Import Libraries

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np

import warnings
warnings.filterwarnings('ignore')
```

Import Dataset

```
glob_ter = pd.read_csv("globalterrorismdb_0718dist.csv")
glob_ter.head(5)
```

```
        eventid  iyear  imonth  iday approxdate  extended resolution
country  \
0  197000000001   1970       7     2        NaN         0        NaN
58
1  197000000002   1970       0     0        NaN         0        NaN
130
2  197001000001   1970       1     0        NaN         0        NaN
160
3  197001000002   1970       1     0        NaN         0        NaN
78
4  197001000003   1970       1     0        NaN         0        NaN
101

          country_txt  region  ... addnotes scite1 scite2  scite3
dbsource  \
0  Dominican Republic       2  ...      NaN    NaN    NaN     NaN
PGIS
1              Mexico       1  ...      NaN    NaN    NaN     NaN
PGIS
2         Philippines       5  ...      NaN    NaN    NaN     NaN
PGIS
3              Greece       8  ...      NaN    NaN    NaN     NaN
PGIS
4               Japan       4  ...      NaN    NaN    NaN     NaN
PGIS

   INT_LOG  INT_IDEO INT_MISC INT_ANY  related
0        0         0        0       0      NaN
1        0         1        1       1      NaN
2       -9        -9        1       1      NaN
3       -9        -9        1       1      NaN
4       -9        -9        1       1      NaN

[5 rows x 135 columns]
```

Data Understanding

```
glob_ter.shape
```

```
(181691, 135)
```

```
glob_ter.dtypes
```

```
eventid        int64
iyear          int64
imonth         int64
iday           int64
approxdate    object
               ...
INT_LOG        int64
INT_IDEO       int64
INT_MISC       int64
INT_ANY        int64
related       object
Length: 135, dtype: object
```

```
glob_ter.isna().sum()
```

```
eventid            0
iyear              0
imonth             0
iday               0
approxdate    172452
               ...
INT_LOG            0
INT_IDEO           0
INT_MISC           0
INT_ANY            0
related       156653
Length: 135, dtype: int64
```

Data Preparation

```
for col in glob_ter.columns:
    print(col,end =", ")
```

```
eventid, iyear, imonth, iday, approxdate, extended, resolution,
country, country_txt, region, region_txt, provstate, city, latitude,
longitude, specificity, vicinity, location, summary, crit1, crit2,
crit3, doubtterr, alternative, alternative_txt, multiple, success,
suicide, attacktype1, attacktype1_txt, attacktype2, attacktype2_txt,
attacktype3, attacktype3_txt, targtype1, targtype1_txt, targsubtype1,
targsubtype1_txt, corp1, target1, natlty1, natlty1_txt, targtype2,
targtype2_txt, targsubtype2, targsubtype2_txt, corp2, target2,
natlty2, natlty2_txt, targtype3, targtype3_txt, targsubtype3,
targsubtype3_txt, corp3, target3, natlty3, natlty3_txt, gname,
gsubname, gname2, gsubname2, gname3, gsubname3, motive, guncertain1,
guncertain2, guncertain3, individual, nperps, nperpcap, claimed,
```

```
claimmode, claimmode_txt, claim2, claimmode2, claimmode2_txt, claim3,
claimmode3, claimmode3_txt, compclaim, weaptype1, weaptype1_txt,
weapsubtype1, weapsubtype1_txt, weaptype2, weaptype2_txt,
weapsubtype2, weapsubtype2_txt, weaptype3, weaptype3_txt,
weapsubtype3, weapsubtype3_txt, weaptype4, weaptype4_txt,
weapsubtype4, weapsubtype4_txt, weapdetail, nkill, nkillus, nkillter,
nwound, nwoundus, nwoundte, property, propextent, propextent_txt,
propvalue, propcomment, ishostkid, nhostkid, nhostkidus, nhours,
ndays, divert, kidhijcountry, ransom, ransomamt, ransomamtus,
ransompaid, ransompaidus, ransomnote, hostkidoutcome,
hostkidoutcome_txt, nreleased, addnotes, scite1, scite2, scite3,
dbsource, INT_LOG, INT_IDEO, INT_MISC, INT_ANY, related,
```

Required Columns

iyear (Numeric Variable) : This field contains the year in which the incident occurred. In the case of incident(s) occurring over an extended period, the field will record the year when the incident was initiated.

imonth (Numeric Variable) : This field contains the number of the month in which the incident occurred. In the case of incident(s) occurring over an extended period, the field will record the month when the incident was initiated.

iday (Numeric Variable) : This field contains the numeric day of the month on which the incident occurred. In the case of incident(s) occurring over an extended period, the field will record the day when the incident was initiated.

```
#Required Columns
req_col = ["eventid", "iyear", "imonth", "iday", "country_txt",
"region_txt", "provstate", "city", "latitude", "longitude",
"attacktype1_txt", "targtype1_txt",'weaptype1_txt',
 "weapsubtype1_txt", "nkill", "nkillter", "nwound", "nwoundte"]

glob_ter_final =
pd.read_csv("globalterrorismdb_0718dist.csv",usecols=req_col)

glob_ter_final.head()
```

```
        eventid  iyear  imonth  iday         country_txt  \
0  197000000001   1970       7     2  Dominican Republic
1  197000000002   1970       0     0              Mexico
2  197001000001   1970       1     0         Philippines
3  197001000002   1970       1     0              Greece
4  197001000003   1970       1     0               Japan

                    region_txt provstate           city   latitude  \
0  Central America & Caribbean       NaN  Santo Domingo  18.456792
1                North America   Federal    Mexico city  19.371887
2              Southeast Asia    Tarlac        Unknown  15.478598
3              Western Europe    Attica         Athens  37.997490
4                   East Asia   Fukouka        Fukouka  33.580412
```

```
    longitude                 attacktype1_txt
targtype1_txt  \
0  -69.951164                   Assassination  Private Citizens &
Property
1  -99.086624     Hostage Taking (Kidnapping)      Government
(Diplomatic)
2  120.599741                   Assassination          Journalists &
Media
3   23.762728               Bombing/Explosion      Government
(Diplomatic)
4  130.396361  Facility/Infrastructure Attack      Government
(Diplomatic)

  weaptype1_txt        weapsubtype1_txt  nkill  nkillter  nwound
nwoundte
0       Unknown                     NaN    1.0       NaN     0.0
NaN
1       Unknown                     NaN    0.0       NaN     0.0
NaN
2       Unknown                     NaN    1.0       NaN     0.0
NaN
3    Explosives  Unknown Explosive Type    NaN       NaN     NaN
NaN
4    Incendiary                     NaN    NaN       NaN     NaN
NaN

glob_ter_final.shape

(181691, 18)

glob_ter_final.dtypes

eventid               int64
iyear                 int64
imonth                int64
iday                  int64
country_txt          object
region_txt           object
provstate            object
city                 object
latitude            float64
longitude           float64
attacktype1_txt      object
targtype1_txt        object
weaptype1_txt        object
weapsubtype1_txt     object
nkill               float64
nkillter            float64
nwound              float64
```

```
nwoundte            float64
dtype: object
```

```
glob_ter_final.isna().sum()
```

```
eventid                 0
iyear                   0
imonth                  0
iday                    0
country_txt             0
region_txt              0
provstate             421
city                  434
latitude             4556
longitude            4557
attacktype1_txt         0
targtype1_txt           0
weaptype1_txt           0
weapsubtype1_txt    20768
nkill               10313
nkillter            66958
nwound              16311
nwoundte            69143
dtype: int64
```

FILL NULL Values

```
glob_ter_final[["provstate", "city",]] = glob_ter_final[["provstate",
"city",]].fillna(value="unknown",axis=1)

glob_ter_final[["latitude", "longitude"]] =
glob_ter_final[["latitude", "longitude"]].fillna(value=0,axis=1)

glob_ter_final["weapsubtype1_txt"] =
glob_ter_final["weapsubtype1_txt"].fillna(value="unknown",axis=0)

glob_ter_final[["nkill", "nkillter", "nwound", "nwoundte"]] =
glob_ter_final[["nkill", "nkillter", "nwound",
"nwoundte"]].fillna(value=0,axis=1)

glob_ter_final.isna().sum()
```

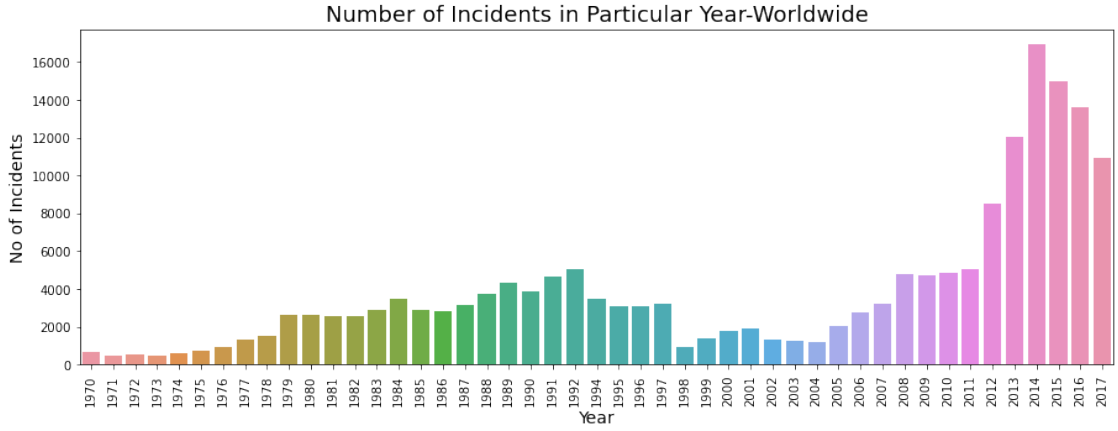
```
eventid             0
iyear               0
imonth              0
iday                0
country_txt         0
region_txt          0
provstate           0
city                0
latitude            0
longitude           0
attacktype1_txt     0
```

```
targtype1_txt       0
weaptype1_txt       0
weapsubtype1_txt    0
nkill               0
nkillter            0
nwound              0
nwoundte            0
dtype: int64
```

Data Visualization

```
plt.figure(figsize=(15,5))
sns.countplot(x=glob_ter_final["iyear"])
plt.title("Number of Incidents in Particular Year-
Worldwide",fontsize=18)
plt.xlabel("Year",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final["iyear"].value_counts().sort_values(ascending=Fal
se).head(5))
plt.show()
```

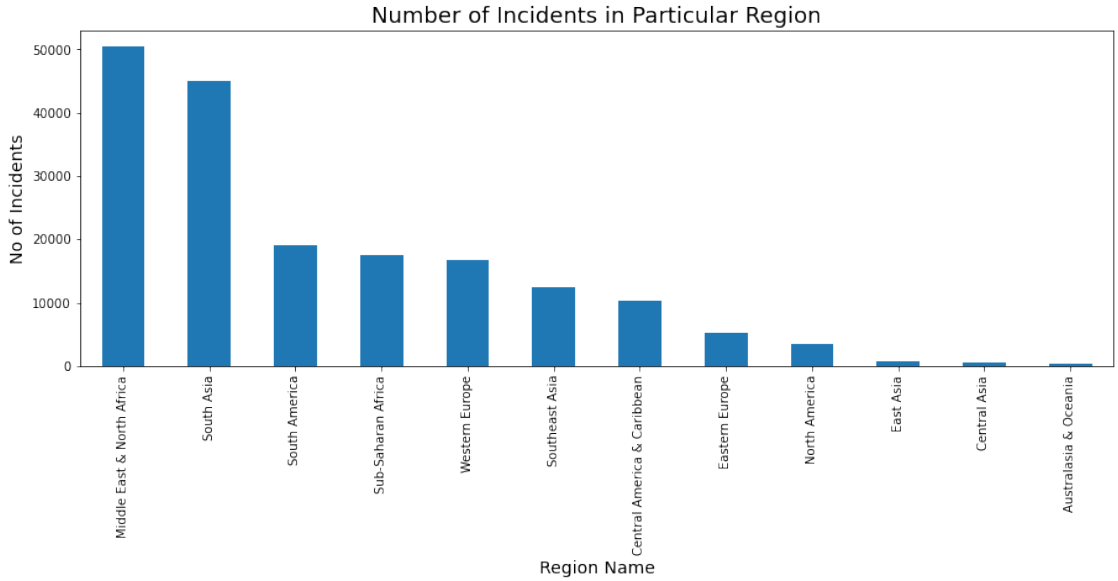
```
2014    16903
2015    14965
2016    13587
2013    12036
2017    10900
Name: iyear, dtype: int64
```




```
plt.figure(figsize=(15,5))
glob_ter_final["region_txt"].value_counts().sort_values(ascending=Fals
e).plot.bar()
plt.title("Number of Incidents in Particular Region",fontsize=18)
plt.xlabel("Region Name",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final["region_txt"].value_counts().sort_values(ascendin
```

```
g=False))
plt.show()
```

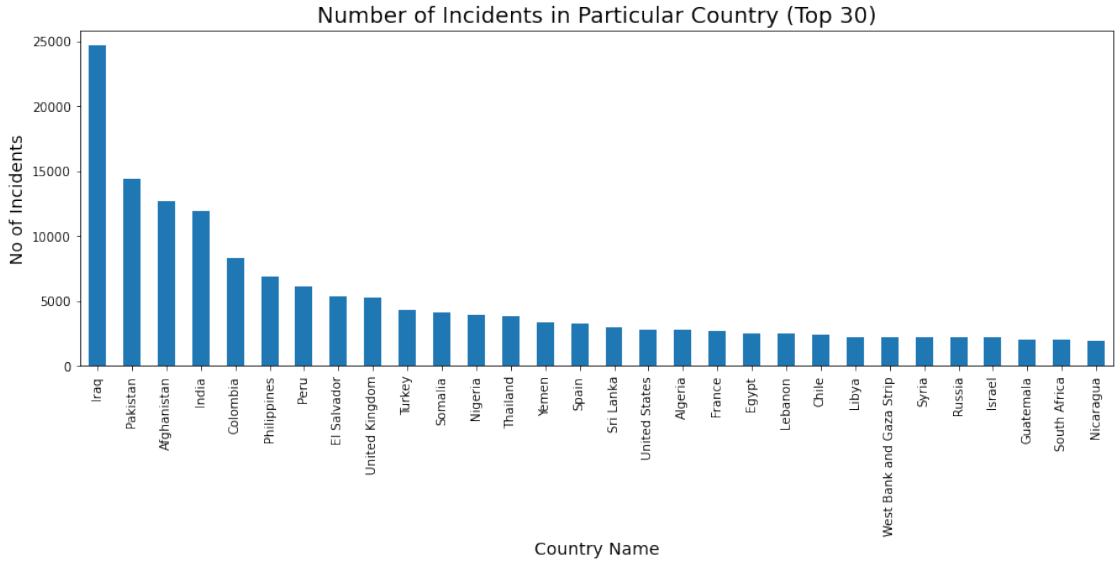
```
Middle East & North Africa     50474
South Asia                     44974
South America                  18978
Sub-Saharan Africa             17550
Western Europe                 16639
Southeast Asia                 12485
Central America & Caribbean    10344
Eastern Europe                  5144
North America                   3456
East Asia                        802
Central Asia                     563
Australasia & Oceania            282
Name: region_txt, dtype: int64
```




```
plt.figure(figsize=(15,5))
glob_ter_final["country_txt"].value_counts().sort_values(ascending=Fal
se).head(30).plot.bar()
plt.title("Number of Incidents in Particular Country (Top
30)",fontsize=18)
plt.xlabel("Country Name",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final["country_txt"].value_counts().sort_values(ascendi
ng=False).head(5))
plt.show()
```

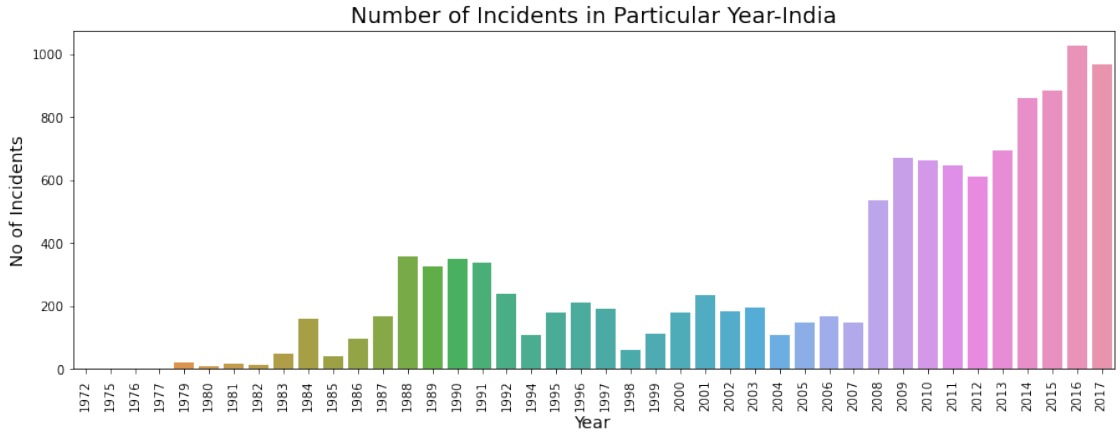
```
Iraq           24636
Pakistan       14368
Afghanistan    12731
India          11960
```

```
Colombia        8306
Name: country_txt, dtype: int64
```



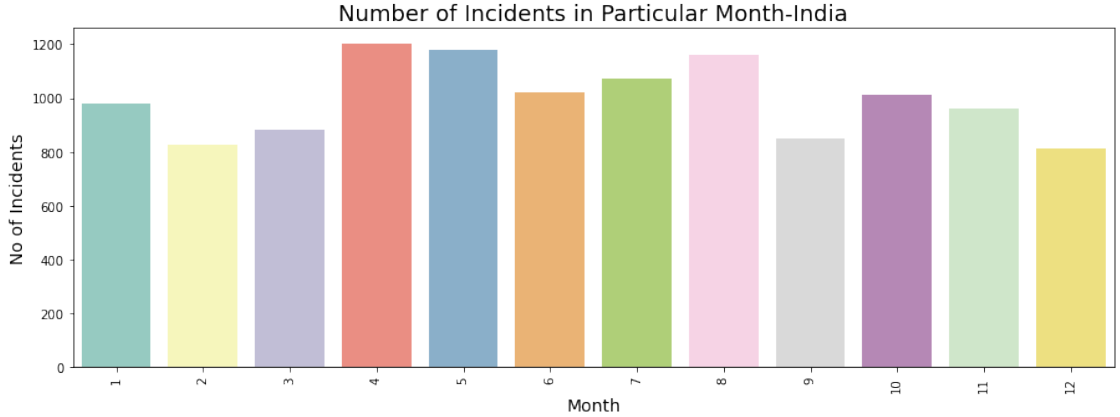

```
plt.figure(figsize=(15,5))
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["iyear"])
plt.title("Number of Incidents in Particular Year-India",fontsize=18)
plt.xlabel("Year",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final[glob_ter_final["country_txt"]=="India"]
["iyear"].value_counts().sort_values(ascending=False).head(5))
plt.show()
```

```
2016    1025
2017     966
2015     884
2014     860
2013     694
Name: iyear, dtype: int64
```




```
plt.figure(figsize=(15,5))
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["imonth"],palette="Set3")
plt.title("Number of Incidents in Particular Month-India",fontsize=18)
plt.xlabel("Month",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final[glob_ter_final["country_txt"]=="India"]
["imonth"].value_counts().sort_values(ascending=False).head(5))
plt.show()
```

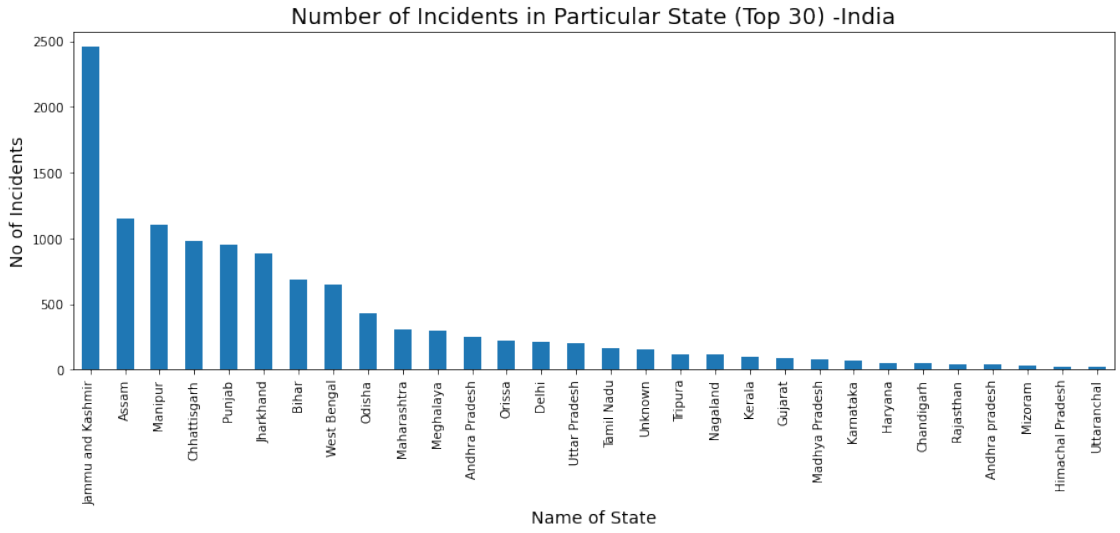
```
4    1201
5    1181
8    1160
7    1074
6    1021
Name: imonth, dtype: int64
```




```
plt.figure(figsize=(15,5))
glob_ter_final[glob_ter_final["country_txt"]=="India"]
["provstate"].value_counts().sort_values(ascending=False).head(30).plo
t.bar()
plt.title("Number of Incidents in Particular State (Top 30) -
India",fontsize=18)
```

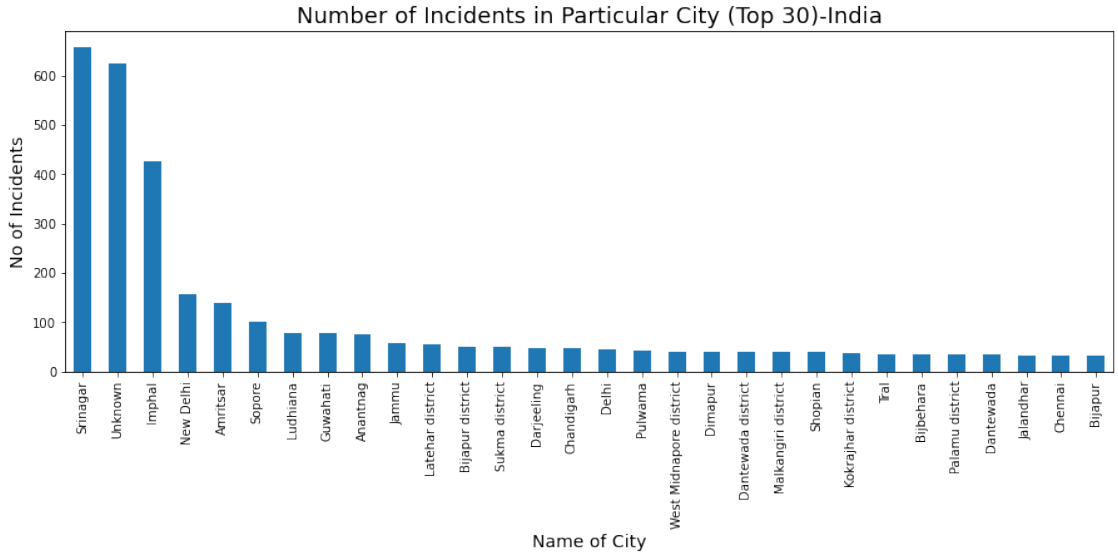
```
plt.xlabel("Name of State",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final[glob_ter_final["country_txt"]=="India"]
["provstate"].value_counts().sort_values(ascending=False).head(5))
plt.show()
```

```
Jammu and Kashmir    2454
Assam                1151
Manipur              1100
Chhattisgarh          979
Punjab                949
Name: provstate, dtype: int64
```




```
plt.figure(figsize=(15,5))
glob_ter_final[glob_ter_final["country_txt"]=="India"]
["city"].value_counts().sort_values(ascending=False).head(30).plot.bar
()
plt.title("Number of Incidents in Particular City (Top 30)-
India",fontsize=18)
plt.xlabel("Name of City",fontsize=14)
plt.ylabel("No of Incidents",fontsize=14)
plt.xticks(rotation=90)
print(glob_ter_final[glob_ter_final["country_txt"]=="India"]
["city"].value_counts().sort_values(ascending=False).head(5))
plt.show()
```

```
Srinagar     658
Unknown      624
Imphal       426
New Delhi    157
Amritsar     138
Name: city, dtype: int64
```

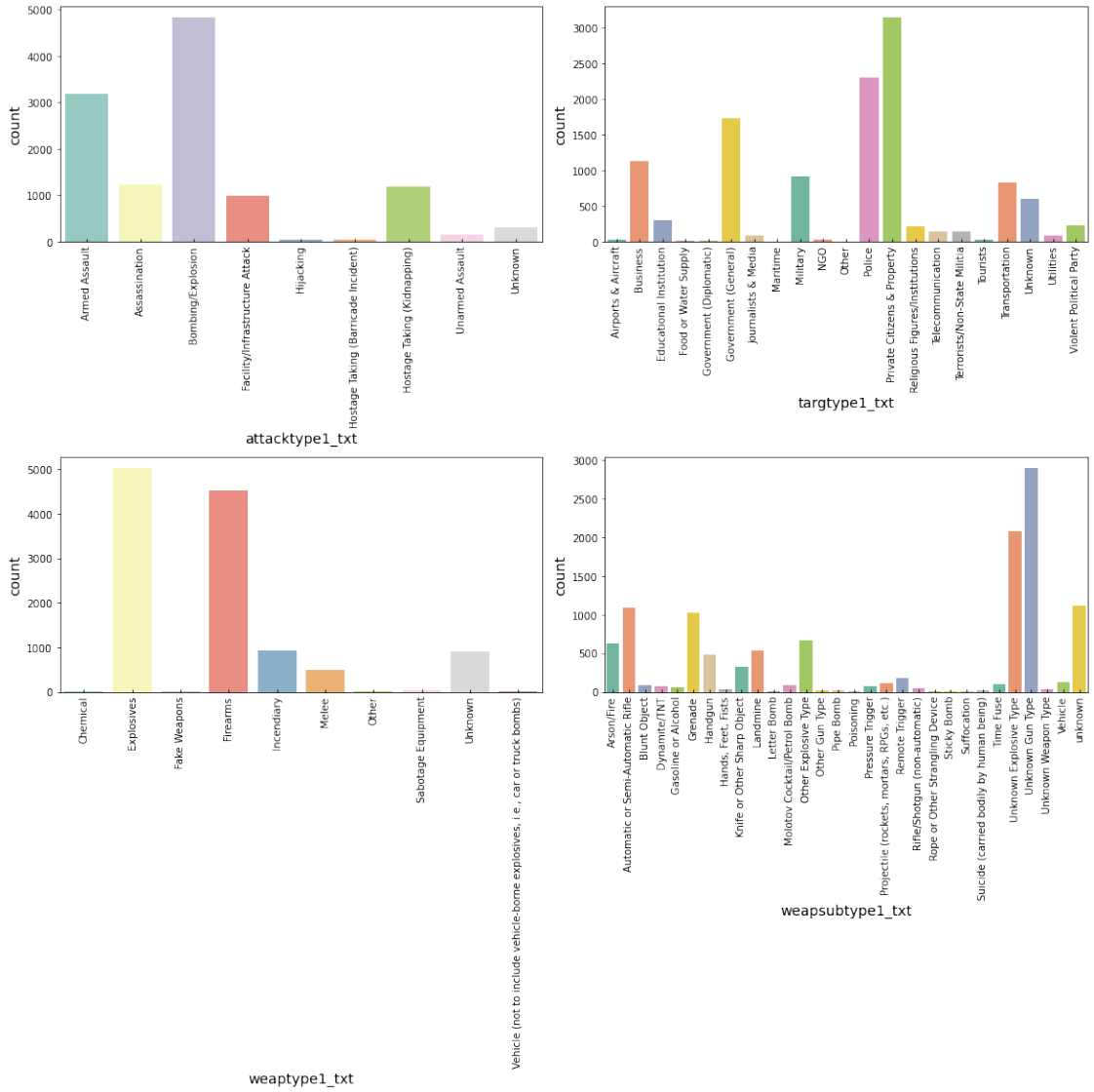



```
glob_ter_final.head()
```

```
        eventid  iyear  imonth  iday         country_txt  \
0  197000000001   1970       7     2  Dominican Republic
1  197000000002   1970       0     0              Mexico
2  197001000001   1970       1     0         Philippines
3  197001000002   1970       1     0              Greece
4  197001000003   1970       1     0               Japan

                    region_txt provstate           city   latitude  \
0  Central America & Caribbean   unknown  Santo Domingo  18.456792
1                North America   Federal    Mexico city  19.371887
2               Southeast Asia    Tarlac        Unknown  15.478598
3               Western Europe    Attica         Athens  37.997490
4                    East Asia   Fukouka        Fukouka  33.580412

    longitude                attacktype1_txt
targtype1_txt  \
0  -69.951164                   Assassination  Private Citizens &
Property
1  -99.086624     Hostage Taking (Kidnapping)      Government
(Diplomatic)
2  120.599741                   Assassination          Journalists &
Media
3   23.762728               Bombing/Explosion      Government
(Diplomatic)
4  130.396361  Facility/Infrastructure Attack      Government
(Diplomatic)

  weaptype1_txt        weapsubtype1_txt  nkill  nkillter  nwound
nwoundte
0       Unknown                 unknown    1.0       0.0     0.0
0.0
```

```
1       Unknown                 unknown    0.0       0.0     0.0
0.0
2       Unknown                 unknown    1.0       0.0     0.0
0.0
3    Explosives  Unknown Explosive Type    0.0       0.0     0.0
0.0
4    Incendiary                 unknown    0.0       0.0     0.0
0.0
```

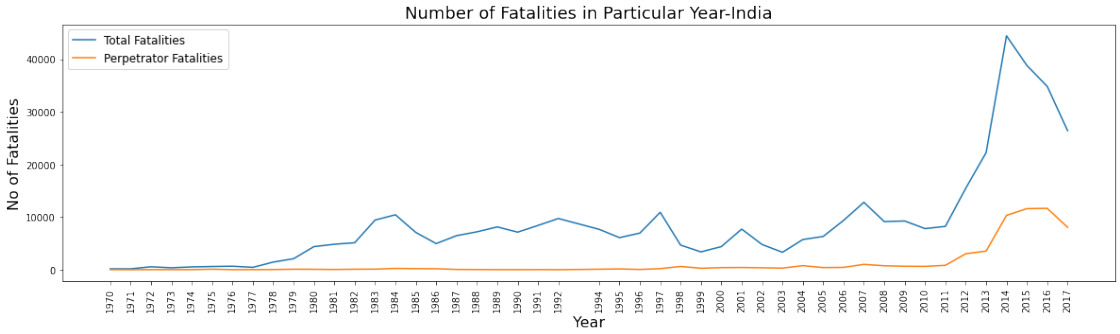
```
fig, ax=plt.subplots(2,2,figsize=(15,15))
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["attacktype1_txt"].sort_values(),palette="Set3",ax=ax[0,0])
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["targtype1_txt"].sort_values(),palette="Set2",ax=ax[0,1])
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["weaptype1_txt"].sort_values(),palette="Set3",ax=ax[1,0])
sns.countplot(x=glob_ter_final[glob_ter_final["country_txt"]=="India"]
["weapsubtype1_txt"].sort_values(),palette="Set2",ax=ax[1,1])
for ax in fig.axes:

ax.tick_params(axis='x',labelrotation=90,direction="in",which="major")
    ax.xaxis.get_label().set_fontsize(14)
    ax.yaxis.get_label().set_fontsize(14)
fig.tight_layout()
plt.show()
```




```
df = glob_ter_final.groupby(["iyear"],as_index=True)
["nkill","nkillter"].sum()
df.plot.line(figsize=(20,5)).legend(["Total Fatalities","Perpetrator
Fatalities"],fontsize=12)
plt.title("Number of Fatalities in Particular Year-India",fontsize=18)
plt.xlabel("Year",fontsize=16)
plt.ylabel("No of Fatalities",fontsize=16)
plt.xticks(glob_ter_final["iyear"].unique(),rotation=90)
print(glob_ter_final.groupby(["iyear"],as_index=False)
["nkill","nkillter"].sum().sort_values(by="nkill",ascending=False).hea
d(5))
plt.show()
```

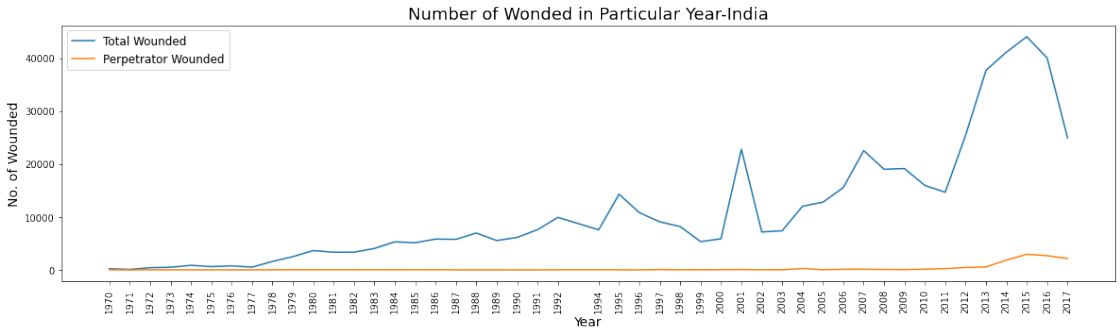
```
    iyear    nkill  nkillter
43   2014  44490.0   10341.0
44   2015  38853.0   11623.0
45   2016  34871.0   11672.0
```

```
46   2017  26445.0    8075.0
42   2013  22273.0    3545.0
```



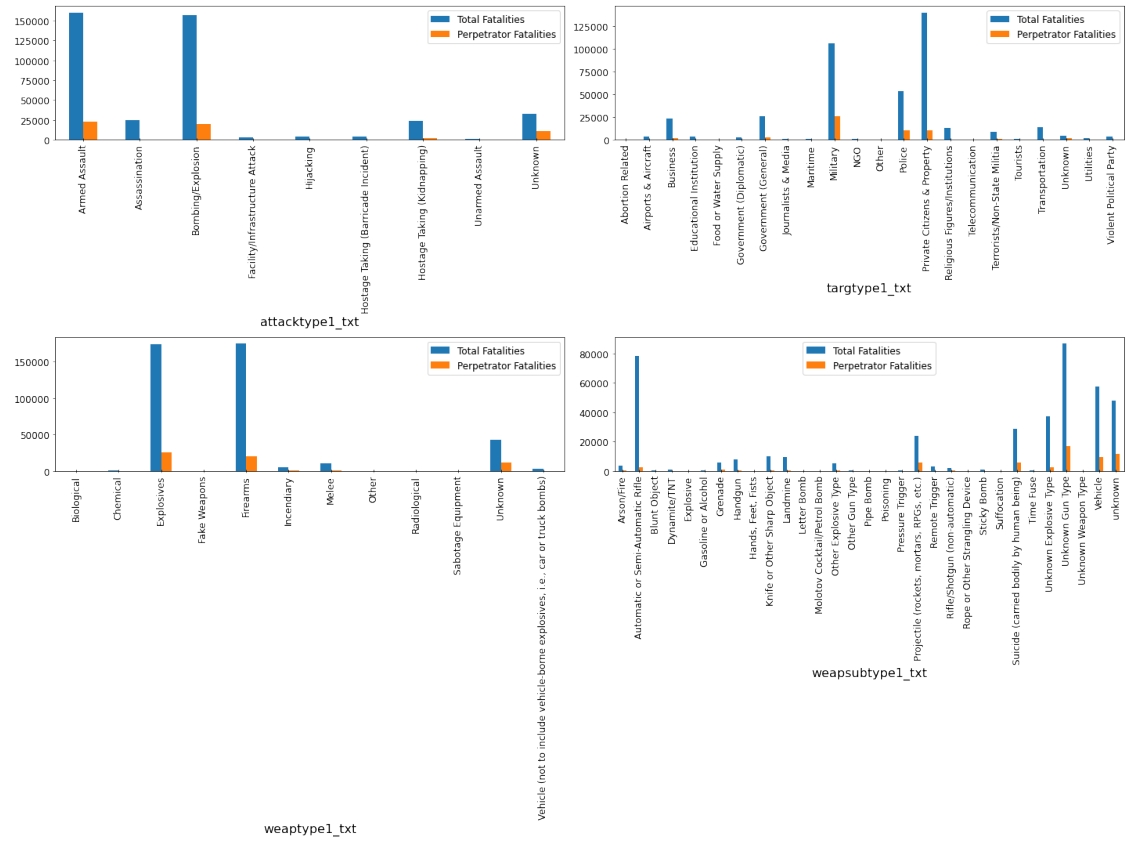

```
df = glob_ter_final.groupby(["iyear"],as_index=True)
["nwound","nwoundte"].sum()
df.plot.line(figsize=(20,5)).legend(["Total Wounded","Perpetrator
Wounded"],fontsize=12)
plt.title("Number of Wonded in Particular Year-India",fontsize=18)
plt.xlabel("Year",fontsize=14)
plt.ylabel("No. of Wounded",fontsize=14)
plt.xticks(glob_ter_final["iyear"].unique(),rotation=90)
print(glob_ter_final.groupby(["iyear"],as_index=False)
["nwound","nwoundte"].sum().sort_values(by="nwound",ascending=False).h
ead(5))
plt.show()
```

```
    iyear   nwound  nwoundte
44   2015  44043.0    2946.0
43   2014  41128.0    1848.0
45   2016  40001.0    2677.0
42   2013  37688.0     557.0
41   2012  25445.0     444.0
```




```
fig, ax=plt.subplots(2,2)
glob_ter_final.groupby(["attacktype1_txt"],as_index=True)
["nkill","nkillter"].sum().plot.bar(figsize=(20,15),ax=ax[0,0]).legend
(["Total Fatalities","Perpetrator Fatalities"],fontsize=12)
glob_ter_final.groupby(["targtype1_txt"],as_index=True)
["nkill","nkillter"].sum().plot.bar(figsize=(20,15),ax=ax[0,1]).legend
(["Total Fatalities","Perpetrator Fatalities"],fontsize=12)
```

```
glob_ter_final.groupby(["weaptype1_txt"],as_index=True)
["nkill","nkillter"].sum().plot.bar(figsize=(20,15),ax=ax[1,0]).legend
(["Total Fatalities","Perpetrator Fatalities"],fontsize=12)
glob_ter_final.groupby(["weapsubtype1_txt"],as_index=True)
["nkill","nkillter"].sum().plot.bar(figsize=(20,15),ax=ax[1,1]).legend
(["Total Fatalities","Perpetrator Fatalities"],fontsize=12)
for ax in fig.axes:

ax.tick_params(axis='x',labelrotation=90,which="major",labelsize=12,
direction="inout")
    ax.tick_params(axis='y',labelsize=12)
    ax.xaxis.get_label().set_fontsize(16)
    ax.yaxis.get_label().set_fontsize(16)
fig.tight_layout()
plt.show()
```



##

#