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CS 623 Database Management

Project 2 Part 1 Analyzing Geographic Data

Topic: Earthquake Data

Data Source: [Earthquake data](https://earthquake.usgs.gov/earthquakes/map/?extent=11.85439,-1.06256&extent=11.8789,-1.04293&range=search&timeZone=utc&search=%7B%22name%22:%22Search%20Results%22,%22params%22:%7B%22starttime%22:%222023-03-30%2000:00:00%22,%22endtime%22:%222023-04-29%2023:59:59%22,%22minmagnitude%22:2.5,%22orderby%22:%22time%22%7D%7D)

Objective: Analyzing earthquake data, to find insight on magnitude, place and time.

Create the necessary extension to process geographic data

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Create table called earth\_test to load data

A picture containing text, screenshot, font

Description automatically generated

View the tableA screenshot of a computer

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Get count of total rows in table

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Select the all columns without nulls values using ‘NOT IN”

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There are many null value in the table. Total null values in table is 1184

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Using aggregate function to get the Avg, min and max magnitude base on location source

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Get of status: Automatic means that computer system detection and review indicate that analyst reviews incidents. 1656 status was reviewed by analyst

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Using rank function method to rank mag, dep and gap

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Calculate distant between point

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Calculating distant between point of interest : The two location has 7.1 mag earthquake in April of 2023

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Using the group by method to group the highest mag by dept, time and place. Here you can see the Indonesia has two big earthquake in April of 2023

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Country with mag > 7 was Indonesia and New Zealand

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Create view called most dangerous place

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Description automatically generated

Create index on name danger\_hit. Give overview of cost of query

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Create an index called safe zone. Below we can see the detail of the sequential scan

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Create another index where status = automatic. Meaning the computer detect earthquake and here we can see the sequential scan and cost of query

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The distinct function to get the mag > 6 by time , as we can see here that April is the peak season for earthquake

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Using the count method to get a count by latitude and longitude with mag > 6

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Description automatically generated with medium confidence

Order by the descending order limit 10

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Avg earthquake by type. Here we can see that avg is 3.7

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Create function to get total records

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Conclusion: observation on this analysis is Indonesia and New Zealand has the highest earthquake magnitude and during the month of April most of the earth occurred.