In [2]:
```
#Find the 95th percentile of earthquake magnitude in Japan using the mbmagnitude type
#parsed. CSV.csv
#data is messy, remember for potential issues

#load pd
import pandas as pd

#load csv, csv might be wrong from github?
#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#earthquakes in japan with "mb" magnitude type
#parsed_place = country
japan_earthquakes = df[(df["parsed_place"] == "Japan") & (df["magType"] == "mb")]

#95th percentile of earthquake magnitude
percentile_95 = japan_earthquakes["mag"].quantile(0.95)

print(f"95th percentile of earthquake magnitude in Japan (mb type) is: {percentile_95:
```

```
The 95th percentile of earthquake magnitude in Japan (mb type) is: 4.90
```

In [5]:
```
#Find the percentage of earthquakes in Indonesia that were coupled with tsunamis.


#load pd
import pandas as pd

#load csv, csv might be wrong from github?
#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#indonesia
#parsed_place = place
indonesia_earthquakes = df[df["parsed_place"] == "Indonesia"]

#percentage of earthquakes with tsunamis
percentage_with_tsunami = (indonesia_earthquakes["tsunami"].sum() / len(indonesia_eart

print(f"percentage of earthquakes in Indonesia with tsunamis is: {percentage_with_tsur
```

```
percentage of earthquakes in Indonesia with tsunamis is: 23.13%
```

In [8]:
```
#Calculate summary statistics for earthquakes in Nevada.

#load pd
import pandas as pd

#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#earthquakes in Nevada
#parsed_place = place
nevada_earthquakes = df[df["parsed_place"] == "Nevada"]

#SS
summary_statistics = nevada_earthquakes["mag"].describe()
print("summary statistics for earthquakes in Nevada:")
print(summary_statistics)
```

```
summary statistics for earthquakes in Nevada:
count    681.000000
mean       0.500073
std        0.696710
min       -0.500000
25%       -0.100000
50%        0.400000
75%        0.900000
max        2.900000
Name: mag, dtype: float64
```

In [10]:

```
#Add a column indicating whether the earthquake happened in a country or USstate that
#load pd
import pandas as pd


#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#"ring of fire"
ring_of_fire_locations = [
    "Alaska", "Antarctica", "Bolivia", "California", "Canada", "Chile", "Costa Rica",
    "Ecuador", "Fiji", "Guatemala", "Indonesia", "Japan", "Kermadec Islands", "Mexico'
    "New Zealand", "Peru", "Philippines", "Russia", "Taiwan", "Tonga", "Washington"]

#new column "On_Ring_Of_Fire" boolean
df["On_Ring_Of_Fire"] = df["place"].str.split(', ').str[-1].isin(ring_of_fire_locatior
print(df.head())
```

```
  alert  cdi      code                                              detail  \
0   NaN  NaN  37389218  https://earthquake.usgs.gov/fdsnws/event/1/que...
1   NaN  NaN  37389202  https://earthquake.usgs.gov/fdsnws/event/1/que...
2   NaN  4.4  37389194  https://earthquake.usgs.gov/fdsnws/event/1/que...
3   NaN  NaN  37389186  https://earthquake.usgs.gov/fdsnws/event/1/que...
4   NaN  NaN  73096941  https://earthquake.usgs.gov/fdsnws/event/1/que...

       dmin  felt    gap           ids   mag magType  ...          time  \
0  0.008693   NaN   85.0  ,ci37389218,  1.35      ml  ...  1.539480e+12
1  0.020030   NaN   79.0  ,ci37389202,  1.29      ml  ...  1.539480e+12
2  0.021370  28.0   21.0  ,ci37389194,  3.42      ml  ...  1.539480e+12
3  0.026180   NaN   39.0  ,ci37389186,  0.44      ml  ...  1.539470e+12
4  0.077990   NaN  192.0  ,nc73096941,  2.16      md  ...  1.539470e+12

                          title  tsunami        type  \
0  M 1.4 - 9km NE of Aguanga, CA        0  earthquake
1  M 1.3 - 9km NE of Aguanga, CA        0  earthquake
2  M 3.4 - 8km NE of Aguanga, CA        0  earthquake
3  M 0.4 - 9km NE of Aguanga, CA        0  earthquake
4  M 2.2 - 10km NW of Avenal, CA        0  earthquake

                                              types     tz       updated  \
0         ,geoserve,nearby-cities,origin,phase-data, -480.0  1.539480e+12
1         ,geoserve,nearby-cities,origin,phase-data, -480.0  1.539480e+12
2  ,dyfi,focal-mechanism,geoserve,nearby-cities,o... -480.0  1.539540e+12
3         ,geoserve,nearby-cities,origin,phase-data, -480.0  1.539480e+12
4  ,geoserve,nearby-cities,origin,phase-data,scit... -480.0  1.539480e+12

                                                 url  parsed_place  \
0  https://earthquake.usgs.gov/earthquakes/eventp...    California
1  https://earthquake.usgs.gov/earthquakes/eventp...    California
2  https://earthquake.usgs.gov/earthquakes/eventp...    California
3  https://earthquake.usgs.gov/earthquakes/eventp...    California
4  https://earthquake.usgs.gov/earthquakes/eventp...    California

  On_Ring_Of_Fire
0           False
1           False
2           False
3           False
4           False

[5 rows x 28 columns]
```

In [13]:

```
#calculate the number of earthquakes in the Ring of Fire locations and the numberoutsi

#load pd
import pandas as pd

#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#locations on the Ring of Fire
ring_of_fire_locations = ["Alaska", "Antarctica", "Bolivia", "California", "Canada", '
    "Ecuador", "Fiji", "Guatemala", "Indonesia", "Japan", "Kermadec Islands", "Mexico'
    "New Zealand", "Peru", "Philippines", "Russia", "Taiwan", "Tonga", "Washington"]

#new column "On_Ring_Of_Fire" boolean
df["On_Ring_Of_Fire"] = df["place"].str.split(', ').str[-1].isin(ring_of_fire_locatior
```

```
#number of earthquakes inside and outside of the Ring of Fire
inside_ring_of_fire = df["On_Ring_Of_Fire"].sum()
outside_ring_of_fire = len(df) - inside_ring_of_fire

print(f"# of earthquakes inside ring of fire: {inside_ring_of_fire}")
print(f"# of earthquakes outside ring of fire: {outside_ring_of_fire}")
```

```
# of earthquakes inside ring of fire: 4387
# of earthquakes outside ring of fire: 4945
```

In [14]:

```
#Find the tsunami count along the ring of fire

#load pd
import pandas as pd

#parsed. CSV.csv
df = pd.read_csv("parsed. CSV.csv")

#locations of ring of fire
ring_of_fire_locations = ["Alaska", "Antarctica", "Bolivia", "California", "Canada", '
    "Ecuador", "Fiji", "Guatemala", "Indonesia", "Japan", "Kermadec Islands", "Mexico'
    "New Zealand", "Peru", "Philippines", "Russia", "Taiwan", "Tonga", "Washington"]

#earthquakes in Ring of Fire locations with tsunamis
ring_of_fire_tsunamis = df[(df["place"].str.split(', ').str[-1].isin(ring_of_fire_loca

#count of tsunamis along the Ring of Fire
tsunami_count = len(ring_of_fire_tsunamis)
print(f"tsunamis along the ring of fire is: {tsunami_count}")
```

```
tsunamis along the ring of fire is: 43
```

In [ ]: