks)

1.Can you tell the order of following SQL statement ( 2 marks )

A SELECT, GROUP BY, WHERE, HAVING

B SELECT, WHERE, GROUP BY, HAVING

C SELECT, HAVING, WHERE, GROUP BY

D SELECT, WHERE, HAVING, GROUP BY

2. What is CTE? ( 2 marks)

3. Country table ( 6 marks)

| Country\_id | Name | Region\_id | Population | revenue |
| --- | --- | --- | --- | --- |
| AR | Argentina | 2 | 10000 | 10000000.00 |
| NL | Netherlands | 1 | 15000 | 10000000.00 |
| AU | Australia | 3 | 12000 | 800000.00 |
| BE | Belgium | 1 | 23000 | 3000000.00 |
| BR | Brazil | 2 | 11300 | 2000000.00 |
| CA | Canada | 2 | 16500 | 4600000.00 |
| CH | Switzerland | 1 | 30000 | 2100000.00 |
| CN | China | 3 | 40000 | 1300000.00 |
| DE | Germany | 1 | 35000 | 1200000.00 |

a. Write a query in SQL to display the country\_id,name and revenue of the 2nd and 3rd highest revenue earned countries from the country table.

b. Write a query in SQL to display the number of regions in each country, sorted high to low.

On completion of, please email the SQL files / answers and the PBIX / TWBX files to Rashmi. In case you are using Tableau Public, please publish the dashboard and share the link with Rashmi.