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IST 659

Project Deliverable 2

Hydrological Disasters Database

Part 1

Summary

Hydrological disasters affect different countries in varying degrees; some countries may have more occurrences of disaster events while others may have more deaths or people affected following an occurrence. This project focuses on creating a database that tracks number of occurrences, total deaths, and total people affected by country within three separate 10-year time periods in order to assess which countries appear to be experiencing an increase in hydrological disasters over time and in the future. Due to the international scope of the data, there are many stakeholders for this database, including environmental risk assessors, national government officials, policy makers, residents of each country, actuaries, investors, and more. Being a more widespread topic, this database can be used in many different avenues and can be updated and expanded in many ways in order to target varying focuses, but this particular study will serve to answer five main questions:

1. Which three countries experienced the greatest number of hydrological disaster occurrences in the past 10 years?
2. Which country experienced the greatest increase in hydrological disasters in the past 30 years?
3. Which three countries have the highest people-affected-to-occurrence ratio in the past 10 years?
4. Which country has the highest death-to-occurrence ratio in the past 10 years?
5. Has the United States seen an increase in people affected and/or deaths due to a hydrological disaster occurrence over the past 30 years?

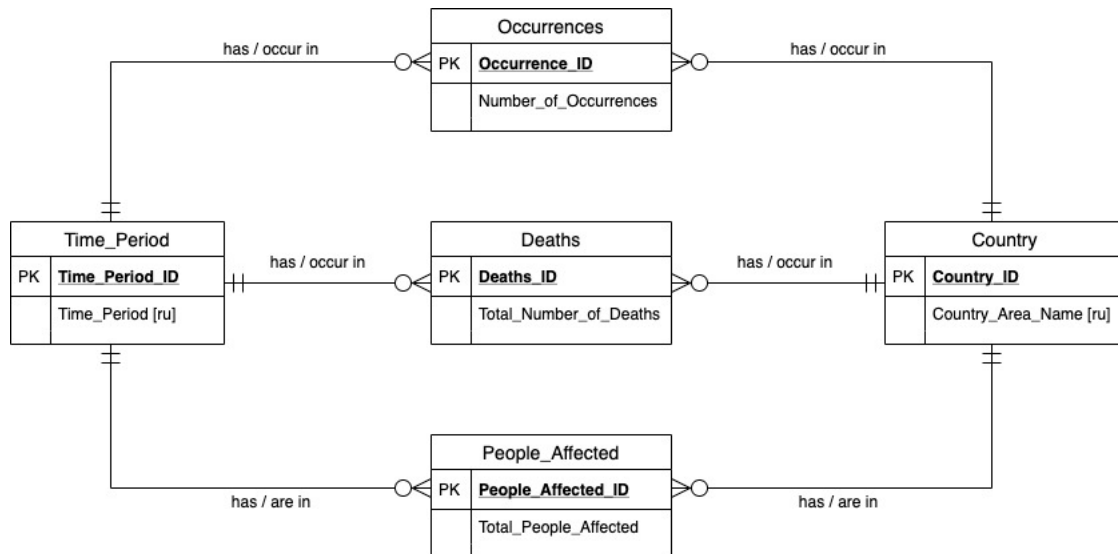
In order to focus on these 5 questions, these business rules will need to be applied:

1. Each hydrological disaster occurrence, death, and person affected must occur in one and only one country.
2. Each country may contain zero or more occurrences, deaths, and people affected.
3. Each occurrence, death, and person affected must occur within one and only one 10-year time period.

Glossary

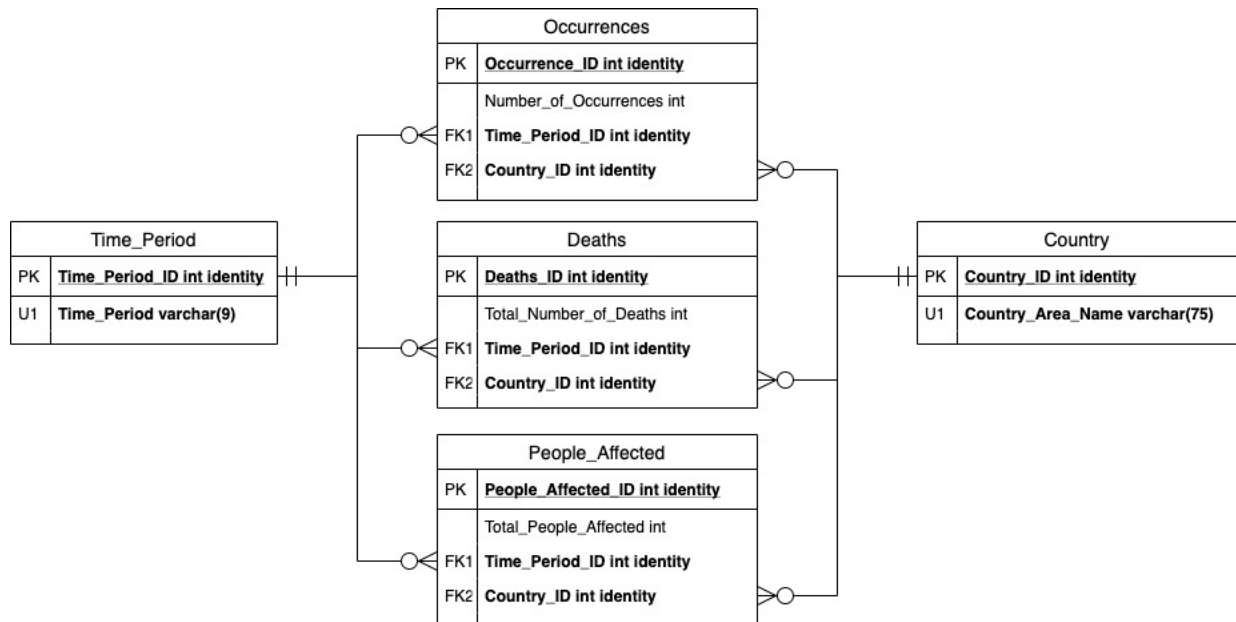
- A **country** is the nation or territory in which each hydrological disaster occurs.
- A **hydrological disaster occurrence** is defined as a hazard caused by the occurrence, movement, and distribution of surface and subsurface freshwater and saltwater. Such hazards are further classified as: Flood, Landslide, or Wave Action.
- Total **deaths** is the sum of deaths and missing. Death is defined as number of people who lost their life because the event happened. Missing is the number of people whose whereabouts since the disaster is unknown, and who are presumed dead.
- **People affected** are the sum of injured, affected and left homeless after a disaster. Injured is defined as people suffering from physical injuries, trauma or an illness requiring immediate medical assistance as a direct result of a disaster. Homeless is defined as the number of people whose house is destroyed or heavily damaged and therefore need shelter after an event. Affected is defined as people requiring immediate assistance during a period of emergency, i.e. requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance.
- Each **time period** is defined as a 10-year time frame in which each Occurrence, Death, and Person Affected data takes place. In this study, the time periods in focus are 1990-1999, 2000-2009, and 2010-2019.

Conceptual Model



The Conceptual Model for this database is relatively simple, with 5 entities: Country, Time Period, Occurrences, Deaths, and People Affected. Each Country will have zero or more Occurrences, Deaths, and People Affected, while each of the Occurrences, Deaths, and People Affected must occur within one Country. Similarly, each Time Period will have zero or more Occurrences, Deaths, and People Affected, while each of the Occurrences, Deaths, and People Affected must occur within one Time Period. In this case, the data was collected over a time frame of 30 years, broken down into 10-year time periods, “1990-1999”, “2000-2009”, and “2010-2019”, which will be seen when we add our data.

Normalized Logical Model



The Normalized Logical Model did not require very much adjustment from the Conceptual Model, except for the implementation of Country ID and Time Period ID as foreign keys into the Occurrences, Deaths, and People Affected tables. The Time Period column required a varchar identity due to the categorical nature of the attributes rather than a datetime data type. Because Number of Occurrences, Total Number of Deaths, and Total People Affected are all numerical attributes without a need for decimals, they were given integer data types. All primary keys were given integer identity data types and the Country Area Name attribute was given a varchar data type with 75 characters in order to ensure enough space is allotted for each name.

Part 2

Physical Database Design

```
/*
    Author      : Tesslyn Knapp
    Course      : IST659 M407
    Term        : April, 2020
*/

-- Creating Tables/Views/Procedures in Repeatable Form

-- Create Drops

-- Drop Views
IF OBJECT_ID('dbo.DeathsData') IS NOT NULL
    DROP VIEW dbo.DeathsData
IF OBJECT_ID('dbo.OccurrencesData') IS NOT NULL
    DROP VIEW dbo.OccurrencesData
IF OBJECT_ID('dbo.PeopleAffectedData') IS NOT NULL
    DROP VIEW dbo.PeopleAffectedData
IF OBJECT_ID('dbo.HydrologicalDisastersData') IS NOT NULL
    DROP VIEW dbo.HydrologicalDisastersData
IF OBJECT_ID('dbo.HighestOccurrencesPast10Years') IS NOT NULL
    DROP VIEW dbo.HighestOccurrencesPast10Years
IF OBJECT_ID('dbo.GreatestOccurrenceIncrease') IS NOT NULL
    DROP VIEW dbo.GreatestOccurrenceIncrease
IF OBJECT_ID('dbo.HighestPeopleAffectedOccurrenceRatios') IS NOT NULL
    DROP VIEW dbo.HighestPeopleAffectedOccurrenceRatios
IF OBJECT_ID('dbo.HighestDeathOccurrenceRatios') IS NOT NULL
    DROP VIEW dbo.HighestDeathOccurrenceRatios
IF OBJECT_ID('dbo.UnitedStatesData') IS NOT NULL
    DROP VIEW dbo.UnitedStatesData

-- Drop Tables
IF OBJECT_ID('dbo.People_Affected') IS NOT NULL
    DROP TABLE dbo.People_Affected
IF OBJECT_ID('dbo.Occurrences') IS NOT NULL
    DROP TABLE dbo.Occurrences
IF OBJECT_ID('dbo.Deaths') IS NOT NULL
    DROP TABLE dbo.Deaths
IF OBJECT_ID('dbo.Time_Period') IS NOT NULL
    DROP TABLE dbo.Time_Period
IF OBJECT_ID('dbo.Country') IS NOT NULL
    DROP TABLE dbo.Country

-- Create Hydrological Disasters Database Tables

-- Creating the Country table
CREATE TABLE Country (
    --Columns for the Country table
    Country_ID int identity,
    Country_Area_Name varchar(75) not null,
    --Constraints on the Country Table
    CONSTRAINT PK_Country PRIMARY KEY (Country_ID),
    CONSTRAINT U1_Country UNIQUE (Country_Area_Name)
)
-- End Creating the Country table

-- Creating the Time_Period table
CREATE TABLE Time_Period (
    -- Columns for the Time_Period table
    Time_Period_ID int identity,
    Time_Period varchar(9) not null,
    -- Constraints on the Time_Period table
    CONSTRAINT PK_Time_Period PRIMARY KEY (Time_Period_ID),
    CONSTRAINT U1_Time_Period UNIQUE (Time_Period),
)
-- End Creating the Time_Period table

-- Creating the Deaths table
CREATE TABLE Deaths (
    -- Columns for the Deaths table
```

```

        Deaths_ID int identity,
        Total_Number_of_Deaths int,
        Time_Period_ID int not null,
        Country_ID int not null,
        -- Constraints on the Deaths table
        CONSTRAINT PK_Deaths PRIMARY KEY (Deaths_ID),
        CONSTRAINT FK1_Deaths FOREIGN KEY (Time_Period_ID) REFERENCES Time_Period(Time_Period_ID),
        CONSTRAINT FK2_Deaths FOREIGN KEY (Country_ID) REFERENCES Country(Country_ID)
    )
-- End Creating the Deaths table

-- Creating the Occurrences table
CREATE TABLE Occurrences (
    -- Columns for the Occurrences table
    Occurrences_ID int identity,
    Number_of_Occurrences int,
    Time_Period_ID int not null,
    Country_ID int not null,
    -- Constraints on the Occurrences table
    CONSTRAINT PK_Occurrences PRIMARY KEY (Occurrences_ID),
    CONSTRAINT FK1_Occurrences FOREIGN KEY (Time_Period_ID) REFERENCES
Time_Period(Time_Period_ID),
    CONSTRAINT FK2_Occurrences FOREIGN KEY (Country_ID) REFERENCES Country(Country_ID),
)
-- End Creating the Occurrences table

-- Creating the People Affected table
CREATE TABLE People_Affected (
    -- Columns for the People Affected table
    People_Affected_ID int identity,
    Total_People_Affected int,
    Time_Period_ID int not null,
    Country_ID int not null,
    -- Constraints on the People Affected table
    CONSTRAINT PK_People_Affected PRIMARY KEY (People_Affected_ID),
    CONSTRAINT FK1_People_Affected FOREIGN KEY (Time_Period_ID) REFERENCES
Time_Period(Time_Period_ID),
    CONSTRAINT FK2_People_Affected FOREIGN KEY (Country_ID) REFERENCES Country(Country_ID)
)
-- End Creating the People_Affected table

-- Insert Data

-- Inserting all countries into Country Table
INSERT INTO Country (Country_Area_Name)
VALUES ('Afghanistan'), ('Albania'), ('Algeria'), ('American Samoa'), ('Angola'), ('Argentina'),
('Armenia'), ('Australia'), ('Austria'),
('Azerbaijan'), ('Bahamas'), ('Bangladesh'), ('Belarus'), ('Belgium'), ('Belize'), ('Benin'),
('Bhutan'), ('Bolivia (Plurinational State of)'), ('Bosnia and Herzegovina'),
('Botswana'), ('Brazil'), ('Bulgaria'), ('Burkina Faso'), ('Burundi'), ('Cabo Verde'), ('Cambodia'),
('Cameroon'), ('Canada'), ('Central African Republic'),
('Chad'), ('Chile'), ('China'), ('China, Hong Kong Special Administrative Region'), ('Colombia'),
('Comoros'), ('Congo'), ('Costa Rica'),
('Côte d'Ivoire'), ('Croatia'), ('Cuba'), ('Czechia'), ('Democratic Peoples Republic of Korea'),
('Democratic Republic of the Congo'),
('Djibouti'), ('Dominican Republic'), ('Ecuador'), ('Egypt'), ('El Salvador'), ('Eritrea'),
('Ethiopia'), ('Fiji'), ('Finland'), ('France'),
('French Guiana'), ('French Polynesia'), ('Gabon'), ('Gambia'), ('Georgia'), ('Germany'), ('Ghana'),
('Greece'), ('Guatemala'), ('Guinea'), ('Guinea-Bissau'),
('Guyana'), ('Haiti'), ('Honduras'), ('Hungary'), ('Iceland'), ('India'), ('Indonesia'), ('Iran
Islamic Republic of)'), ('Iraq'), ('Ireland'), ('Israel'), ('Italy'),
('Jamaica'), ('Japan'), ('Jordan'), ('Kazakhstan'), ('Kenya'), ('Kiribati'), ('Kuwait'),
('Kyrgyzstan'), ('Lao Peoples Democratic Republic'), ('Lebanon'), ('Lesotho'),
('Liberia'), ('Libya'), ('Lithuania'), ('Luxembourg'), ('Madagascar'), ('Malawi'), ('Malaysia'),
('Maldives'), ('Mali'), ('Marshall Islands'), ('Mauritania'), ('Mauritius'),
('Mexico'), ('Micronesia (Federated States of)'), ('Mongolia'), ('Montenegro'), ('Morocco'),
('Mozambique'), ('Myanmar'), ('Namibia'), ('Nepal'), ('Netherlands'),
('New Zealand'), ('Nicaragua'), ('Niger'), ('Nigeria'), ('North Macedonia'), ('Norway'), ('Oman'),
('Pakistan'), ('Panama'), ('Papua New Guinea'), ('Paraguay'), ('Peru'),
('Philippines'), ('Poland'), ('Portugal'), ('Puerto Rico'), ('Qatar'), ('Republic of Korea'),
('Republic of Moldova'), ('Romania'), ('Russian Federation'), ('Rwanda'),
('Saint Lucia'), ('Saint Vincent and the Grenadines'), ('Samoa'), ('Saudi Arabia'), ('Senegal'),
('Serbia'), ('Seychelles'), ('Sierra Leone'), ('Slovakia'), ('Slovenia'),
('Solomon Islands'), ('Somalia'), ('South Africa'), ('South Sudan'), ('Spain'), ('Sri Lanka'), ('State
of Palestine'), ('Sudan'), ('Suriname'), ('Swaziland'), ('Switzerland'),

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('Syrian Arab Republic'), ('Tajikistan'), ('Thailand'), ('Timor-Leste'), ('Togo'), ('Trinidad and Tobago'), ('Tunisia'), ('Turkey'), ('Turkmenistan'), ('Uganda'), ('Ukraine'), ('United Arab Emirates'), ('United Kingdom of Great Britain and Northern Ireland'), ('United Republic of Tanzania'), ('United States of America'), ('Uruguay'), ('Uzbekistan'), ('Vanuatu'), ('Venezuela (Bolivarian Republic of)'), ('Viet Nam'), ('Yemen'), ('Zambia')
```

```
-- Look at Country inserts to check for mistakes
SELECT * FROM Country
```

| Results | | Messages |
|---------|------------|-------------------|
| | Country_ID | Country_Area_Name |
| 1 | 1 | Afghanistan |
| 2 | 2 | Albania |
| 3 | 3 | Algeria |
| 4 | 4 | American Samoa |
| 5 | 5 | Angola |
| 6 | 6 | Argentina |
| 7 | 7 | Armenia |
| 8 | 8 | Australia |
| 9 | 9 | Austria |
| 10 | 10 | Azerbaijan |
| 11 | 11 | Bahamas |
| 12 | 12 | Bangladesh |
| 13 | 13 | Barbados |

M\Tessly... IST659_M407_ttknapp 00:00:00 174 rows

```
-- We correctly added our countries to our database! Cool!
```

```
-- Insert time periods into Time_Period table
INSERT INTO Time_Period (Time_Period)
VALUES ('1990-1999'), ('2000-2009'), ('2010-2019')
```

```
-- Look at Time_Period inserts to check for mistakes
SELECT * FROM Time_Period
```

| Results | | Messages |
|---------|----------------|-------------|
| | Time_Period_ID | Time_Period |
| 1 | 1 | 1990-1999 |
| 2 | 2 | 2000-2009 |
| 3 | 3 | 2010-2019 |

```
-- We correctly added the 3 time periods to our database!
```

```
-- Insert deaths into Deaths table
INSERT INTO Deaths (Total_Number_of_Deaths, Time_Period_ID, Country_ID)
VALUES
(2729, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(1218, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(2218, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(15, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Albania')),
(4, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Albania')),
(4, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Albania')),
(118, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Algeria')),
(1312, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Algeria')),
(97, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Algeria')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'American Samoa')),
(6, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'American Samoa')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'American Samoa')),
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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```

(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uzbekistan')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Vanuatu')),
(0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Vanuatu')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Vanuatu')),
(30052, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)')),
(160, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)')),
(66, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)')),
(2237, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Viet Nam')),
(2109, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Viet Nam')),
(864, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Viet Nam')),
(446, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(412, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(178, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Zambia')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zambia')),
(13, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Zambia'))
-- End Inserting deaths into Deaths table

```

-- Insert occurrences into Occurrences table

```

INSERT INTO Occurrences (Number_of_Occurrences, Time_Period_ID, Country_ID)
VALUES

```

```

(17, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Afghanistan')),
(45, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Afghanistan')),
(46, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Afghanistan')),
(4, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Albania')),
(4, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Albania')),
(7, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Albania')),
(8, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Algeria')),
(25, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Algeria')),
(6, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Algeria')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'American Samoa')),
(1, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'American Samoa')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'American Samoa')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Angola')),
(21, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Angola')),
(19, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Angola')),
(10, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Argentina')),
(20, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Argentina')),
(20, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Argentina')),
(2, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Armenia')),

```

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```

(17, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Viet Nam')),
(41, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Viet Nam')),
(32, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Viet Nam')),
(7, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(16, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(9, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Yemen')),
(1, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Zambia')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zambia')),
(6, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Zambia'))

```

-- End Inserting occurrences to Occurrences table

-- Insert people affected into People_Affected table

```

INSERT INTO People_Affected (Total_People_Affected, Time_Period_ID, Country_ID)
VALUES

```

```

(183479, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(459474, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(453890, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Afghanistan')),
(46500, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Albania')),
(76484, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Albania')),
(82602, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Albania')),
(37973, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Algeria')),
(200271, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Algeria')),
(36094, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Algeria')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'American Samoa')),
(3, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'American Samoa')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'American Samoa')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Angola')),
(816159, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Angola')),
(334944, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Angola')),
(465074, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Argentina')),
(749075, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Argentina')),
(745569, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Argentina')),
(7144, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Armenia')),
(0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Armenia')),
(750, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Armenia')),
(55432, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Australia')),
(35391, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Australia')),
(212997, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Australia')),
(10000, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Austria')),
(61416, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Austria')),

```

[illegible]

(13270, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Bulgaria')),
 (47147, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Bulgaria')),
 (68060, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burkina Faso')),
 (315143, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burkina Faso')),
 (230458, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burkina Faso')),
 (NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burundi')),
 (75281, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burundi')),
 (64463, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Burundi')),
 (NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cabo Verde')),
 (150, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cabo Verde')),
 (NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cabo Verde')),
 (2889379, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cambodia')),
 (6644235, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cambodia')),
 (4639790, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cambodia')),
 (1200, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cameroon')),
 (37396, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cameroon')),
 (348770, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Cameroon')),
 (49900, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Canada')),
 (16070, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Canada')),
 (153317, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Canada')),
 (76533, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Central African Republic')),
 (56350, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Central African Republic')),
 (61013, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Central African Republic')),
 (255206, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chad')),
 (376128, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chad')),
 (758670, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chad')),
 (165387, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chile')),
 (675833, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chile')),
 (218918, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Chile')),
 (1003620234, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China')),
 (528315707, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China')),
 (383784910, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China')),
 (5710, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China, Hong Kong Special Administrative Region')),
 (0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China, Hong Kong Special Administrative Region')),
 (NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'China, Hong Kong Special Administrative Region')),
 (556175, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Colombia')),
 (5510358, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Colombia')),
 (4677118, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM Country WHERE Country_Area_Name = 'Colombia')),

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```

(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Turkmenistan')),
(168700, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uganda')),
(793991, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uganda')),
(335564, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uganda')),
(2059570, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Ukraine')),
(793991, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Ukraine')),
(335564, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Ukraine')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Arab Emirates')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Arab Emirates')),
(188, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'United Arab Emirates')),
(1930, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Kingdom of Great Britain and Northern Ireland')),
(380838, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Kingdom of Great Britain and Northern Ireland')),
(52995, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Kingdom of Great Britain and Northern Ireland')),
(408273, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Republic of Tanzania')),
(96900, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Republic of Tanzania')),
(272124, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United Republic of Tanzania')),
(648334, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United States of America')),
(11325487, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United States of America')),
(313857, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'United States of America')),
(15500, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uruguay')),
(136700, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uruguay')),
(58673, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uruguay')),
(0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID FROM
Country WHERE Country_Area_Name = 'Uzbekistan')),
(1500, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uzbekistan')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Uzbekistan')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Vanuatu')),
(3951, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Vanuatu')),
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Vanuatu')),
(613521, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)'),
(134462, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)'),
(167465, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Venezuela (Bolivarian Republic of)'),
(7442332, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Viet Nam')),
(10996344, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Viet Nam')),
(6816319, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Viet Nam')),
(317700, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Yemen')),
(31434, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Yemen')),
(159872, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Yemen')),
(1300000, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999')), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zambia')),

```



```
(NULL, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zambia')),
(24525, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zambia'))
-- End Inserting people affected into People_Affected table
```

```
-- We've finished inserting our data!
-- As it turns out, Swaziland, changed their name to Eswatini in 2018. Let's update our database with
the new name!
```

```
UPDATE Country SET Country_Area_Name = 'Eswatini' WHERE Country_Area_Name = 'Swaziland'
```

```
SELECT * FROM Country WHERE Country_Area_Name = 'Eswatini'
```

Results

Messages

| | Country_ID | Country_Area_Name |
|---|------------|-------------------|
| 1 | 151 | Eswatini |

```
-- Great! We successfully updated our Country table with the name change. Let's double check and make
sure it updated in our other tables as well.
```

```
-- From our last SELECT statement, we see that the Country_ID is 151, so we'll use that to find
Eswatini
```

```
SELECT * FROM Deaths WHERE Country_ID = 151
```

```
SELECT * FROM Occurrences WHERE Country_ID = 151
```

```
SELECT * FROM People_Affected WHERE Country_ID = 151
```

Results

Messages

| | Deaths_ID | Total_Number_of_Deaths | Time_Period_ID | Country_ID |
|---|-----------|------------------------|----------------|------------|
| 1 | 451 | NULL | 1 | 151 |
| 2 | 452 | 0 | 2 | 151 |
| 3 | 453 | 11 | 3 | 151 |

| | Occurrences_ID | Number_of_Occurrences | Time_Period_ID | Country_ID |
|---|----------------|-----------------------|----------------|------------|
| 1 | 451 | NULL | 1 | 151 |
| 2 | 452 | 2 | 2 | 151 |
| 3 | 453 | 1 | 3 | 151 |

| | People_Affected_ID | Total_People_Affected | Time_Period_ID | Country_ID |
|---|--------------------|-----------------------|----------------|------------|
| 1 | 451 | NULL | 1 | 151 |
| 2 | 452 | 274500 | 2 | 151 |
| 3 | 453 | 400 | 3 | 151 |

```
-- Cool! All updated and ready to go. Now let's take a look at each of our tables
```

```
SELECT * FROM Deaths
```

```
SELECT * FROM Occurrences
```

```
SELECT * FROM People_Affected
```

Results Messages

| | Deaths_ID | Total_Number_of_Deaths | Time_Period_ID | Country_ID | | |
|---|-----------|------------------------|----------------|------------|--|--|
| 1 | 1 | 2729 | 1 | 1 | | |
| 2 | 2 | 1218 | 2 | 1 | | |
| 3 | 3 | 2218 | 3 | 1 | | |
| 4 | 4 | 15 | 1 | 2 | | |

| | Occurrences_ID | Number_of_Occurrences | Time_Period_ID | Country_ID | | |
|---|----------------|-----------------------|----------------|------------|--|--|
| 1 | 1 | 17 | 1 | 1 | | |
| 2 | 2 | 45 | 2 | 1 | | |
| 3 | 3 | 46 | 3 | 1 | | |
| 4 | 4 | 4 | 1 | 2 | | |

| | People_Affected_ID | Total_People_Affected | Time_Period_ID | Country_ID | | |
|---|--------------------|-----------------------|----------------|------------|--|--|
| 1 | 1 | 183479 | 1 | 1 | | |
| 2 | 2 | 459474 | 2 | 1 | | |
| 3 | 3 | 453890 | 3 | 1 | | |
| 4 | 4 | 46500 | 1 | 2 | | |

DESKTOP-OMKBP3M\Tessly... IST659_M407_ttknapp 00:00:01 1,566 rows

```
-- Oops! Looks like we forgot to add Zimbabwe to our database. Let's do that now.
```

```
-- Insert Zimbabwe into our Country table
```

```
INSERT INTO Country (Country_Area_Name)
```

```
VALUES ('Zimbabwe')
```

```
-- Insert Zimbabwe deaths into Deaths table - We have no value for Time Period 2000-2009, so that
should end up being listed as NULL
```

```
INSERT INTO Deaths (Total_Number_of_Deaths, Time_Period_ID, Country_ID)
```

```
VALUES (36, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT
Country_ID FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
```

```
INSERT INTO Deaths (Time_Period_ID, Country_ID)
```

```

VALUES ((SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
INSERT INTO Deaths (Total_Number_of_Deaths, Time_Period_ID, Country_ID)
VALUES (165, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT
Country_ID FROM Country WHERE Country_Area_Name = 'Zimbabwe'))

-- Insert Zimbabwe occurrences into Occurrences table - We have no value for Time Period 2000-2009, so
that should end up being listed as NULL
INSERT INTO Occurrences (Number_of_Occurrences, Time_Period_ID, Country_ID)
VALUES (1, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
INSERT INTO Occurrences (Time_Period_ID, Country_ID)
VALUES ((SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
INSERT INTO Occurrences (Number_of_Occurrences, Time_Period_ID, Country_ID)
VALUES (6, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))

-- Insert Zimbabwe people affected into People_Affected table - We have no value for Time Period 2000-
2009, so that should end up being listed as NULL
INSERT INTO People_Affected (Total_People_Affected, Time_Period_ID, Country_ID)
VALUES (0, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '1990-1999'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
INSERT INTO People_Affected (Time_Period_ID, Country_ID)
VALUES ((SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2000-2009'), (SELECT Country_ID
FROM Country WHERE Country_Area_Name = 'Zimbabwe'))
INSERT INTO People_Affected (Total_People_Affected, Time_Period_ID, Country_ID)
VALUES (13022, (SELECT Time_Period_ID FROM Time_Period WHERE Time_Period = '2010-2019'), (SELECT
Country_ID FROM Country WHERE Country_Area_Name = 'Zimbabwe'))

-- Let's check to make sure all of our data for Zimbabwe were inserted correctly
SELECT * FROM Country WHERE Country_ID = 175
SELECT * FROM Deaths WHERE Country_ID = 175
SELECT * FROM Occurrences WHERE Country_ID = 175
SELECT * FROM People_Affected WHERE Country_ID = 175

```

 **Results**  Messages

| | Country_ID | Country_Area_Name |
|---|------------|-------------------|
| 1 | 175 | Zimbabwe |

| | Deaths_ID | Total_Number_of_Deaths | Time_Period_ID | Country_ID |
|---|-----------|------------------------|----------------|------------|
| 1 | 523 | 36 | 1 | 175 |
| 2 | 524 | NULL | 2 | 175 |
| 3 | 525 | 165 | 3 | 175 |

| | Occurrences_ID | Number_of_Occurrences | Time_Period_ID | Country_ID |
|---|----------------|-----------------------|----------------|------------|
| 1 | 523 | 1 | 1 | 175 |
| 2 | 524 | NULL | 2 | 175 |
| 3 | 525 | 6 | 3 | 175 |

| | People_Affected_ID | Total_People_Affected | Time_Period_ID | Country_ID |
|---|--------------------|-----------------------|----------------|------------|
| 1 | 523 | 0 | 1 | 175 |
| 2 | 524 | NULL | 2 | 175 |
| 3 | 525 | 13022 | 3 | 175 |

```
-- Yay! All of our Zimbabwe data inserted correctly
```

```
-- We have some great tables, but we have a lot of information that would be more meaningful if we
created some joins!
```

```
-- Let's create a meaningful view of our Deaths data
```

```
GO
```

```
CREATE VIEW DeathsData
```

```
AS
```

```
SELECT
```

```

    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    Deaths.Total_Number_of_Deaths as TotalNumberOfDeaths

```

```
FROM Deaths
```

```
INNER JOIN Country ON Deaths.Country_ID = Country.Country_ID
```

```
INNER JOIN Time_Period ON Deaths.Time_Period_ID = Time_Period.Time_Period_ID
```

```
GO
```

```
SELECT * FROM DeathsData
```

| Results Messages | | | |
|------------------|----------------|------------|---------------------|
| | Country | TimePeriod | TotalNumberOfDeaths |
| 1 | Afghanistan | 1990-1999 | 2729 |
| 2 | Afghanistan | 2000-2009 | 1218 |
| 3 | Afghanistan | 2010-2019 | 2218 |
| 4 | Albania | 1990-1999 | 15 |
| 5 | Albania | 2000-2009 | 4 |
| 6 | Albania | 2010-2019 | 4 |
| 7 | Algeria | 1990-1999 | 118 |
| 8 | Algeria | 2000-2009 | 1312 |
| 9 | Algeria | 2010-2019 | 97 |
| 10 | American Samoa | 1990-1999 | NULL |
| 11 | American Samoa | 2000-2009 | 6 |
| 12 | American Samoa | 2010-2019 | NULL |

```
-- Let's create a meaningful view of our Occurrences data
GO
CREATE VIEW OccurrencesData
AS
SELECT
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    Occurrences.Number_of_Occurrences as NumberOfOccurrences
FROM Occurrences
INNER JOIN Country ON Occurrences.Country_ID = Country.Country_ID
INNER JOIN Time_Period ON Occurrences.Time_Period_ID = Time_Period.Time_Period_ID
GO
SELECT * FROM OccurrencesData
```

| Results Messages | | | |
|------------------|----------------|------------|---------------------|
| | Country | TimePeriod | NumberOfOccurrences |
| 1 | Afghanistan | 1990-1999 | 17 |
| 2 | Afghanistan | 2000-2009 | 45 |
| 3 | Afghanistan | 2010-2019 | 46 |
| 4 | Albania | 1990-1999 | 4 |
| 5 | Albania | 2000-2009 | 4 |
| 6 | Albania | 2010-2019 | 7 |
| 7 | Algeria | 1990-1999 | 8 |
| 8 | Algeria | 2000-2009 | 25 |
| 9 | Algeria | 2010-2019 | 6 |
| 10 | American Samoa | 1990-1999 | NULL |
| 11 | American Samoa | 2000-2009 | 1 |
| 12 | American Samoa | 2010-2019 | NULL |

```
-- Let's create a meaningful view of our People_Affected data
GO
CREATE VIEW PeopleAffectedData
AS
SELECT
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    People_Affected.Total_People_Affected as TotalPeopleAffected
FROM People_Affected
INNER JOIN Country ON People_Affected.Country_ID = Country.Country_ID
INNER JOIN Time_Period ON People_Affected.Time_Period_ID = Time_Period.Time_Period_ID
GO
SELECT * FROM PeopleAffectedData
```

| | Country | TimePeriod | TotalPeopleAffected |
|----|----------------|------------|---------------------|
| 1 | Afghanistan | 1990-1999 | 183479 |
| 2 | Afghanistan | 2000-2009 | 459474 |
| 3 | Afghanistan | 2010-2019 | 453890 |
| 4 | Albania | 1990-1999 | 46500 |
| 5 | Albania | 2000-2009 | 76484 |
| 6 | Albania | 2010-2019 | 82602 |
| 7 | Algeria | 1990-1999 | 37973 |
| 8 | Algeria | 2000-2009 | 200271 |
| 9 | Algeria | 2010-2019 | 36094 |
| 10 | American Samoa | 1990-1999 | NULL |
| 11 | American Samoa | 2000-2009 | 3 |
| 12 | American Samoa | 2010-2019 | NULL |

-- Great! We now can make sense of our data by looking at each of these views, but it would help us to see all of this put together.

```
-- Let's create a view to see all of the Hydrological Disasters Data
GO
CREATE VIEW HydrologicalDisastersData
AS
SELECT
    Country.Country_Area Name as Country,
    Time_Period.Time_Period as TimePeriod,
    Occurrences.Number_of_Occurrences as NumberOfOccurrences,
    Deaths.Total_Number_of_Deaths as TotalNumberOfDeaths,
    People_Affected.Total_People_Affected as TotalPeopleAffected
FROM Country, Time_Period, Occurrences, Deaths, People_Affected
WHERE Country.Country_ID=Occurrences.Country_ID
AND Country.Country_ID=Deaths.Country_ID
AND Country.Country_ID=People_Affected.Country_ID
AND Time_Period.Time_Period_ID=Occurrences.Time_Period_ID
AND Time_Period.Time_Period_ID=Deaths.Time_Period_ID
AND Time_Period.Time_Period_ID=People_Affected.Time_Period_ID
GO
SELECT * FROM HydrologicalDisastersData
```

| | Country | TimePeriod | NumberOfOccurrences | TotalNumberOfDeaths | TotalPeopleAffected |
|----|----------------|------------|---------------------|---------------------|---------------------|
| 1 | Afghanistan | 1990-1999 | 17 | 2729 | 183479 |
| 2 | Afghanistan | 2000-2009 | 45 | 1218 | 459474 |
| 3 | Afghanistan | 2010-2019 | 46 | 2218 | 453890 |
| 4 | Albania | 1990-1999 | 4 | 15 | 46500 |
| 5 | Albania | 2000-2009 | 4 | 4 | 76484 |
| 6 | Albania | 2010-2019 | 7 | 4 | 82602 |
| 7 | Algeria | 1990-1999 | 8 | 118 | 37973 |
| 8 | Algeria | 2000-2009 | 25 | 1312 | 200271 |
| 9 | Algeria | 2010-2019 | 6 | 97 | 36094 |
| 10 | American Samoa | 1990-1999 | NULL | NULL | NULL |
| 11 | American Samoa | 2000-2009 | 1 | 6 | 3 |
| 12 | American Samoa | 2010-2019 | NULL | NULL | NULL |

-- Awesome! Now we can easily see the changes in occurrences, deaths, and people affected in each country over time through this comprehensive view

-- Now let's create an easier way to update our Occurrences tables through Access.

Hydrological Disaster Occurrences Form

Hydrological Disaster Occurrences Form

Occurrences_ID

Number_of_Occurrences

Time_Period_ID

Country_ID

```
-- DATA QUESTION 1: Which three countries experienced the greatest number of hydrological disaster
occurrences in the past 10 years?
-- Now let's create a view to figure out the 3 countries with the most Occurrences in descending order
GO
CREATE VIEW HighestOccurrencesPast10Years
AS
SELECT TOP 3
```

```
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    Occurrences.Number_of_Occurrences as NumberOfOccurrences
FROM Country, Time_Period, Occurrences
WHERE Country.Country_ID=Occurrences.Country_ID
AND Time_Period.Time_Period ID=Occurrences.Time_Period_ID
AND Time_Period.Time_Period='2010-2019'
ORDER BY Occurrences.Number_of_Occurrences DESC
GO
SELECT * FROM HighestOccurrencesPast10Years
```

| dbo.HighestOccurrencesPast10Years | | |
|-----------------------------------|------------|---------------------|
| Country | TimePeriod | NumberOfOccurrences |
| China | 2010-2019 | 124 |
| Indonesia | 2010-2019 | 91 |
| India | 2010-2019 | 82 |
| * | | |

```
-- It looks like China, Indonesia, and India suffered from the highest numbers of hydrological disaster
occurrences in the past 10 years.
```

```
-- DATA QUESTION 2: Which country experienced the greatest increase in hydrological disasters
throughout the past 30 years?
-- Let's create a select statement to sum the number of hydrological disasters over the past 30 years
GO
CREATE VIEW GreatestOccurrenceIncrease
AS
SELECT TOP 1
```

```
    Country.Country_Area_Name as Country,
    SUM (Occurrences.Number_of_Occurrences) TotalNumberOfOccurrences
FROM Occurrences
RIGHT JOIN Country ON Country.Country_ID=Occurrences.Country_ID
GROUP BY
    Country.Country_Area_Name
ORDER BY
    TotalNumberOfOccurrences DESC, Country.Country_Area_Name
GO
SELECT * FROM GreatestOccurrenceIncrease
```

| dbo_GreatestOccurrenceIncrease | |
|--------------------------------|--------------------------|
| Country | TotalNumberOfOccurrences |
| China | 308 |
| * | |

-- It looks like China has suffered from the highest increase in hydrological disaster occurrences in the past 30 years with an increase of 308 occurrences.

```
-- DATA QUESTION 3: Which three countries have the highest people-affected-to-occurrence ratio in the
past 10 years
-- Let's create a view that will show us the highest people-affected-to-occurrence ratios for the top 3
countries
GO
CREATE VIEW HighestPeopleAffectedOccurrenceRatios
AS
SELECT TOP 3
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    ((People_Affected.Total_People_Affected)/Occurrences.Number_of_Occurrences) as
PeopleAffectedPerOccurrence
FROM Country, Time_Period, Occurrences, People_Affected
WHERE Country.Country_ID=People_Affected.Country_ID
AND Country.Country_ID=Occurrences.Country_ID
AND Time_Period.Time_Period_ID=People_Affected.Time_Period_ID
AND Time_Period.Time_Period_ID=Occurrences.Time_Period_ID
AND Time_Period.Time_Period='2010-2019'
ORDER BY PeopleAffectedPerOccurrence DESC
GO
SELECT * FROM HighestPeopleAffectedOccurrenceRatios
```

| dbo_HighestPeopleAffectedOccurrenceRatios | | |
|---|------------|-----------------------------|
| Country | TimePeriod | PeopleAffectedPerOccurrence |
| China | 2010-2019 | 3095039 |
| Thailand | 2010-2019 | 1464536 |
| Bangladesh | 2010-2019 | 1315542 |
| * | | |

-- It looks like China, Thailand, and Bangladesh have the highest people-affected-to-occurrence ratios for the past 10 years with 3095039, 1464536, and 1315542 people affected per occurrence.

```
-- DATA QUESTION 4: Which country has the highest death-to-occurrence ratio in the past 10 years?
-- Let's create a view that will show us the highest death-to-occurrence ratios for the top 10
countries
GO
CREATE VIEW HighestDeathOccurrenceRatios
AS
SELECT TOP 10
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    ((Deaths.Total_Number_of_Deaths)/(Occurrences.Number_of_Occurrences)) as DeathsPerOccurrence
FROM Country, Time_Period, Occurrences, Deaths
WHERE Country.Country_ID=Occurrences.Country_ID
AND Country.Country_ID=Deaths.Country_ID
AND Time_Period.Time_Period_ID=Occurrences.Time_Period_ID
AND Time_Period.Time_Period_ID=Deaths.Time_Period_ID
AND Time_Period.Time_Period='2010-2019'
ORDER BY DeathsPerOccurrence DESC
GO
SELECT * FROM HighestDeathOccurrenceRatios
```

| dbo_HighestDeathOccurrenceRatios | | |
|----------------------------------|------------|---------------------|
| Country | TimePeriod | DeathsPerOccurrence |
| Sierra Leone | 2010-2019 | 192 |
| India | 2010-2019 | 173 |
| Pakistan | 2010-2019 | 126 |
| Democratic Peo | 2010-2019 | 93 |
| Thailand | 2010-2019 | 75 |
| China | 2010-2019 | 72 |
| Guatemala | 2010-2019 | 72 |
| Nepal | 2010-2019 | 67 |
| Nigeria | 2010-2019 | 60 |
| Cambodia | 2010-2019 | 59 |
| * | | |

-- It looks like Sierra Leone has the highest death-to-occurrence ratio with 192 deaths per occurrence, followed by India and Pakistan with 173 and 126 deaths per occurrence, respectively, in the past 10 years.

```
-- DATA QUESTION 5: Has the United States seen an increase in occurrences, people affected and/or
deaths due to a hydrological disaster occurrence over the past 30 years?
-- Let's create a view of the United States in order to compare the occurrences, people affected, and
deaths over the past 30 years
GO
CREATE VIEW UnitedStatesData
AS
SELECT
```

```
    Country.Country_Area_Name as Country,
    Time_Period.Time_Period as TimePeriod,
    Occurrences.Number_of_Occurrences as NumberofOccurrences,
    Deaths.Total_Number_of_Deaths as TotalNumberOfDeaths,
    People_Affected.Total_People_Affected as TotalPeopleAffected
FROM Country, Time_Period, Occurrences, Deaths, People_Affected
WHERE Country.Country_ID=Occurrences.Country_ID
AND Country.Country_ID=Deaths.Country_ID
AND Country.Country_ID=People_Affected.Country_ID
AND Time_Period.Time_Period_ID=Occurrences.Time_Period_ID
AND Time_Period.Time_Period_ID=Deaths.Time_Period_ID
AND Time_Period.Time_Period_ID=People_Affected.Time_Period_ID
AND Country.Country_Area_Name = 'United States of America'
GO
SELECT * FROM UnitedStatesData
```

| dbo_UnitedStatesData | | | | |
|--------------------------|------------|---------------------|---------------------|---------------------|
| Country | TimePeriod | NumberofOccurrences | TotalNumberOfDeaths | TotalPeopleAffected |
| United States of America | 1990-1999 | 52 | 382 | 648334 |
| United States of America | 2000-2009 | 57 | 314 | 11325487 |
| United States of America | 2010-2019 | 40 | 335 | 313857 |
| * | | | | |

-- Based on our view, it looks like our data is fairly spread out and doesn't seem to follow a particular trend. We do see a large spike in total people affected in 2000-2009.
-- An interesting observation is that the US peaked in occurrences and total people affected in 2000-2009, but also managed to have the least amount of deaths in that same decade.

Reflection

At the beginning of my project, I truly didn't have many assumptions except for that I wanted to create a fairly simple database and I assumed that I just needed to pick a topic without many tables. What I did not assume, however is the extent of the data entry aspect of the data and how long it would take to enter all of the required data from my dataset (oops!). However, the data entry made for some really neat data analysis and an extremely impactful database! If there was anything I would have done differently, it would be to create a form for each of my data tables through Access at the beginning in order to quickly enter all of my data! Even the "lazy coder" copy & paste technique wasn't quite "lazy" enough for this aspect of the project. Something interesting I found was how quickly my mind jumped to additional tables that I could add to my database in order to make it more informational in the analysis phase. I would have loved to add a "Population" field to the "Country" table in order to compare the "People Affected" and "Deaths" by the whole population. I would have also added a "Country Area" to the "Country Tab" so I could have analyzed the "Occurrences" by the country size, which would have probably given me a different output from China and India (very large countries) having the most occurrences. Because I used a pre-made dataset from the UN data, it would have taken me a very long time to collect this additional data, so I ultimately made the decision to keep my database as simple as possible (which ended up not being as simple as I thought it would be!). In all, I believe that the creation of this database taught me how important the conceptual and logical models were to me throughout the entirety of the database construction. I constantly referred to those at the beginning, which ultimately streamlined my back-end process tenfold. I would love to continue learning how to use SQL and R in the future to create more powerful analyses in the future.

Summary

I relied heavily upon my conceptual and logical models in the beginning of my database creation in order to best understand the relationships between my tables. My database structure was actually quite simple in comparison to some other databases because my Occurrences, Deaths, and People Affected tables all followed the same structure with the same foreign keys of Country and Time Period, so it made my table creation and analysis portion much simpler. Having some background in Python and loops, I feel like there is a much more streamlined way to add my data to the database that takes place outside of just INSERT statements in SQL and Access Forms, so I would love to look into that concept more in-depth. All of my data questions were very numerically-based, so I was able to answer all of my data questions through SELECT statements in SQL Server and I didn't really need to use a stored procedure or function for those. In the future, it would be neat to get to know R better in order to provide more data analysis and graphs to display my data in a more aesthetically pleasing manner. Ultimately, I loved working with my database throughout the course and found the concept extremely interesting! I am looking forward to adding more to this database in order to make it even more powerful in the future.