Test: Part-2 Question **Duration: 45 mins**

17 marks (17% weight)

Submission Instructions

Submit a zip file in Canvas folder "Submission-Test_Part-2_18-April"

1. There is one question in this part of the test.
2. **Create a zip file** containing any files used is answering the question.
3. Name your file as {yourMatricNumber}, omitting the brackets.

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45 mins duration for this part of the test is inclusive of preparing the submission file and uploading to the specified submission folder.

Penalty for late submission up to 5 minutes – 1 mark per minute.
Penalty for submission later than 5 minutes after submission time – 17 marks

Question

Use Tableau or D3.

Read the question before you retrieve or start using the given dataset.

Use the given dataset **TEST-DATASET.csv** for visualizations.

Information about TEST-DATASET
(summarized from: https://earthquake.usgs.gov/data/comcat/index.php)

Attribute	Description
time	Time when the event occurred. Times are reported in milliseconds since the epoch (1970-01-01T00:00:00.000Z).
latitude	Decimal degrees latitude of epicenter. Negative values for southern latitudes.
longitude	Decimal degrees longitude of epicenter. Negative values for western longitudes.
depth	Depth of where the earthquake begins to rupture in kilometers.
mag	The magnitude for the event. Earthquake magnitude is a measure of the size of an earthquake at its source. It is a logarithmic measure.
magType	The method or algorithm used to calculate the preferred magnitude for the event.
gap	The largest azimuthal gap between azimuthally adjacent stations (in degrees). In general, the smaller this number, the more reliable the calculated horizontal position of the earthquake is.
dmin	Horizontal distance from the epicenter to the nearest station (in degrees). 1 degree is approximately 111.2 km. In general, the smaller this number, the more reliable the calculated depth of the earthquake is.
rms	The root-mean-square (RMS) travel time residual, in sec, using all weights. This parameter provides a measure of the fit of the observed arrival times to the predicted arrival times for this location. Smaller numbers reflect a better fit of the data.
net	The ID of a data contributor. Identifies the network considered to be the preferred source of information for this event.
id	A unique identifier for the event.
updated	Time when the event was most recently updated. Times are reported in milliseconds since the epoch.
type	Type of seismic event.
horizontalError	Uncertainty of reported location of the event in kilometers.
depthError	Uncertainty of reported depth of the event in kilometers.
magError	Uncertainty of reported magnitude of the event. The estimated standard error of the magnitude. We report an "unknown" value if the contributing seismic network does not supply uncertainty estimates.
magNst	The total number of seismic stations used to calculate the magnitude for this earthquake.
status	Indicates whether the event has been reviewed by a human.
locationSource	Network that originally authored the reported location of this event.
magSource	Network that originally authored the reported magnitude for this event.
country	Country where the earthquake occurred.

Question

a) Choose any two of the following queries and create one or multiple interactive charts for each of those. Include some form of interactivity, e.g., filtering, tooltip, etc.

   Constraint: your chart choice for the two queries should be different from each other. If you choose multiple charts for each, at least one of the charts should be different.

The interactive charts you create should let the user know/explore

1. The number of earthquakes for 5 different countries (your choice of which 5) over the years
2. The average earthquake magnitudes for 5 different countries (your choice of which 5) over the years
3. Detailed information (from given data) of different earthquakes
4. The locations of the highest and lowest magnitude earthquakes (you are allowed to define "highest" and "lowest")
5. The relationship between the magnitude of earthquakes and their frequency
6. The times at which earthquakes occurred in a given country
7. The top 10 countries which experience earthquakes most frequently

b) Come up with one more explanatory OR exploratory query and create a suitable interactive visualization (one chart is sufficient) to address it.

   Or else choose one more query from the above list in (a).

   Constraint: your query and chart choice in (b) should be different than the queries and chart choices in each of the queries you selected in (a).

Prepare a short report following the template given at the end of this document. Include the URL of your tableau story or link of D3 visualization (if hosted on a public domain) in your report.

If you are making any assumptions, write them in the first section of your submission (see template below).

Students using Tableau must submit a link to tableau visualization shared publicly (share it via Tableau Public, **NOT Tableau Cloud**) and a short report (see template at the end of this document) **in a pdf file and add it to your submission zip file** containing the pdf report and any other supplementary files you may have used for creating visualization (if any).

Students using D3 must submit all html, script, and additional library files in the correct folder hierarchy, supplementary files used for creating visualization (if any), and a short report (see template at the end of this document) in a zip file.

Name your zip file as {yourMatricNumber}, omitting the brackets.
You may upload your D3 project (all html, script, and additional library files) onto a repository hosting site (e.g. Github, Gitlab) — **make sure that your repository is publicly accessible and include your repository link in your report**. Upload the report in a zip file as per the instructions above.

TUTOR SHALL NOT ACCOMMODATE ANY RE-SUBMISSION OF THE LINK or SHALL NOT SEEK CLARIFICATION IN CASE THE SUBMITTED LINK(S) DO NOT WORK.

<TEMPLATE for answers>

CS5346 Test

Matric Number: <Your Matric Number > Test – 18 April, 2024

1. URL of Tableau story/D3 Visualization:

2. Visualizations (Keep this section brief and fulfil the requirements according to the requirements below)

   (a) For each query you have selected

   Query: < Write the full query(not just the number of the query) you chose >
   Image: < Provide image(s) of the visualization(s) >
   Visual Encoding: < Describe visual encoding of the visualization(s) you have produced >

   (b) For the query you defined

   Query: < Write the query you defined >
   Image: < Provide image(s) of the visualization(s) >
   Visual Encoding: < Describe visual encoding of the visualization(s) you have produced >

3. (optional) Any other thing you want us to take note for your visualizations
4. (optional) Write here if you have made any assumptions or interpretations that could help understand your choices
5. (optional) Any observations or descriptions you wish to write about the data you have handled.