CS306 Group Project Step 3 - Group 17 - Natural Disasters

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Link to the repository: https://github.com/dogacgorgulu/CS306-Group17

1. Discover Insights
    a. Create Views
    5 different views, each view are created.
        i. View `top_20_deaths` displays the top 20 countries has most total deaths.
        ii. View `top_20_injuries` displays top 20 countries has most total injuries.
        iii. View `top_20_affected` displays top 20 countries has most total affected people.
        iv. View `heavily_economically_damaged` displays the countries that are economically damaged beyond average economic damage across the years
        v. View `top_20_populated_countries` displays the top 20 countries with the highest population in 2020.

    b. Joins & Set Operators
    4 different statements were written. Statements display following:
        i. Population of the countries in 2020 with the most deaths in total.
        ii. Population of the countries in 2020 with the most injuries in total.
        iii. Population of the countries in 2020 with the most affected people in total.
        iv. Top 20 countries with the most deaths, injuries and affected people in total and their population in 2020.

    c. “In” and “Exists”
    Both queries with “IN” and “EXISTS” statements display the countries which are damaged economically beyond average in specific years alongside with the country name. Both queries result in the same amount of tuples.
    d. Aggregate Operators
        i. We used all of the aggregate operators. Using SUM, we calculated the total economic impact; using MAX, we got the country with the highest amount of total deaths; using MIN, we got the minimum number of injuries from earthquakes that is bigger than 100 by year; using COUNT, we got the number of countries; lastly, using AVG, we got the countries with a higher than average injuries from earthquakes by year.

2. Constraints and Triggers

   In this part, we first wrote a line of code to determine the lowest and highest year that can be entered as data in our population table, and we found the years as the lowest 1950 and the highest 2020. Next, we created an alter table and added constraints to limit the year data that can be entered between the lowest year 1950 and the highest year 2020. Then, we created two triggers and wrote a code that equates the years entered before 1950 to 1950 and the years entered after 2020 to 2020. This code works as two different triggers as before update and before insert.

3. Stored Procedure

   We created a stored procedure to display the number of people injured by earthquakes by year for every country. As shown in the log files, our calls with different parameters return different results.