

Exploratory Analysis - Terrorism

Author: Zeel Tanna

Data Set: <https://www.kaggle.com/datasets/itssuru/global-terrorism>

****IMPORT LIBRARIES NEEDED FOR
ANALYSIS****

```
In [93]: import numpy as np #provides a high-performance multidimensional array object
import pandas as pd #allows us to perform analysis of big data
import matplotlib as mpl #data visualization library
import matplotlib.pyplot as plt #used for data visualization and plotting on graphs
import seaborn as sns #Library for making statistical graphics
%matplotlib inline
```

****IMPORTING AND OBSERVE THE DATA****

```
In [94]: data=pd.read_csv(r"C:\Users\zeelt\Desktop\GRIP SPARKS PROJECTS\Global Terrorism - S
df=pd.DataFrame(data)
print("Data is successfully imported")
df.head()
```

Data is successfully imported

```
Out[94]:
```

	eventid	iyear	imonth	iday	approxdate	extended	resolution	country	country_txt	re
0	1970000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	
1	1970000000002	1970	0	0	NaN	0	NaN	130	Mexico	
2	1970010000001	1970	1	0	NaN	0	NaN	160	Philippines	
3	1970010000002	1970	1	0	NaN	0	NaN	78	Greece	
4	1970010000003	1970	1	0	NaN	0	NaN	101	Japan	

5 rows × 135 columns

```
In [95]: df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Columns: 135 entries, eventid to related
dtypes: float64(55), int64(22), object(58)
memory usage: 187.1+ MB
```

```
In [96]: df.shape
```

```
Out[96]: (181691, 135)
```

```
In [97]: df.columns
```

```
Out[97]: Index(['eventid', 'iyear', 'imonth', 'iday', 'approxdate', 'extended',  
               'resolution', 'country', 'country_txt', 'region',  
               ...  
               'addnotes', 'scite1', 'scite2', 'scite3', 'dbsource', 'INT_LOG',  
               'INT_IDEO', 'INT_MISC', 'INT_ANY', 'related'],  
              dtype='object', length=135)
```

```
In [98]: for i in df.columns:  
         print(i,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,

****CLEANING THE DATA SET****

```
In [99]: df=df[["iyear","imonth","iday","country_txt","region_txt","provstate","city",  
               "latitude","longitude","location","summary","attacktype1_txt","targtype1_txt",  
               "gname","motive","weaptype1_txt","nkill","nwound","addnotes"]]  
df.head()
```

```
Out[99]:
```

	iyear	imonth	iday	country_txt	region_txt	provstate	city	latitude	longitude	locat
0	1970	7	2	Dominican Republic	Central America & Caribbean	NaN	Santo Domingo	18.456792	-69.951164	N
1	1970	0	0	Mexico	North America	Federal	Mexico city	19.371887	-99.086624	N
2	1970	1	0	Philippines	Southeast Asia	Tarlac	Unknown	15.478598	120.599741	N
3	1970	1	0	Greece	Western Europe	Attica	Athens	37.997490	23.762728	N
4	1970	1	0	Japan	East Asia	Fukouka	Fukouka	33.580412	130.396361	N

```
In [100...] df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Data columns (total 19 columns):
#   Column                Non-Null Count  Dtype
---  -
0   iyear                  181691 non-null int64
1   imonth                 181691 non-null int64
2   iday                   181691 non-null int64
3   country_txt            181691 non-null object
4   region_txt             181691 non-null object
5   provstate              181270 non-null object
6   city                   181257 non-null object
7   latitude               177135 non-null float64
8   longitude              177134 non-null float64
9   location               55495 non-null object
10  summary                115562 non-null object
11  attacktype1_txt        181691 non-null object
12  targtype1_txt         181691 non-null object
13  gname                  181691 non-null object
14  motive                 50561 non-null object
15  weaptype1_txt          181691 non-null object
16  nkill                  171378 non-null float64
17  nwound                 165380 non-null float64
18  addnotes               28289 non-null object
dtypes: float64(4), int64(3), object(12)
memory usage: 26.3+ MB
```

```
In [101...] df.shape
```

```
Out[101]: (181691, 19)
```

```
In [102...] df.isnull().sum()
```

```
Out[102]: iyear          0
          imonth        0
          iday          0
          country_txt    0
          region_txt     0
          provstate      421
          city           434
          latitude       4556
          longitude      4557
          location       126196
          summary        66129
          attacktype1_txt 0
          targtype1_txt  0
          gname          0
          motive         131130
          weaptype1_txt   0
          nkill           10313
          nwound          16311
          addnotes       153402
          dtype: int64
```

```
In [103... df["nkill"]=df["nkill"].fillna(0)
            df["nwound"]=df["nwound"].fillna(0)
            df["Casualty"]=df["nkill"]+df["nwound"]
```

```
In [104... df.describe()
```

```
Out[104]:
```

	iyear	imonth	iday	latitude	longitude	nkill
count	181691.000000	181691.000000	181691.000000	177135.000000	1.771340e+05	181691.000000
mean	2002.638997	6.467277	15.505644	23.498343	-4.586957e+02	2.266860
std	13.259430	3.388303	8.814045	18.569242	2.047790e+05	11.227057
min	1970.000000	0.000000	0.000000	-53.154613	-8.618590e+07	0.000000
25%	1991.000000	4.000000	8.000000	11.510046	4.545640e+00	0.000000
50%	2009.000000	6.000000	15.000000	31.467463	4.324651e+01	0.000000
75%	2014.000000	9.000000	23.000000	34.685087	6.871033e+01	2.000000
max	2017.000000	12.000000	31.000000	74.633553	1.793667e+02	1570.000000

OBSERVATIONS TO BE MADE

1. The data consists of terrorist activities ranging from the year: 1970 to 2017
2. Maximum number of people killed in an event were: 1570
3. Maximum number of people wounded in an event were: 8191
4. Maximum number of total casualties in an event were: 9574

****VISUALIZING THE**

DATA**

YEAR WISE ATTACKS

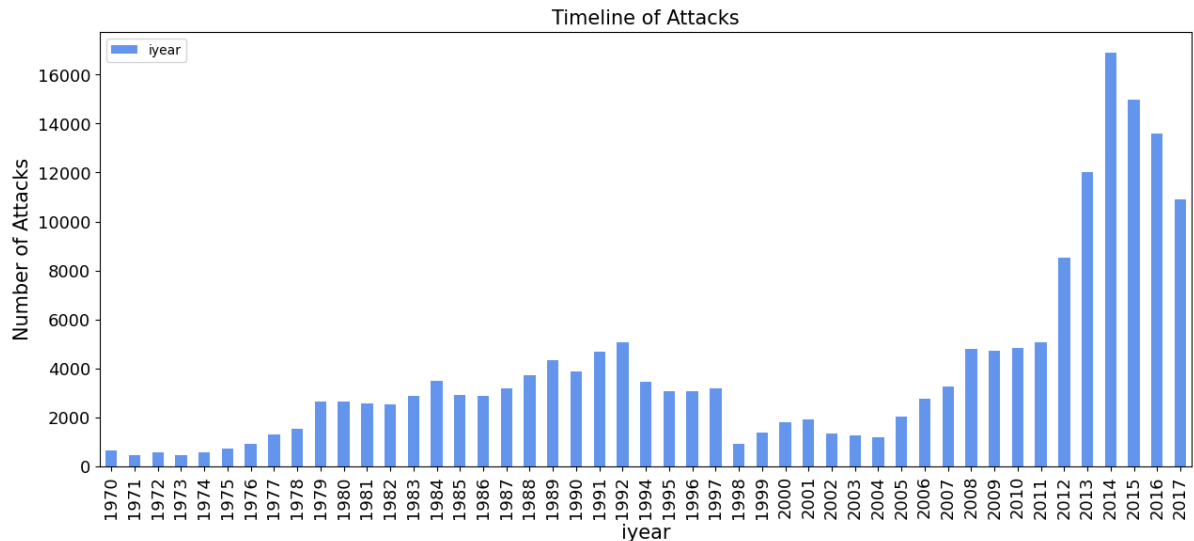
1. Number of Attacks Each Year

```
In [105]: attacks=df["iyear"].value_counts(dropna=False).sort_index().to_frame().reset_index()  
attacks.head()
```

Out[105]:

iyear	
Year	
1970	651
1971	471
1972	568
1973	473
1974	581

```
In [106]: attacks.plot(kind="bar",color="cornflowerblue",figsize=(15,6),fontsize=13)  
plt.title("Timeline of Attacks",fontsize=15)  
plt.xlabel("iyear",fontsize=15)  
plt.ylabel("Number of Attacks",fontsize=15)  
plt.show()
```



NOTE: (i) Most number of attacks are in the year **2014** : 16903 (ii) Least number of attacks in the year **1971** : 471

2. Total Casualties each Year: (Killed + Wounded)

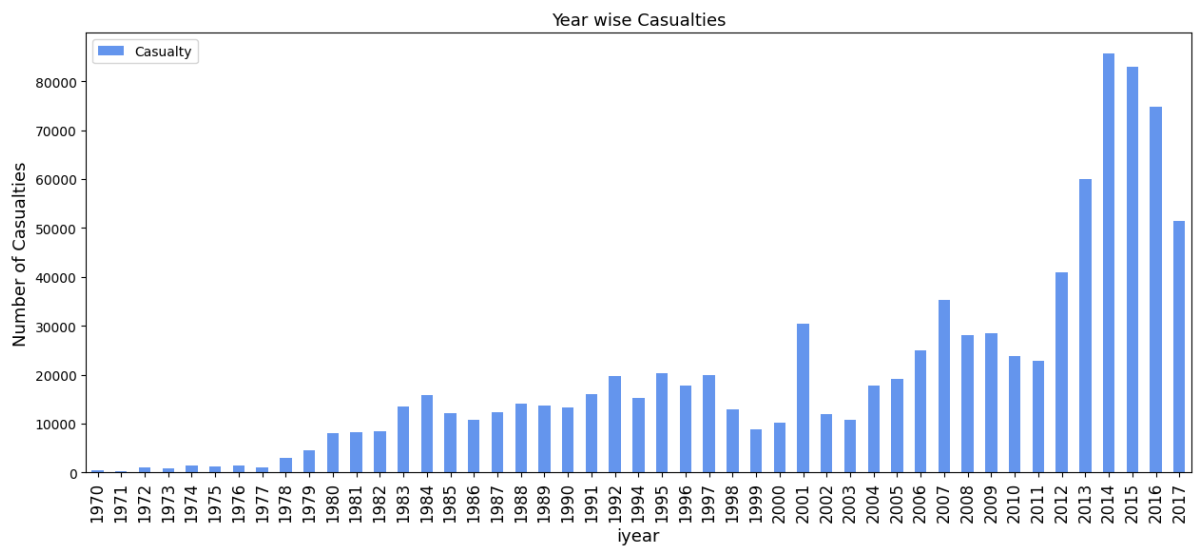
```
In [107]: yc=df[["iyear","Casualty"]].groupby("iyear").sum()  
yc.head()
```

Out[107]:

Casualty

iyear	
1970	386.0
1971	255.0
1972	975.0
1973	865.0
1974	1404.0

```
In [108.. yc.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Year wise Casualties",fontsize=13)
plt.xlabel("iyear",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



3. Killed in Each Year

```
In [109.. yk=df[["iyear","nkill"]].groupby("iyear").sum() #nkill is number of people killed
yk.head()
```

Out[109]:

nkill

iyear	
1970	174.0
1971	173.0
1972	566.0
1973	370.0
1974	539.0

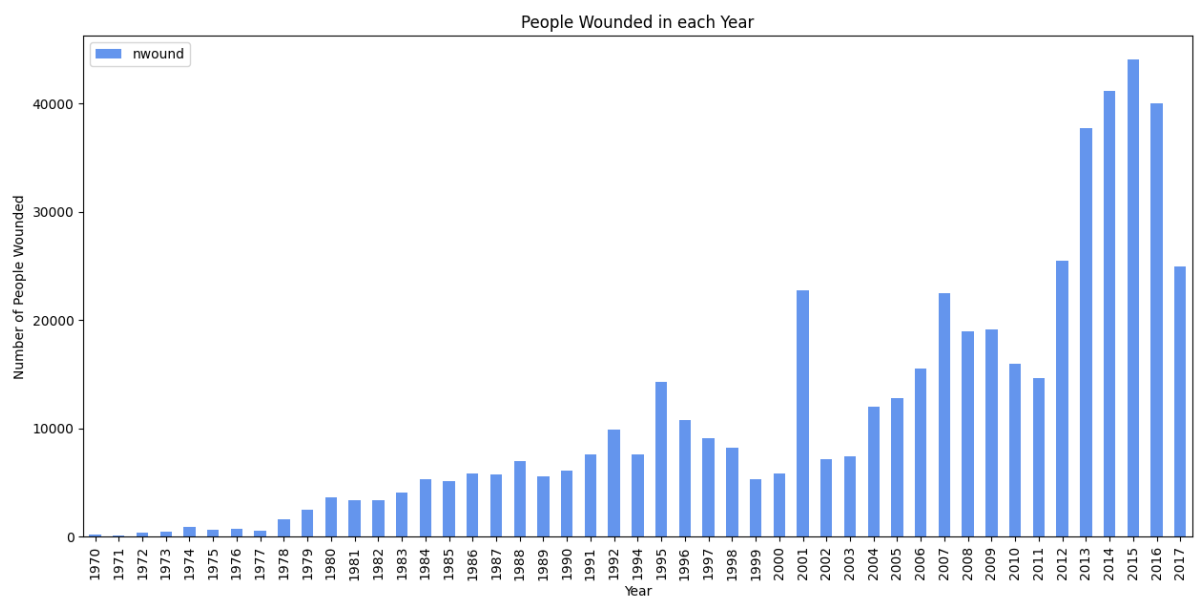
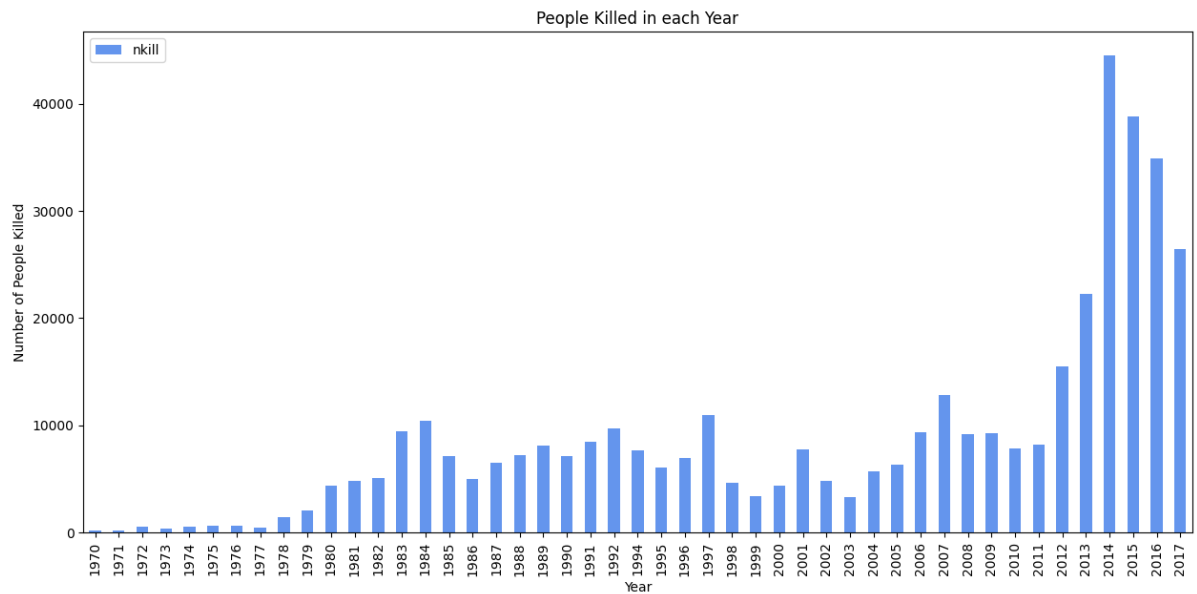
4. Wounded in Each Region

```
In [110]: yw=df[["iyear","nwound"]].groupby("iyear").sum() #nwound is number of people wounded  
yw.head()
```

```
Out[110]:
```

	nwound
iyear	
1970	212.0
1971	82.0
1972	409.0
1973	495.0
1974	865.0

```
In [111]: fig=plt.figure()  
ax0=fig.add_subplot(2,1,1)  
ax1=fig.add_subplot(2,1,2)  
  
#Killed  
yk.plot(kind="bar",color="cornflowerblue",figsize=(15,15),ax=ax0)  
ax0.set_title("People Killed in each Year")  
ax0.set_xlabel("Year")  
ax0.set_ylabel("Number of People Killed")  
  
#Wounded  
yw.plot(kind="bar",color="cornflowerblue",figsize=(15,15),ax=ax1)  
ax1.set_title("People Wounded in each Year")  
ax1.set_xlabel("Year")  
ax1.set_ylabel("Number of People Wounded")  
  
plt.show()
```



REGION WISE ATTACKS

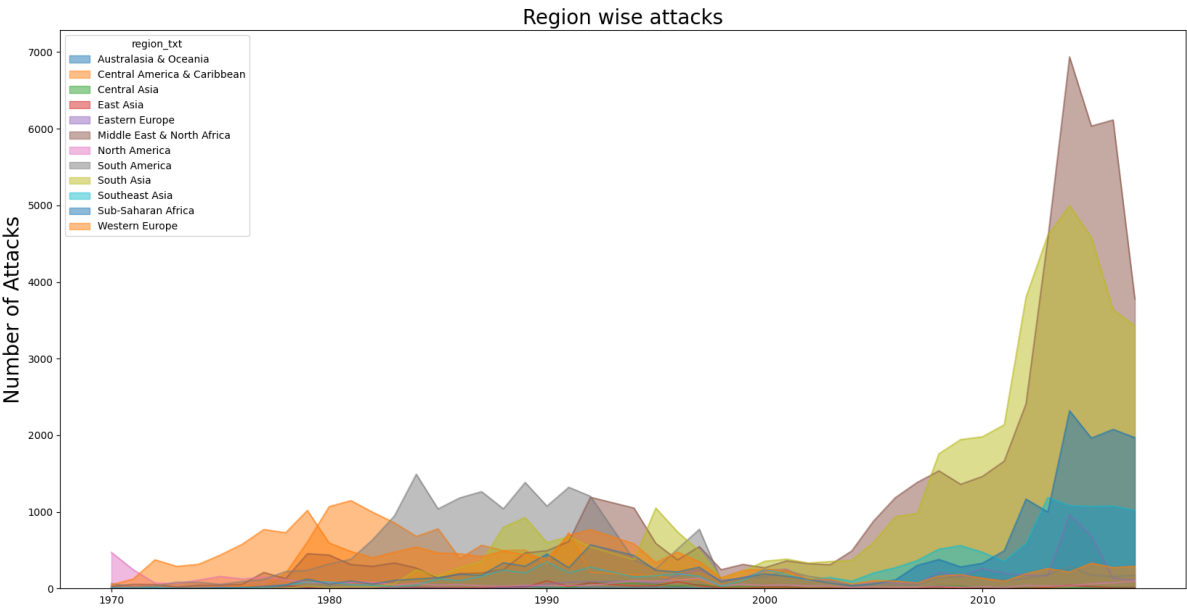
1. Distribution of Attacks over Regions from 1970-2017

```
In [112...] reg=pd.crosstab(df.iyear,df.region_txt)
reg.head()
```


Out[112]:

region_txt	Australasia & Oceania	Central America & Caribbean	Central Asia	East Asia	Eastern Europe	Middle East & North Africa	North America	South America	South Asia	Soi
iyear										
1970	1	7	0	2	12	28	472	65	1	
1971	1	5	0	1	5	55	247	24	0	
1972	8	3	0	0	1	53	73	33	1	
1973	1	6	0	2	1	19	64	83	1	
1974	1	11	0	4	2	42	111	81	2	

```
In [113... reg.plot(kind="area", stacked=False, alpha=0.5,figsize=(20,10))
plt.title("Region wise attacks",fontsize=20)
plt.xlabel("",fontsize=20)
plt.ylabel("Number of Attacks",fontsize=20)
plt.show()
```

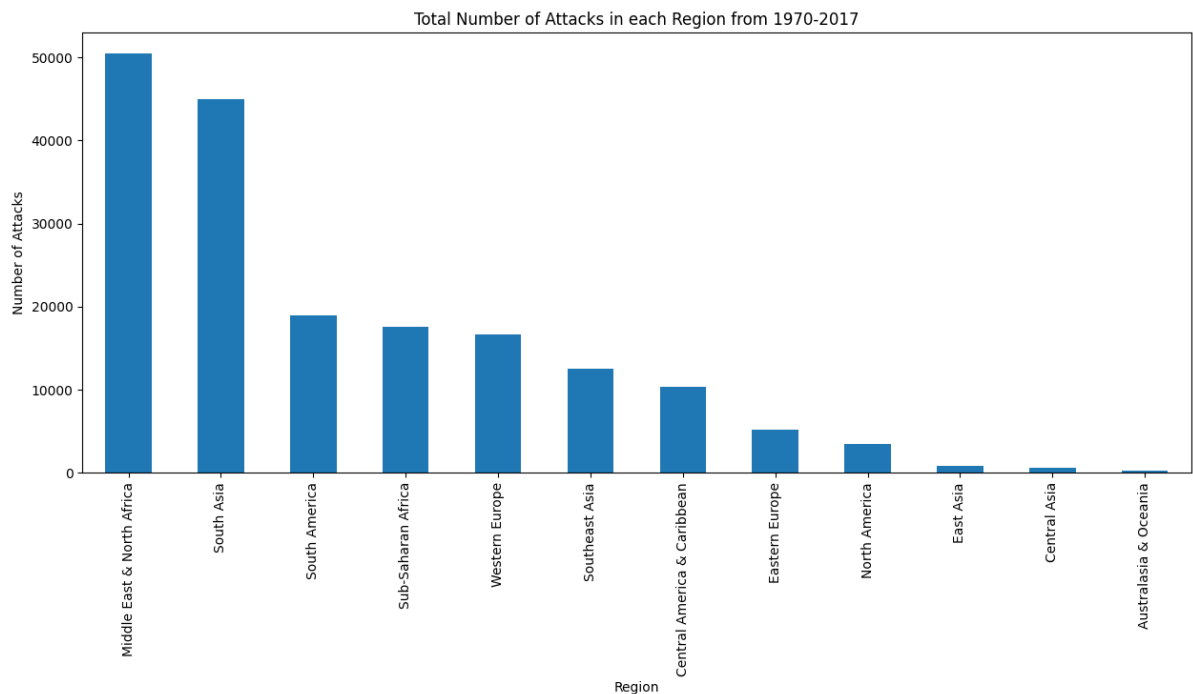


2. Total Attacks in each Region from year 1970 - 2017

```
In [114... regt=reg.transpose()
regt["Total"]=regt.sum(axis=1)
ra=regt["Total"].sort_values(ascending=False)
ra
```

```
Out[114]: region_txt
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: Total, dtype: int64
```

```
In [115... ra.plot(kind="bar",figsize=(15,6))
plt.title("Total Number of Attacks in each Region from 1970-2017")
plt.xlabel("Region")
plt.ylabel("Number of Attacks")
plt.show()
```



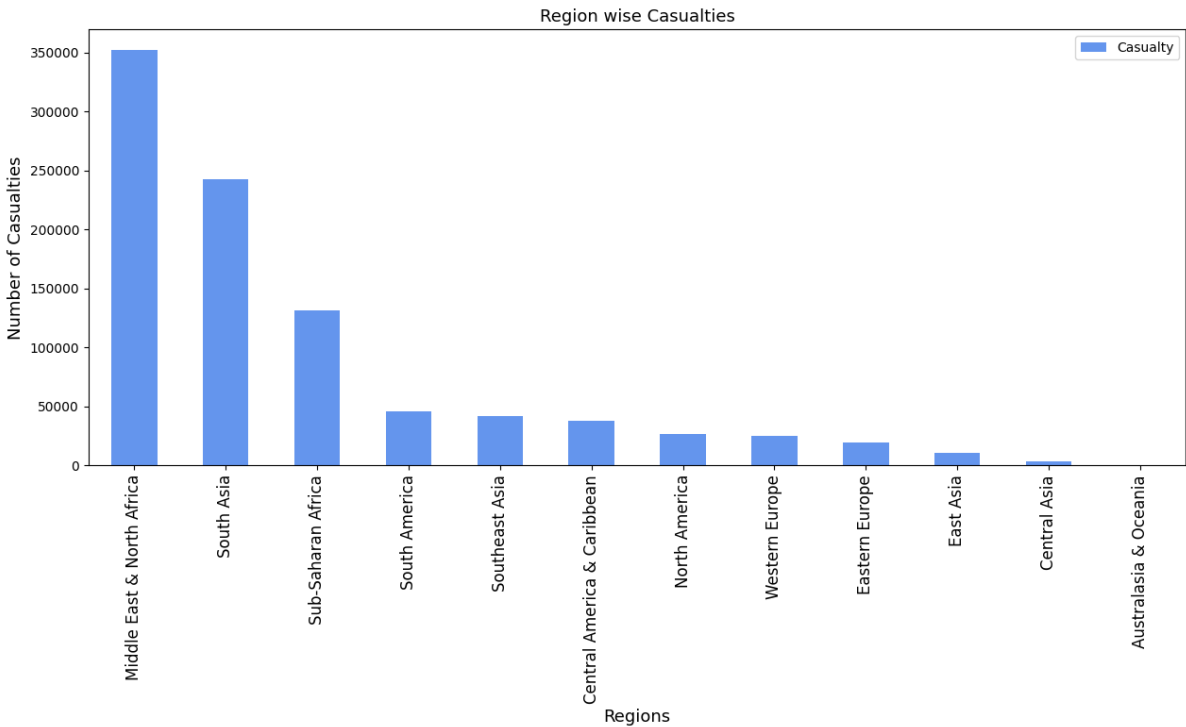
3. Total Casualties in each Region: Killed + Wounded

```
In [116... rc=df[["region_txt","Casualty"]].groupby("region_txt").sum().sort_values(by="Casual
rc
```

Out[116]:

Casualty	
region_txt	
Middle East & North Africa	351950.0
South Asia	242679.0
Sub-Saharan Africa	131243.0
South America	45553.0
Southeast Asia	41896.0
Central America & Caribbean	37699.0
North America	26447.0
Western Europe	25026.0
Eastern Europe	19460.0
East Asia	10365.0
Central Asia	3009.0
Australasia & Oceania	410.0

```
In [117... rc.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Region wise Casualties",fontsize=13)
plt.xlabel("Regions",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



4. Killed in each Region

```
In [118... rk=df[["region_txt","nkill"]].groupby("region_txt").sum().sort_values(by="nkill",asrk
```

Out[118]:

nkill	
region_txt	
Middle East & North Africa	137642.0
South Asia	101319.0
Sub-Saharan Africa	78386.0
South America	28849.0
Central America & Caribbean	28708.0
Southeast Asia	15637.0
Eastern Europe	7415.0
Western Europe	6694.0
North America	4916.0
East Asia	1152.0
Central Asia	1000.0
Australasia & Oceania	150.0

5. Wounded in each Region

```
In [119... rw=df[["region_txt","nwound"]].groupby("region_txt").sum().sort_values(by="nwound",rw
```

Out[119]:

nwound	
region_txt	
Middle East & North Africa	214308.0
South Asia	141360.0
Sub-Saharan Africa	52857.0
Southeast Asia	26259.0
North America	21531.0
Western Europe	18332.0
South America	16704.0
Eastern Europe	12045.0
East Asia	9213.0
Central America & Caribbean	8991.0
Central Asia	2009.0
Australasia & Oceania	260.0

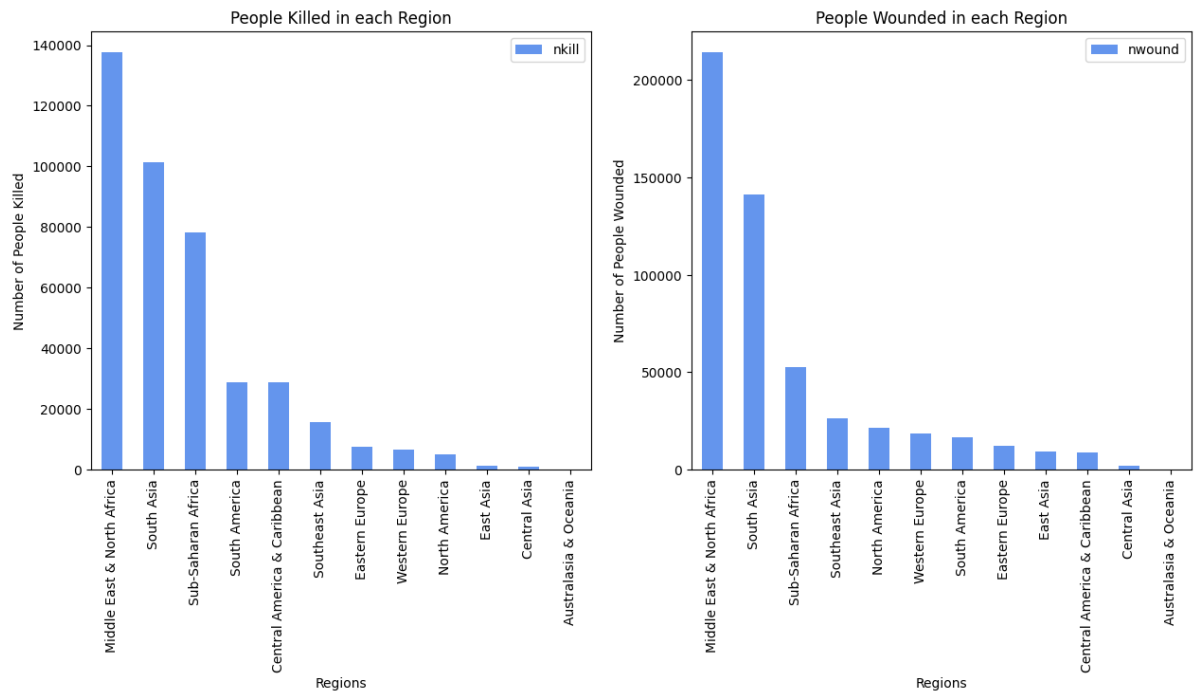
In [120]:

```
fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
rk.plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax0)
ax0.set_title("People Killed in each Region")
ax0.set_xlabel("Regions")
ax0.set_ylabel("Number of People Killed")

#Wounded
rw.plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax1)
ax1.set_title("People Wounded in each Region")
ax1.set_xlabel("Regions")
ax1.set_ylabel("Number of People Wounded")

plt.show()
```



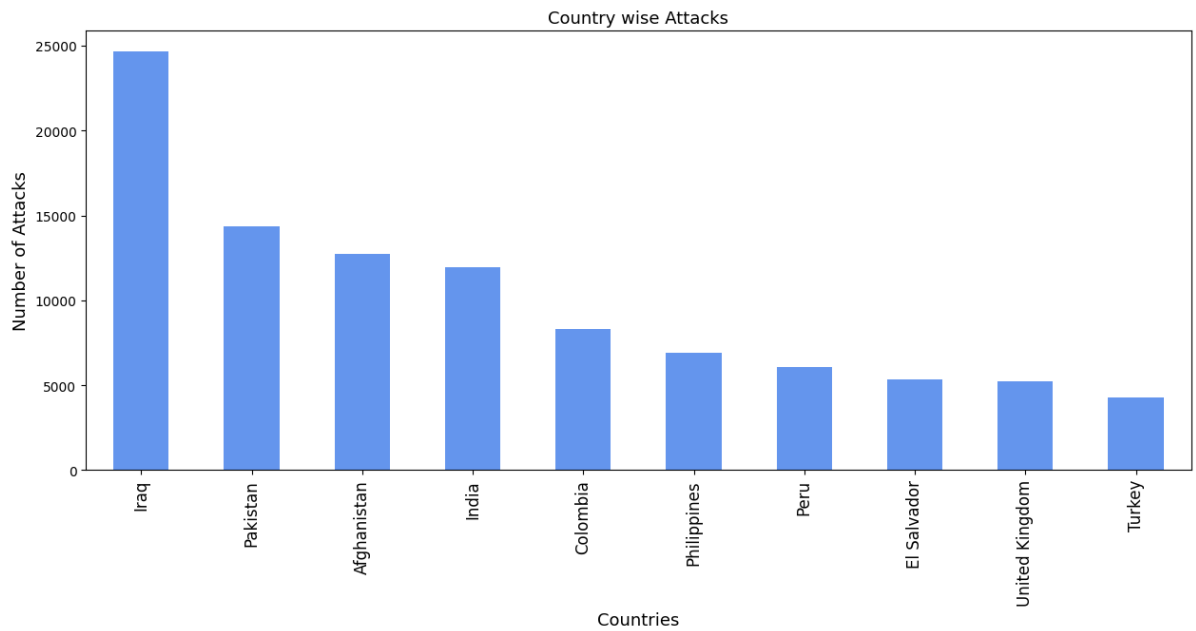
TOP 10 COUNTRY WISE ATTACKS

1. Number of Attacks in each country

```
In [121]: ct=df["country_txt"].value_counts().head(10)
ct
```

```
Out[121]: Iraq                24636
Pakistan            14368
Afghanistan         12731
India               11960
Colombia            8306
Philippines         6908
Peru                6096
El Salvador         5320
United Kingdom      5235
Turkey             4292
Name: country_txt, dtype: int64
```

```
In [122]: ct.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Country wise Attacks",fontsize=13)
plt.xlabel("Countries",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



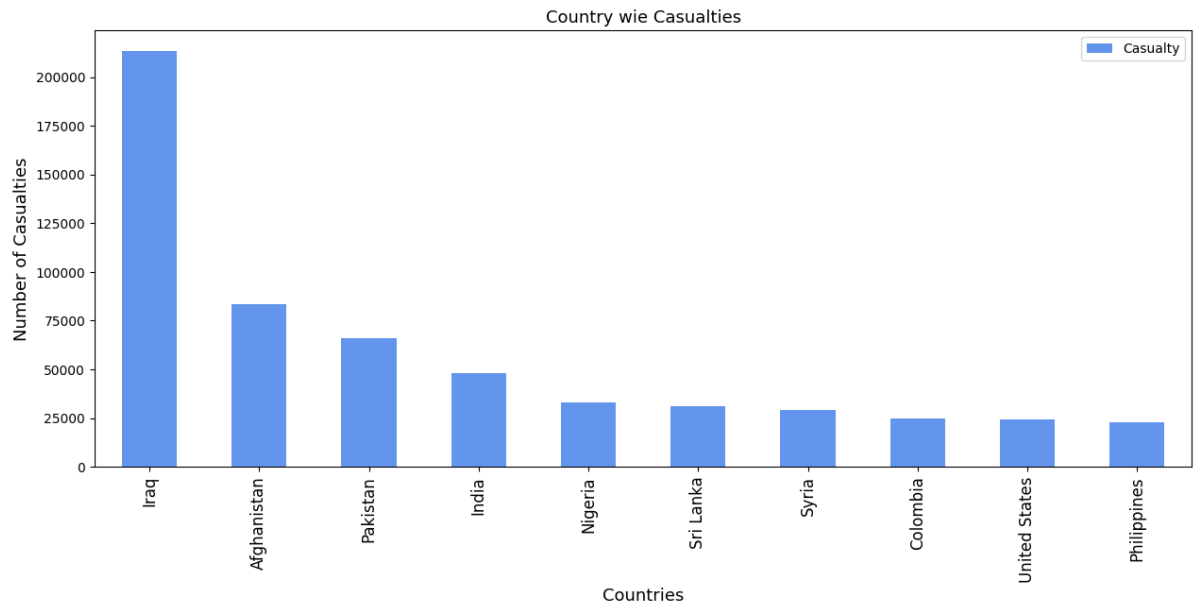
2. Total Casualties in each Country: Killed + Wounded

```
In [123]: cnc=df[["country_txt","Casualty"]].groupby("country_txt").sum().sort_values(by="Casualty")
cnc.head(10)
```

Out[123]:

Casualty	
country_txt	
Iraq	213279.0
Afghanistan	83661.0
Pakistan	65860.0
India	48321.0
Nigeria	32921.0
Sri Lanka	31091.0
Syria	29338.0
Colombia	25026.0
United States	24473.0
Philippines	22926.0

```
In [124]: cnc[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Country wie Casualties",fontsize=13)
plt.xlabel("Countries",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



3. Killed in each Country

```
In [125]: cnk=df[["country_txt","nkill"]].groupby("country_txt").sum().sort_values(by="nkill")
cnk.head(10)
```

Out[125]:

nkill	
country_txt	
Iraq	78589.0
Afghanistan	39384.0
Pakistan	23822.0
Nigeria	22682.0
India	19341.0
Sri Lanka	15530.0
Syria	15229.0
Colombia	14698.0
Peru	12771.0
El Salvador	12053.0

4. Wounded in each Country

```
In [126]: cnw=df[["country_txt","nwound"]].groupby("country_txt").sum().sort_values(by="nwoun")
cnw.head(10)
```


Out[126]:

nwound	
country_txt	
Iraq	134690.0
Afghanistan	44277.0
Pakistan	42038.0
India	28980.0
United States	20702.0
Sri Lanka	15561.0
Syria	14109.0
Philippines	13367.0
Lebanon	10904.0
Colombia	10328.0

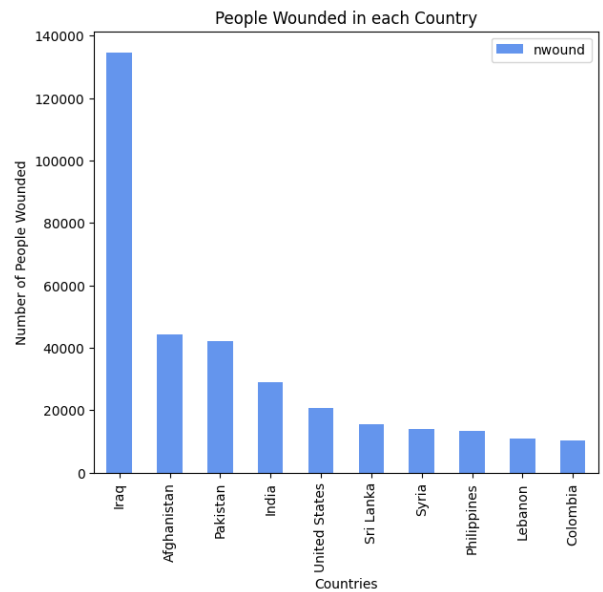
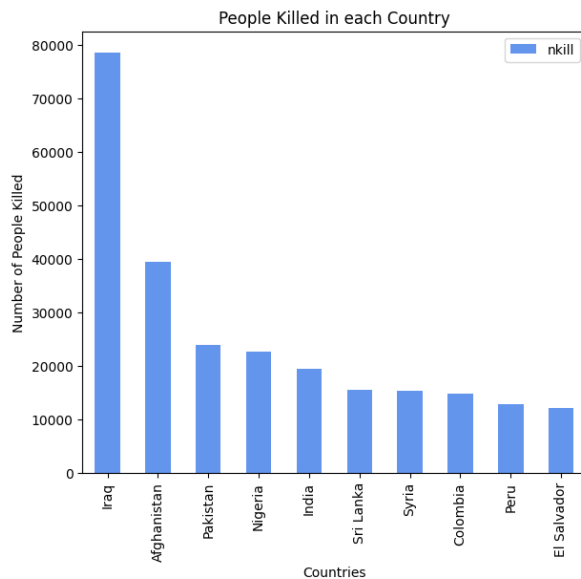
In [127]:

```
fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
cnk[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax0)
ax0.set_title("People Killed in each Country")
ax0.set_xlabel("Countries")
ax0.set_ylabel("Number of People Killed")

#Wounded
cnw[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax1)
ax1.set_title("People Wounded in each Country")
ax1.set_xlabel("Countries")
ax1.set_ylabel("Number of People Wounded")

plt.show()
```



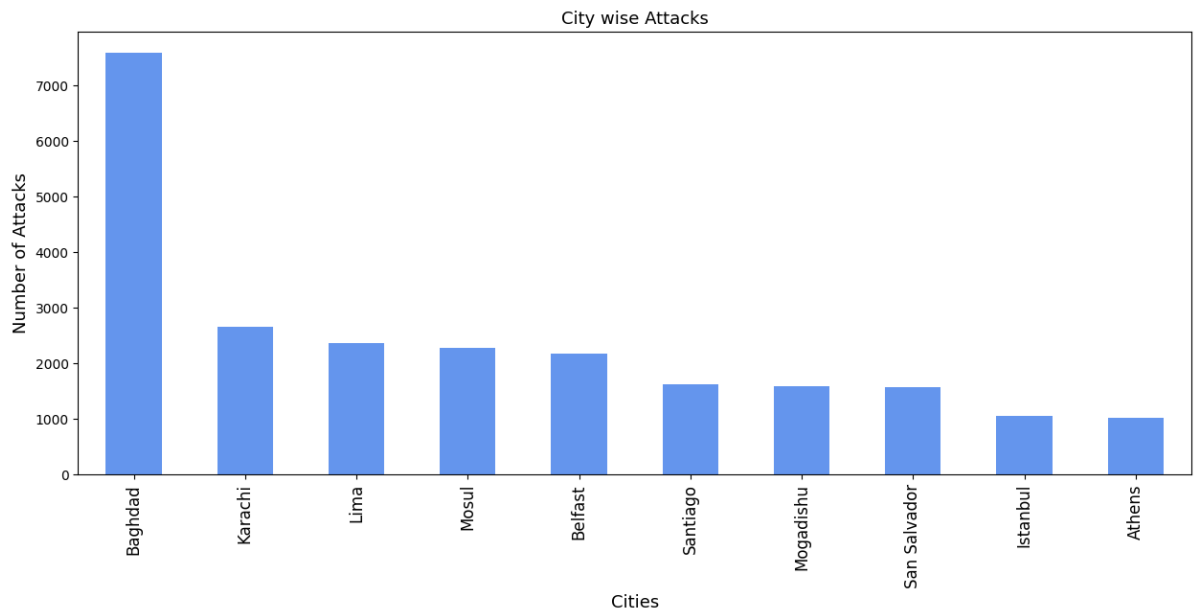
CITY WISE TOP 10 ATTACKS

1. Number of attacks in each City

```
In [128]: city=df["city"].value_counts()[1:11]
city
```

```
Out[128]: Baghdad      7589
Karachi      2652
Lima      2359
Mosul      2265
Belfast      2171
Santiago      1621
Mogadishu      1581
San Salvador      1558
Istanbul      1048
Athens      1019
Name: city, dtype: int64
```

```
In [129]: city.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("City wise Attacks",fontsize=13)
plt.xlabel("Cities",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



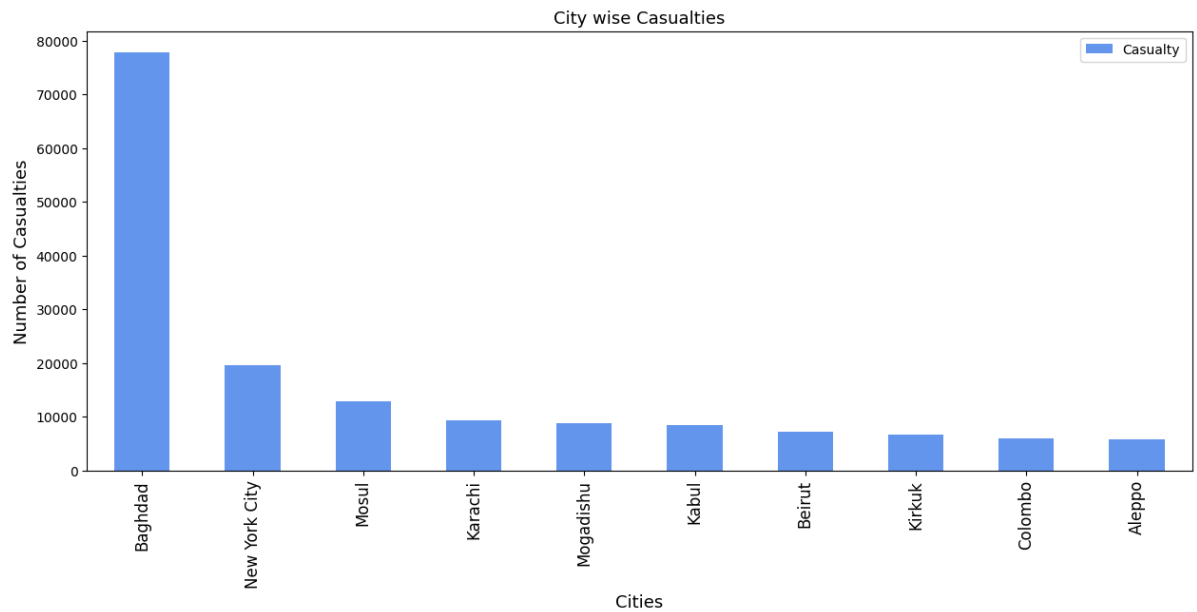
2. Total Casualties in each City: Killed + Wounded

```
In [130]: cc=df[["city","Casualty"]].groupby("city").sum().sort_values(by="Casualty",ascending=True)
cc.head(10)
```

Out[130]:

Casualty	
city	
Baghdad	77876.0
New York City	19619.0
Mosul	12927.0
Karachi	9376.0
Mogadishu	8868.0
Kabul	8466.0
Beirut	7257.0
Kirkuk	6636.0
Colombo	5906.0
Aleppo	5748.0

```
In [131]: cc[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("City wise Casualties",fontsize=13)
plt.xlabel("Cities",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



3. Killed in each City

```
In [132]: ck=df[["city", "nkill"]].groupby("city").sum().sort_values(by="nkill",ascending=False)
ck.head(10)
```

Out[132]:

nkill	
city	
Baghdad	21151.0
Mosul	7140.0
Mogadishu	3913.0
Karachi	3688.0
New York City	2838.0
Tikrit	2679.0
Kabul	2493.0
Ramadi	2313.0
Maiduguri	2235.0
Aleppo	2125.0

4. Wounded in each City

```
In [133]: cw=df[["city", "nwound"]].groupby("city").sum().sort_values(by="nwound",ascending=False)
cw.head(10)
```

Out[133]:

nwound	
city	
Baghdad	56725.0
New York City	16781.0
Kabul	5973.0
Mosul	5787.0
Karachi	5688.0
Tokyo	5542.0
Beirut	5341.0
Nairobi	5024.0
Kirkuk	5008.0
Mogadishu	4955.0

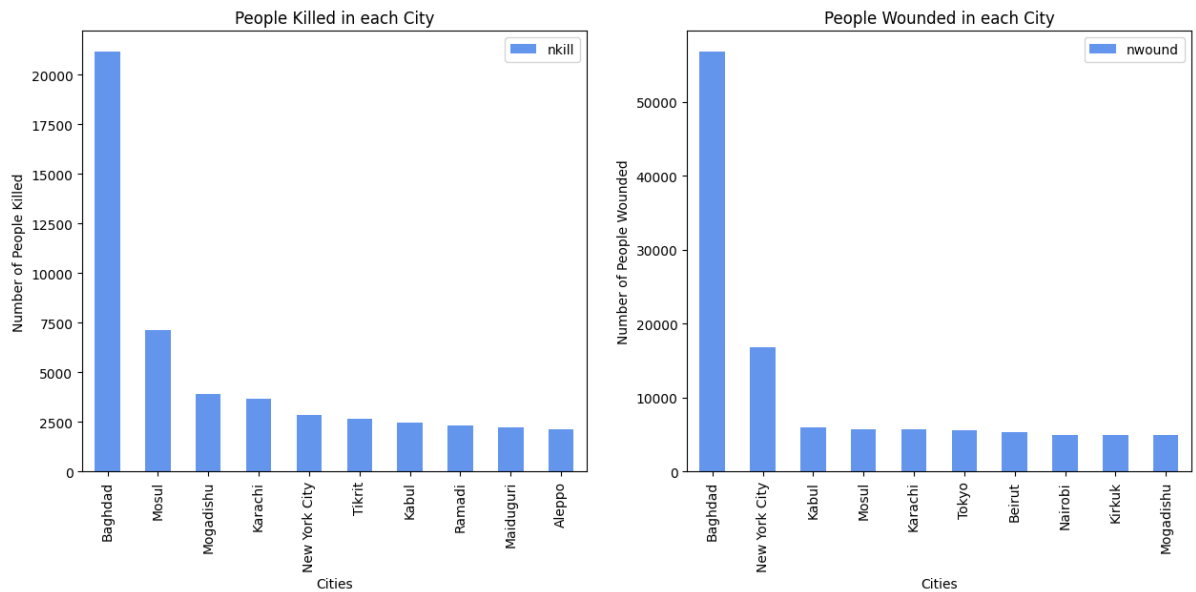
In [134]:

```
fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
ck[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax0)
ax0.set_title("People Killed in each City")
ax0.set_xlabel("Cities")
ax0.set_ylabel("Number of People Killed")

#Wounded
cw[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax1)
ax1.set_title("People Wounded in each City")
ax1.set_xlabel("Cities")
ax1.set_ylabel("Number of People Wounded")

plt.show()
```



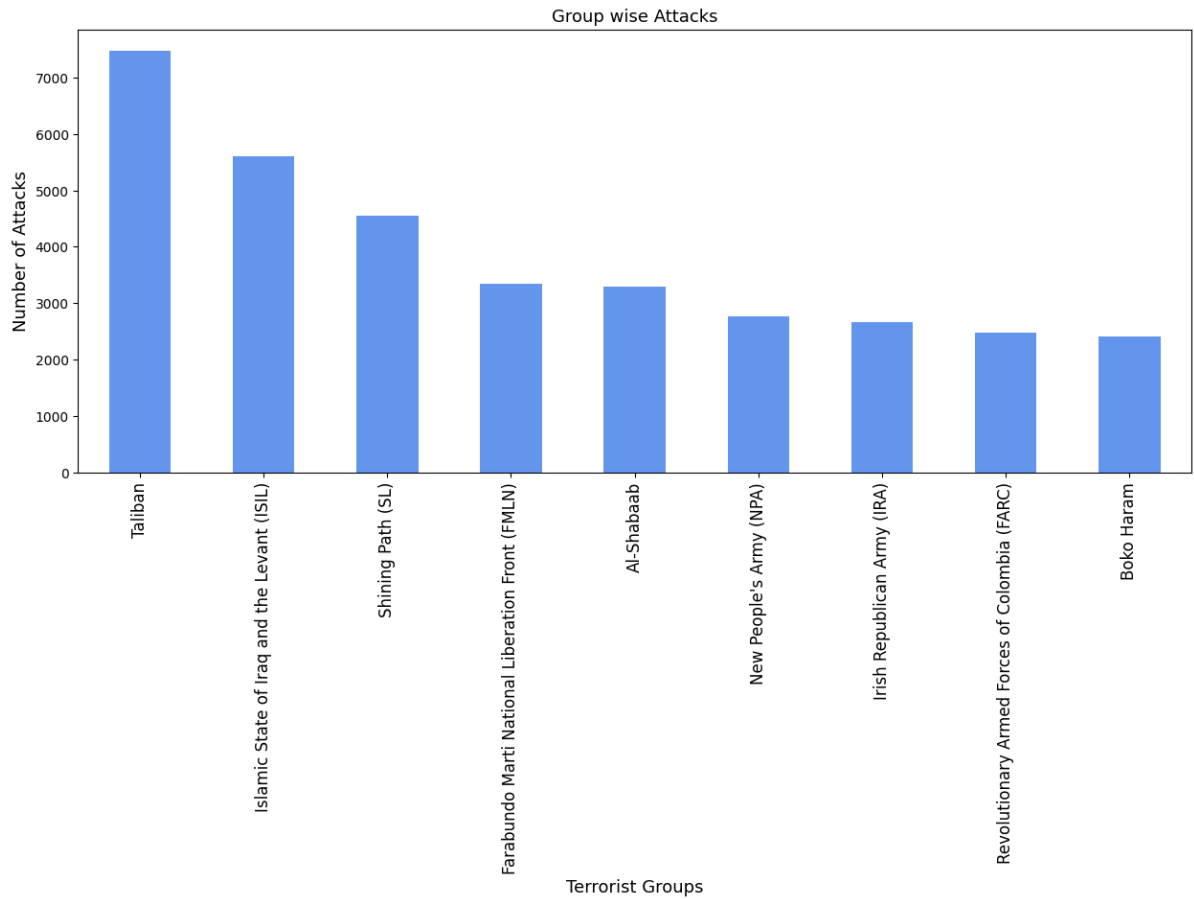
TOP 10 TERRORIST GROUPS WISE ATTACKS

1. Number of Attacks by each Group

```
In [135]: grp=df["gname"].value_counts()[1:10]
grp
```

```
Out[135]: Taliban 7478
Islamic State of Iraq and the Levant (ISIL) 5613
Shining Path (SL) 4555
Farabundo Marti National Liberation Front (FMLN) 3351
Al-Shabaab 3288
New People's Army (NPA) 2772
Irish Republican Army (IRA) 2671
Revolutionary Armed Forces of Colombia (FARC) 2487
Boko Haram 2418
Name: gname, dtype: int64
```

```
In [136]: grp.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Group wise Attacks",fontsize=13)
plt.xlabel("Terrorist Groups",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



2. Total Casualties by each Group: Killed + Wounded

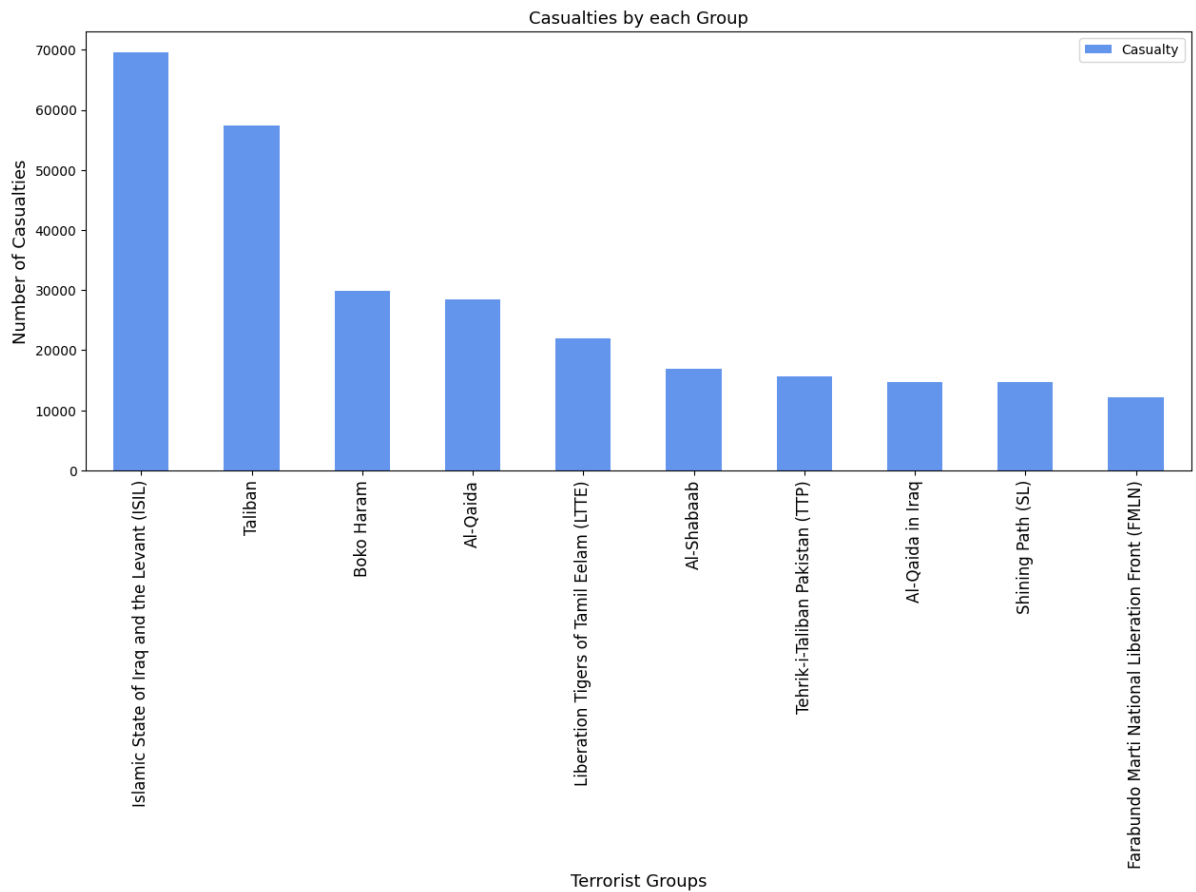
```
In [137]: gc=df[["gname","Casualty"]].groupby("gname").sum().sort_values(by="Casualty",ascending=True)
gc.head(10)
```

Out[137]:

Casualty	
gname	
Islamic State of Iraq and the Levant (ISIL)	69595.0
Taliban	57342.0
Boko Haram	29801.0
Al-Qaida	28372.0
Liberation Tigers of Tamil Eelam (LTTE)	22020.0
Al-Shabaab	16954.0
Tehrik-i-Taliban Pakistan (TTP)	15574.0
Al-Qaida in Iraq	14724.0
Shining Path (SL)	14632.0
Farabundo Marti National Liberation Front (FMLN)	12130.0

```
In [138]: gc.head(10).plot(kind="bar",color="cornflowerblue",figsize=(15,6))
```

```
plt.title("Casualties by each Group",fontsize=13)
plt.xlabel("Terrorist Groups",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



3. Killed by each Group

```
In [139... gk=df[["gname","nkill"]].groupby("gname").sum().sort_values(by="nkill",ascending=False)
gk.head(10)
```


Out[139]:

	nkill
gname	
Islamic State of Iraq and the Levant (ISIL)	38923.0
Taliban	29410.0
Boko Haram	20328.0
Shining Path (SL)	11601.0
Liberation Tigers of Tamil Eelam (LTTE)	10989.0
Al-Shabaab	9330.0
Farabundo Marti National Liberation Front (FMLN)	8065.0
Nicaraguan Democratic Force (FDN)	6662.0
Tehrik-i-Taliban Pakistan (TTP)	6042.0
Revolutionary Armed Forces of Colombia (FARC)	5661.0

4. Number of Wounded by each Group

```
In [140]: gw=df[["gname", "nwound"]].groupby("gname").sum().sort_values(by="nwound", ascending=True).head(10)
```

Out[140]:

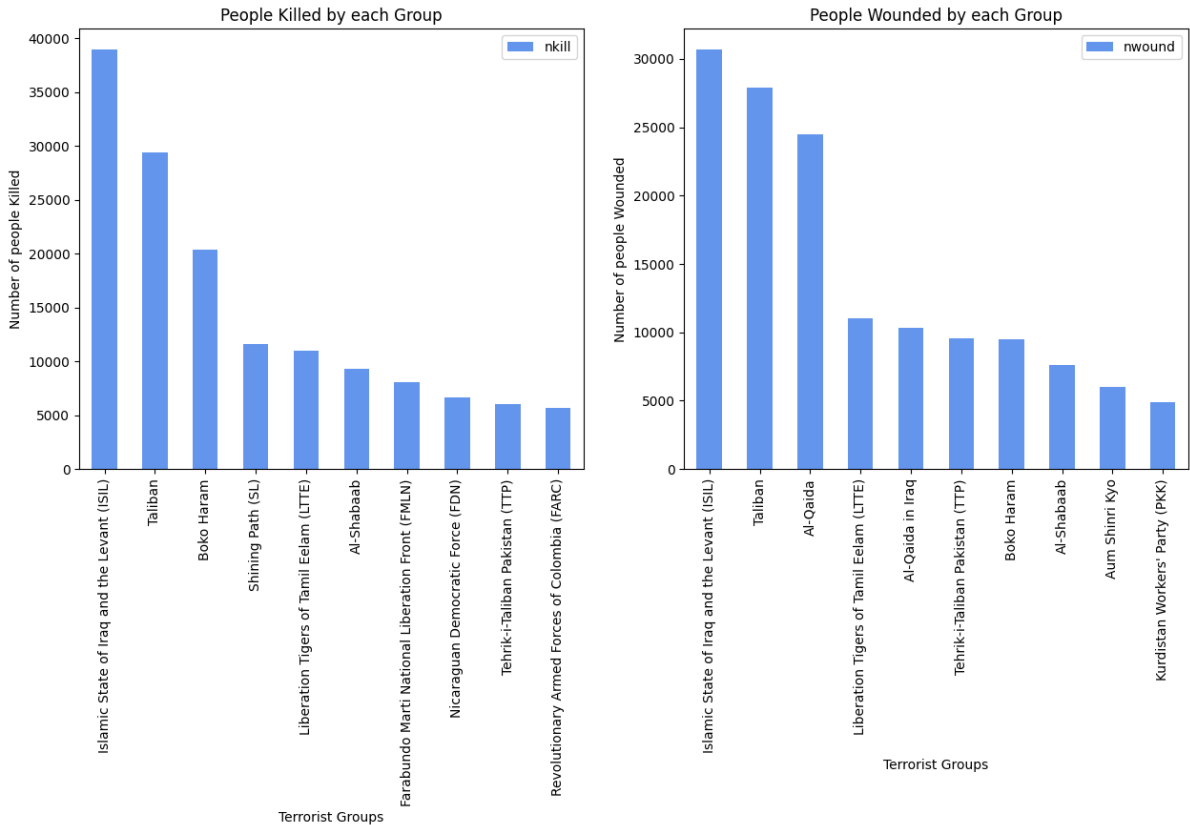
	nwound
gname	
Islamic State of Iraq and the Levant (ISIL)	30672.0
Taliban	27932.0
Al-Qaida	24512.0
Liberation Tigers of Tamil Eelam (LTTE)	11031.0
Al-Qaida in Iraq	10343.0
Tehrik-i-Taliban Pakistan (TTP)	9532.0
Boko Haram	9473.0
Al-Shabaab	7624.0
Aum Shinri Kyo	6003.0
Kurdistan Workers' Party (PKK)	4908.0

```
In [141]: fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
gk[:10].plot(kind="bar", color="cornflowerblue", figsize=(15,6), ax=ax0)
ax0.set_title("People Killed by each Group")
```

```
ax0.set_xlabel("Terrorist Groups")
ax0.set_ylabel("Number of people Killed")

#Wounded
gw[:10].plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax1)
ax1.set_title("People Wounded by each Group")
ax1.set_xlabel("Terrorist Groups")
ax1.set_ylabel("Number of people Wounded")
plt.show()
```



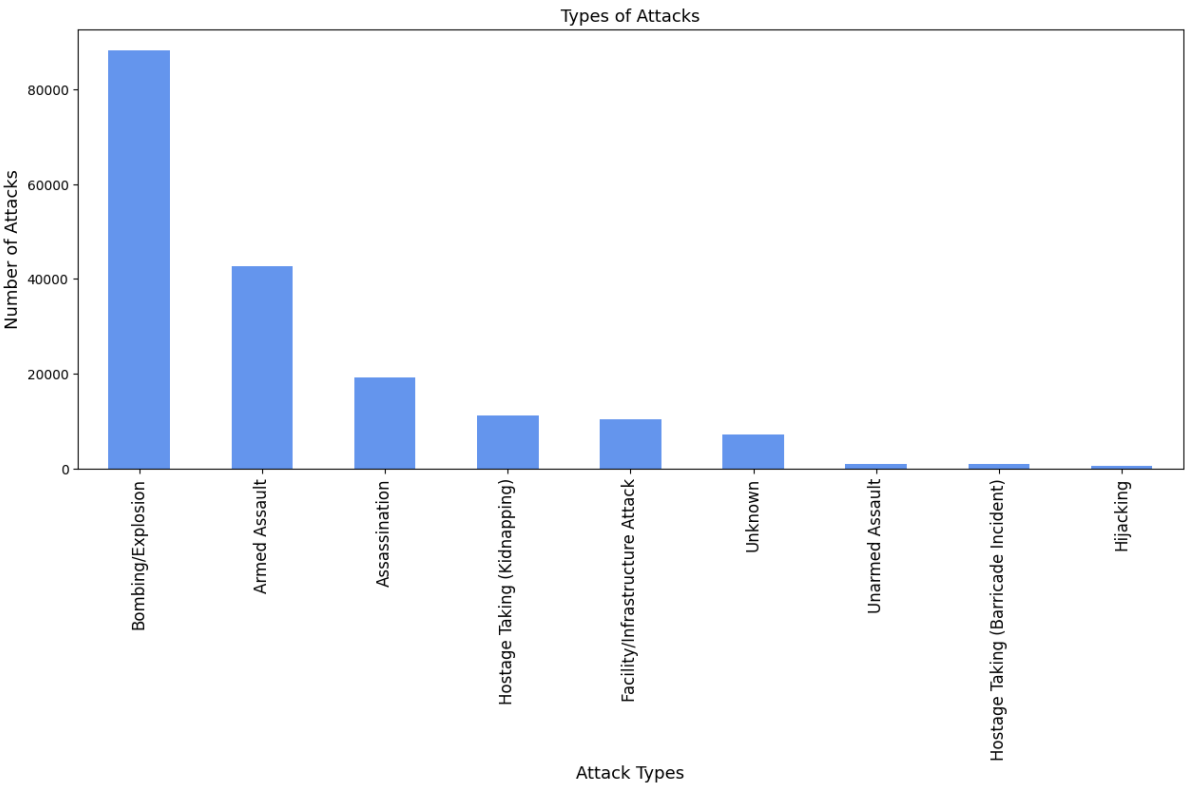
TYPE OF ATTACKS

1. Number of Attacks by each attack type

```
In [142]: at=df["attacktype1_txt"].value_counts()
at
```

```
Out[142]: Bombing/Explosion      88255
Armed Assault      42669
Assassination      19312
Hostage Taking (Kidnapping)  11158
Facility/Infrastructure Attack  10356
Unknown            7276
Unarmed Assault    1015
Hostage Taking (Barricade Incident)  991
Hijacking          659
Name: attacktype1_txt, dtype: int64
```

```
In [143... at.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Types of Attacks",fontsize=13)
plt.xlabel("Attack Types",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



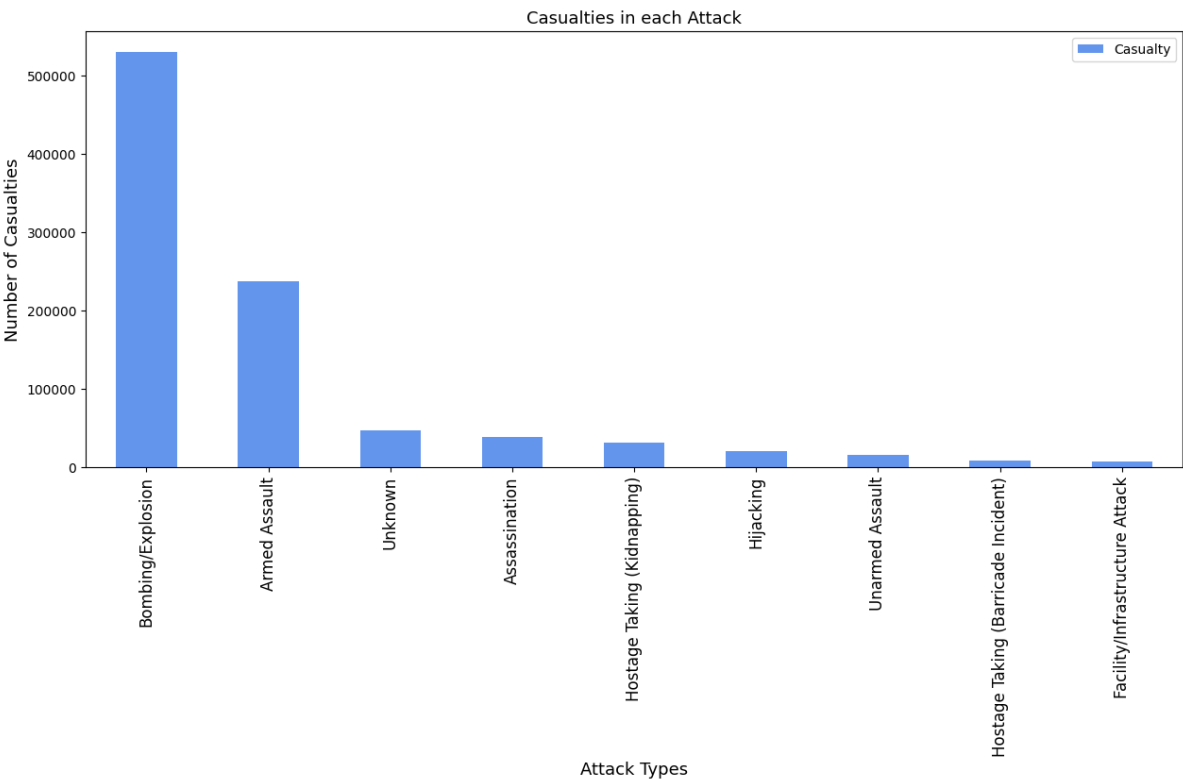
2. Total Casualties by each Attack Type: Killed and Wounded

```
In [144... ac=df[["attacktype1_txt","Casualty"]].groupby("attacktype1_txt").sum().sort_values(
ac
```

Out[144]:

Casualty	
attacktype1_txt	
Bombing/Explosion	530007.0
Armed Assault	237663.0
Unknown	47106.0
Assassination	38807.0
Hostage Taking (Kidnapping)	30677.0
Hijacking	20719.0
Unarmed Assault	14907.0
Hostage Taking (Barricade Incident)	8444.0
Facility/Infrastructure Attack	7407.0

```
In [145... ac.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Casualties in each Attack",fontsize=13)
plt.xlabel("Attack Types",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



2. Killed by each Attack Type:

```
In [146... ak=df[["attacktype1_txt","nkill"]].groupby("attacktype1_txt").sum().sort_values(by="nkill")
```

Out[146]:

nkill	
attacktype1_txt	
Armed Assault	160297.0
Bombing/Explosion	157321.0
Unknown	32381.0
Assassination	24920.0
Hostage Taking (Kidnapping)	24231.0
Hostage Taking (Barricade Incident)	4478.0
Hijacking	3718.0
Facility/Infrastructure Attack	3642.0
Unarmed Assault	880.0

4. Wounded by each Attack Type

```
In [147... aw=df[["attacktype1_txt","nwound"]].groupby("attacktype1_txt").sum().sort_values(by  
aw
```

Out[147]:

	nwound
attacktype1_txt	
Bombing/Explosion	372686.0
Armed Assault	77366.0
Hijacking	17001.0
Unknown	14725.0
Unarmed Assault	14027.0
Assassination	13887.0
Hostage Taking (Kidnapping)	6446.0
Hostage Taking (Barricade Incident)	3966.0
Facility/Infrastructure Attack	3765.0

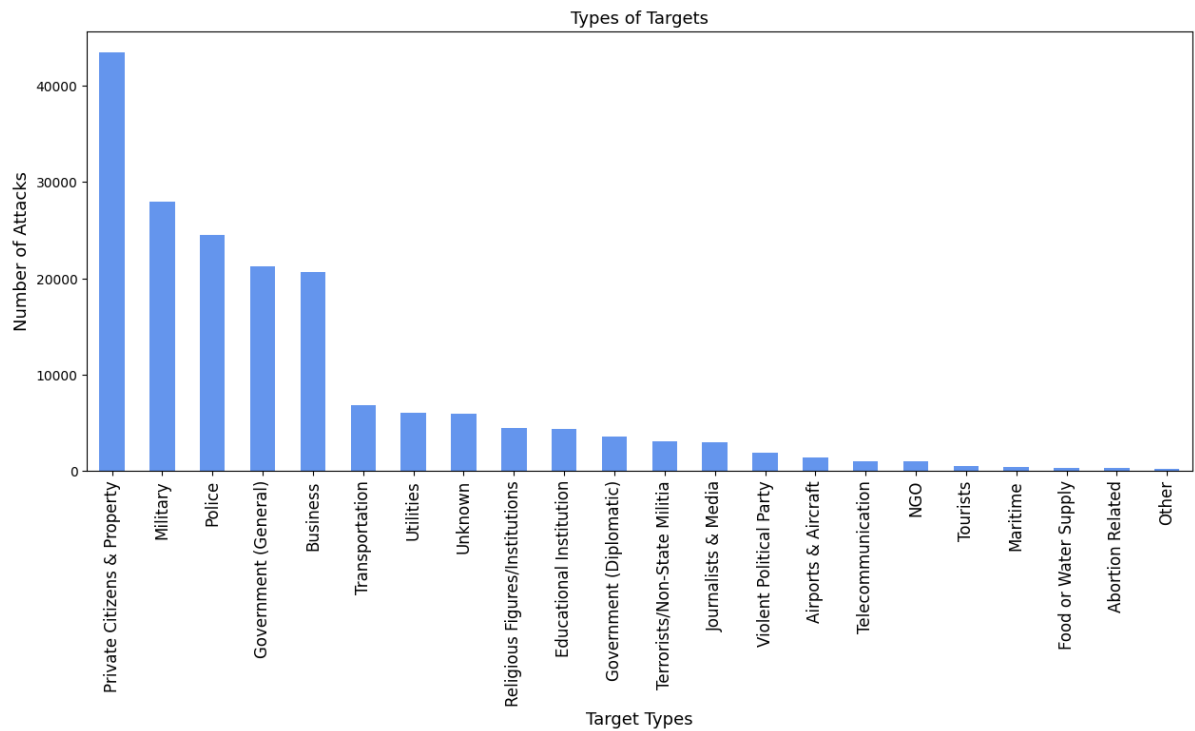
```
In [148... fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
ak.plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax0)
ax0.set_title("People Killed in each Attack Type")
ax0.set_xlabel("Attack Types")
ax0.set_ylabel("Number of people Killed")

#Wounded
aw.plot(kind="bar",color="cornflowerblue",figsize=(15,6),ax=ax1)
ax1.set_title("People Wounded in each Attack Type")
ax1.set_xlabel("Attack Types")
ax1.set_ylabel("Number of people Wounded")
plt.show()
```



```
In [150... ta.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Types of Targets",fontsize=13)
plt.xlabel("Target Types",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



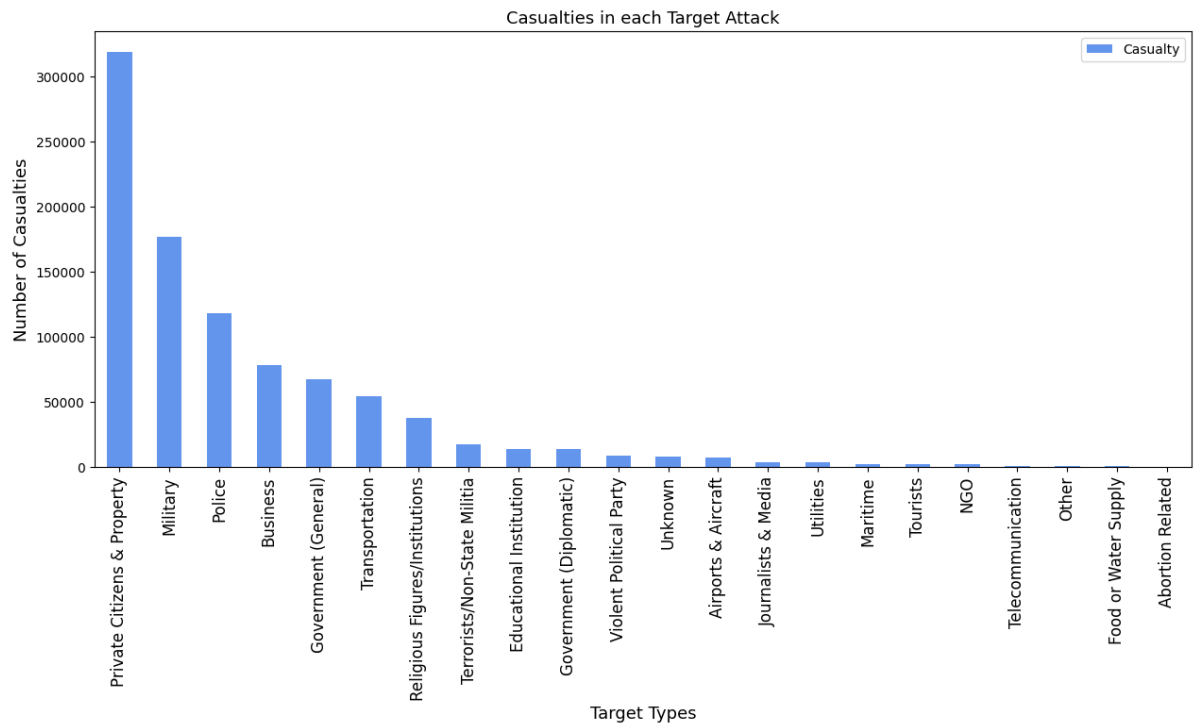
```
In [151... tc=df[["targtype1_txt","Casualty"]].groupby("targtype1_txt").sum().sort_values(by="tc")
```

Out[151]:

Casualty	
targtype1_txt	
Private Citizens & Property	319176.0
Military	177085.0
Police	118407.0
Business	78018.0
Government (General)	67255.0
Transportation	54595.0
Religious Figures/Institutions	37890.0
Terrorists/Non-State Militia	17311.0
Educational Institution	13972.0
Government (Diplomatic)	13398.0
Violent Political Party	8920.0
Unknown	7888.0
Airports & Aircraft	7245.0
Journalists & Media	3297.0
Utilities	3227.0
Maritime	2099.0
Tourists	2048.0
NGO	1950.0
Telecommunication	679.0
Other	674.0
Food or Water Supply	547.0
Abortion Related	56.0

In [152...

```
tc.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Casualties in each Target Attack",fontsize=13)
plt.xlabel("Target Types",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```

```
In [153... tk=df[["targtype1_txt","nkill"]].groupby("targtype1_txt").sum().sort_values(by="nki
tk
```

Out[153]:

nkill	
targtype1_txt	
Private Citizens & Property	140504.0
Military	106047.0
Police	53704.0
Government (General)	26071.0
Business	23487.0
Transportation	13916.0
Religious Figures/Institutions	13413.0
Terrorists/Non-State Militia	9088.0
Unknown	4329.0
Airports & Aircraft	3767.0
Educational Institution	3745.0
Violent Political Party	3617.0
Government (Diplomatic)	3039.0
Utilities	1874.0
Journalists & Media	1501.0
Maritime	1191.0
NGO	1057.0
Tourists	758.0
Food or Water Supply	313.0
Other	255.0
Telecommunication	182.0
Abortion Related	10.0

In [154...]

```
tw=df[["targtype1_txt","nwound"]].groupby("targtype1_txt").sum().sort_values(by="nwound")
tw
```

Out[154]:

	nwound
targtype1_txt	
Private Citizens & Property	178672.0
Military	71038.0
Police	64703.0
Business	54531.0
Government (General)	41184.0
Transportation	40679.0
Religious Figures/Institutions	24477.0
Government (Diplomatic)	10359.0
Educational Institution	10227.0
Terrorists/Non-State Militia	8223.0
Violent Political Party	5303.0
Unknown	3559.0
Airports & Aircraft	3478.0
Journalists & Media	1796.0
Utilities	1353.0
Tourists	1290.0
Maritime	908.0
NGO	893.0
Telecommunication	497.0
Other	419.0
Food or Water Supply	234.0
Abortion Related	46.0

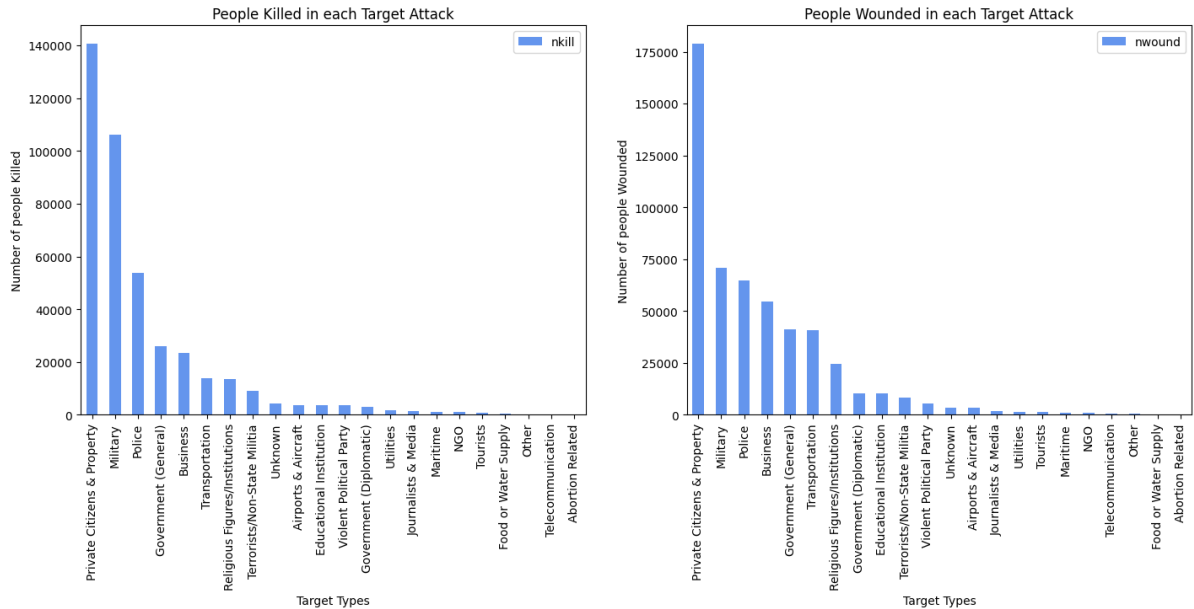
In [155]:

```
fig=plt.figure()
ax0=fig.add_subplot(1,2,1)
ax1=fig.add_subplot(1,2,2)

#Killed
tk.plot(kind="bar",color="cornflowerblue",figsize=(17,6),ax=ax0)
ax0.set_title("People Killed in each Target Attack")
ax0.set_xlabel("Target Types")
ax0.set_ylabel("Number of people Killed")

#Wounded
tw.plot(kind="bar",color="cornflowerblue",figsize=(17,6),ax=ax1)
ax1.set_title("People Wounded in each Target Attack")
ax1.set_xlabel("Target Types")
```

```
ax1.set_ylabel("Number of people Wounded")
plt.show()
```



Group + Country wise - Top10

1.Sorting by number of Attacks

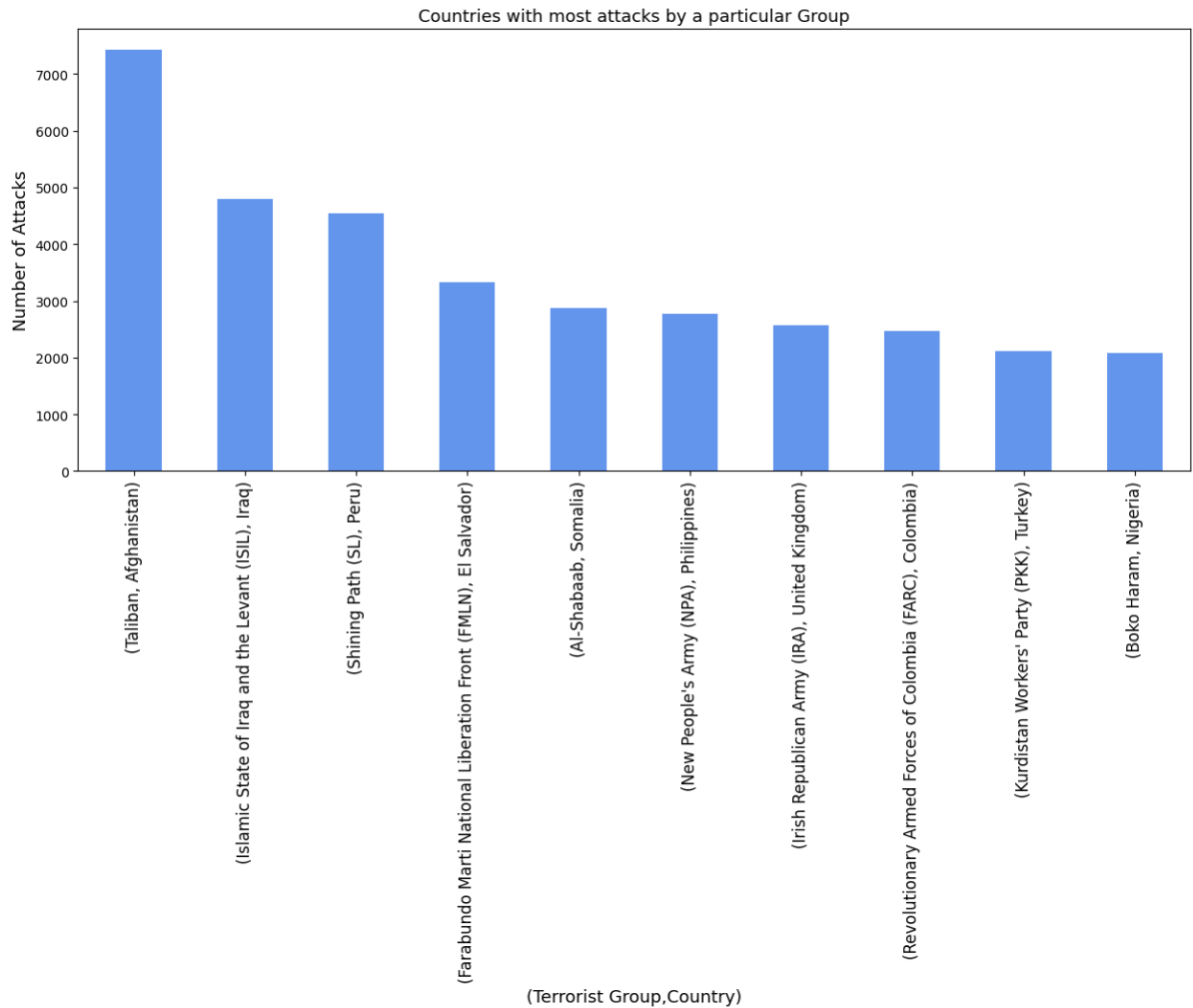
```
In [156]: gca=df[["gname","country_txt"]].value_counts().drop("Unknown")
          gca.head(10)
```

C:\Users\zeelt\AppData\Local\Temp\ipykernel_4504\3028430943.py:1: PerformanceWarning: dropping on a non-lexsorted multi-index without a level parameter may impact performance.

```
gca=df[["gname","country_txt"]].value_counts().drop("Unknown")
```

```
Out[156]: gname                country_txt
Taliban                Afghanistan      7423
Islamic State of Iraq and the Levant (ISIL)  Iraq      4797
Shining Path (SL)      Peru      4541
Farabundo Marti National Liberation Front (FMLN)  El Salvador      3330
Al-Shabaab              Somalia      2867
New People's Army (NPA)  Philippines      2770
Irish Republican Army (IRA)  United Kingdom      2575
Revolutionary Armed Forces of Colombia (FARC)  Colombia      2468
Kurdistan Workers' Party (PKK)  Turkey      2109
Boko Haram              Nigeria      2087
dtype: int64
```

```
In [157]: gca.head(10).plot(kind="bar",color="cornflowerblue",figsize=(15,6))
          plt.title("Countries with most attacks by a particular Group",fontsize=13)
          plt.xlabel("(Terrorist Group,Country)",fontsize=13)
          plt.xticks(fontsize=12)
          plt.ylabel("Number of Attacks",fontsize=13)
          plt.show()
```



2.Sorting by Number of Casualties

In [158... `gcc=df[["gname", "country_txt", "Casualty"]].groupby(["gname", "country_txt"],axis=0).gcc`

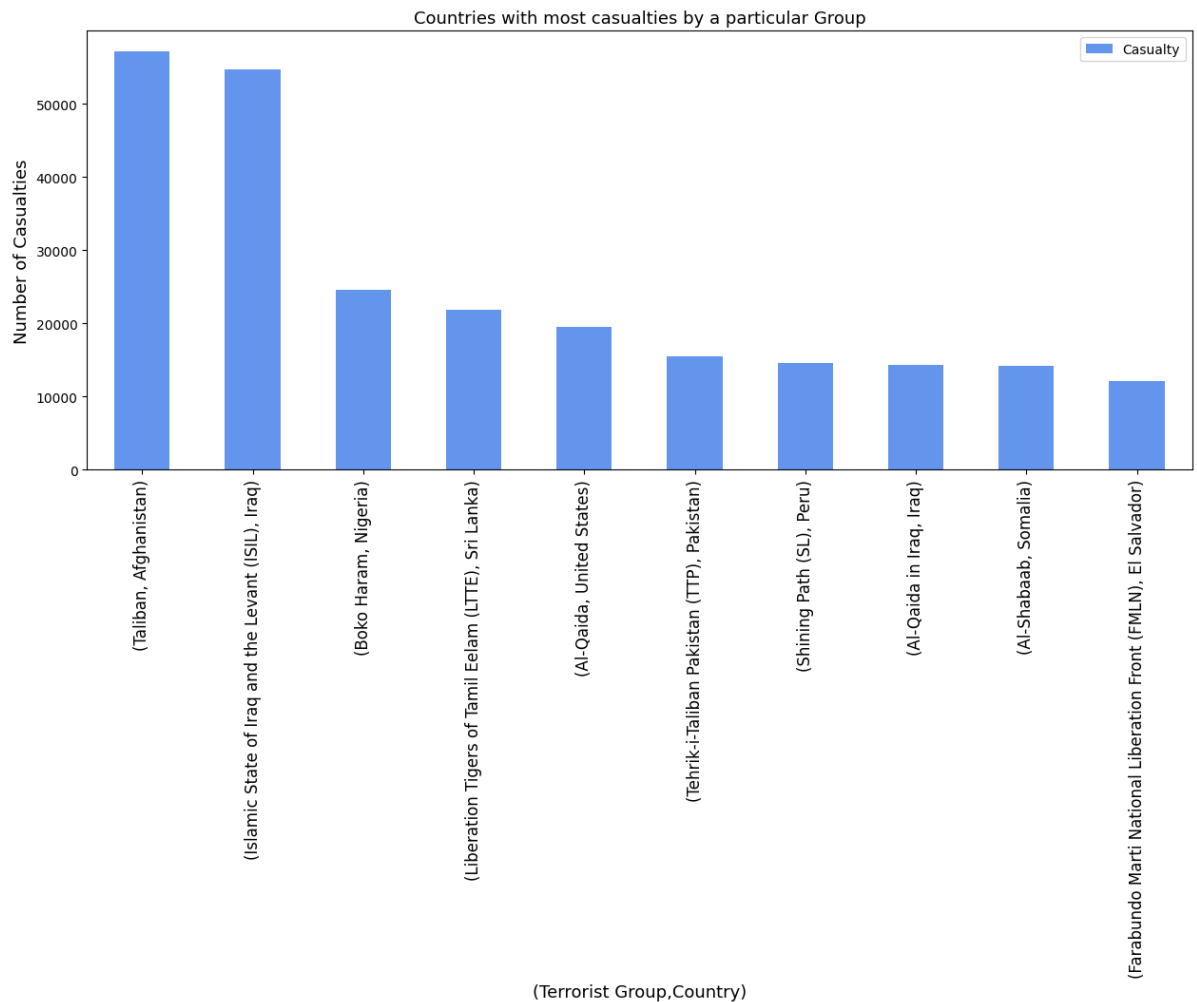
C:\Users\zeelt\AppData\Local\Temp\ipykernel_4504\780861939.py:1: PerformanceWarning: dropping on a non-lexsorted multi-index without a level parameter may impact performance.

```
gcc=df[["gname", "country_txt", "Casualty"]].groupby(["gname", "country_txt"],axis=0).sum().sort_values(by="Casualty",ascending=False).drop("Unknown").head(10)
```

Out[158]:

		Casualty
gname	country_txt	
Taliban	Afghanistan	57140.0
Islamic State of Iraq and the Levant (ISIL)		Iraq 54755.0
Boko Haram	Nigeria	24588.0
Liberation Tigers of Tamil Eelam (LTTE)		Sri Lanka 21919.0
Al-Qaida	United States	19494.0
Tehrik-i-Taliban Pakistan (TTP)		Pakistan 15532.0
Shining Path (SL)	Peru	14625.0
Al-Qaida in Iraq		Iraq 14348.0
Al-Shabaab	Somalia	14201.0
Farabundo Marti National Liberation Front (FMLN)		El Salvador 12068.0

```
In [159... gcc.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Countries with most casualties by a particular Group",fontsize=13)
plt.xlabel("(Terrorist Group,Country)",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Casualties",fontsize=13)
plt.show()
```



3. Sorting by Number of People Killed

```
In [160... gck=df[["gname","country_txt","nkill"]].groupby(["gname","country_txt"],axis=0).sum
gck
```

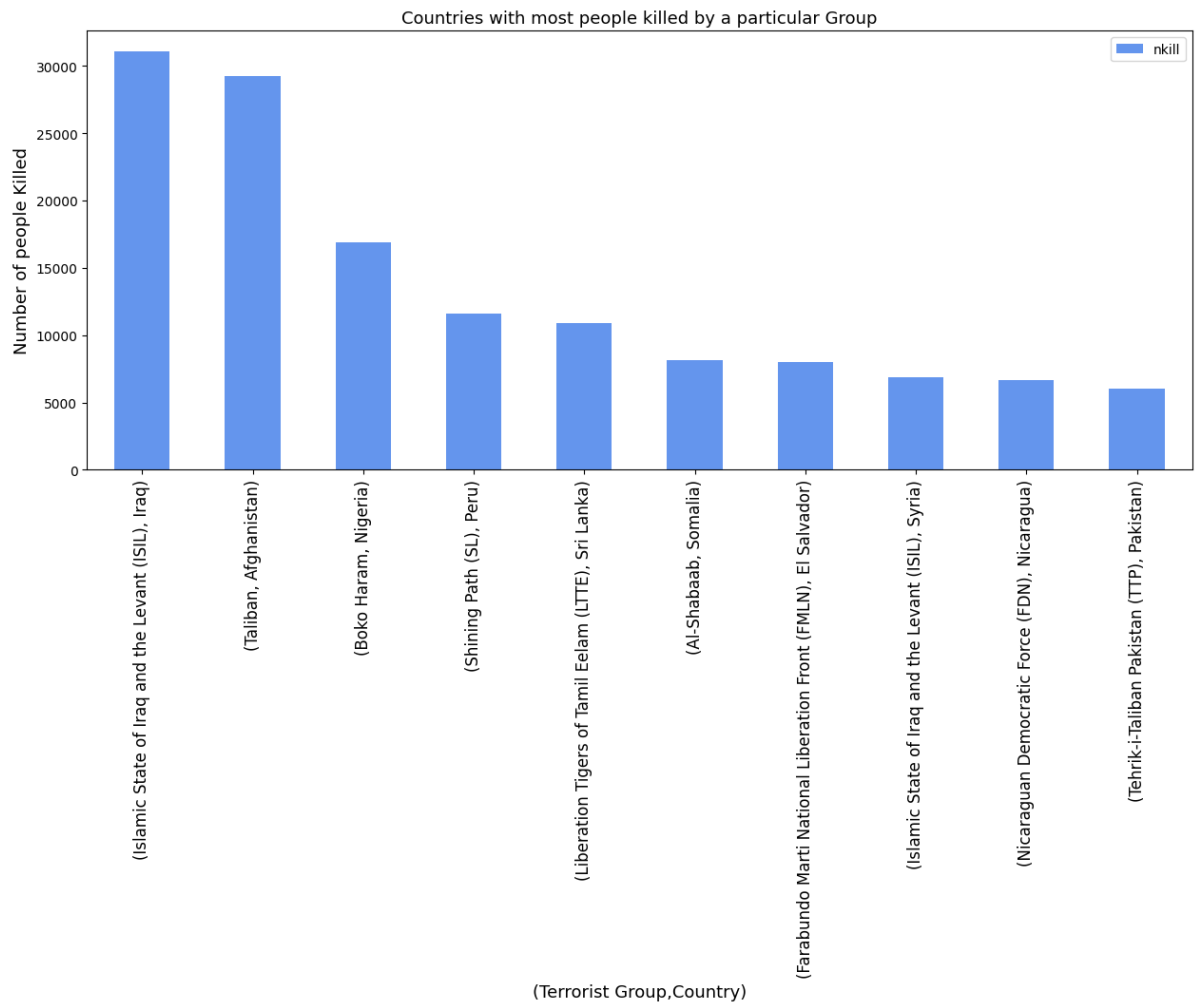
C:\Users\zeelt\AppData\Local\Temp\ipykernel_4504\514881475.py:1: PerformanceWarning: dropping on a non-lexsorted multi-index without a level parameter may impact performance.

```
gck=df[["gname","country_txt","nkill"]].groupby(["gname","country_txt"],axis=0).sum().sort_values(by="nkill",ascending=False).drop("Unknown").head(10)
```

Out[160]:

	gname	country_txt	nkill
	Islamic State of Iraq and the Levant (ISIL)	Iraq	31058.0
	Taliban	Afghanistan	29269.0
	Boko Haram	Nigeria	16917.0
	Shining Path (SL)	Peru	11595.0
	Liberation Tigers of Tamil Eelam (LTTE)	Sri Lanka	10928.0
	Al-Shabaab	Somalia	8176.0
	Farabundo Marti National Liberation Front (FMLN)	El Salvador	8019.0
	Islamic State of Iraq and the Levant (ISIL)	Syria	6883.0
	Nicaraguan Democratic Force (FDN)	Nicaragua	6630.0
	Tehrik-i-Taliban Pakistan (TTP)	Pakistan	6014.0

```
In [161... gck.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Countries with most people killed by a particular Group",fontsize=13)
plt.xlabel("(Terrorist Group,Country)",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of people Killed",fontsize=13)
plt.show()
```

4. Sorting by Number of People Wounded

```
In [162... gcw=df[["gname","country_txt","nwound"]].groupby(["gname","country_txt"],axis=0).su
gcw
```

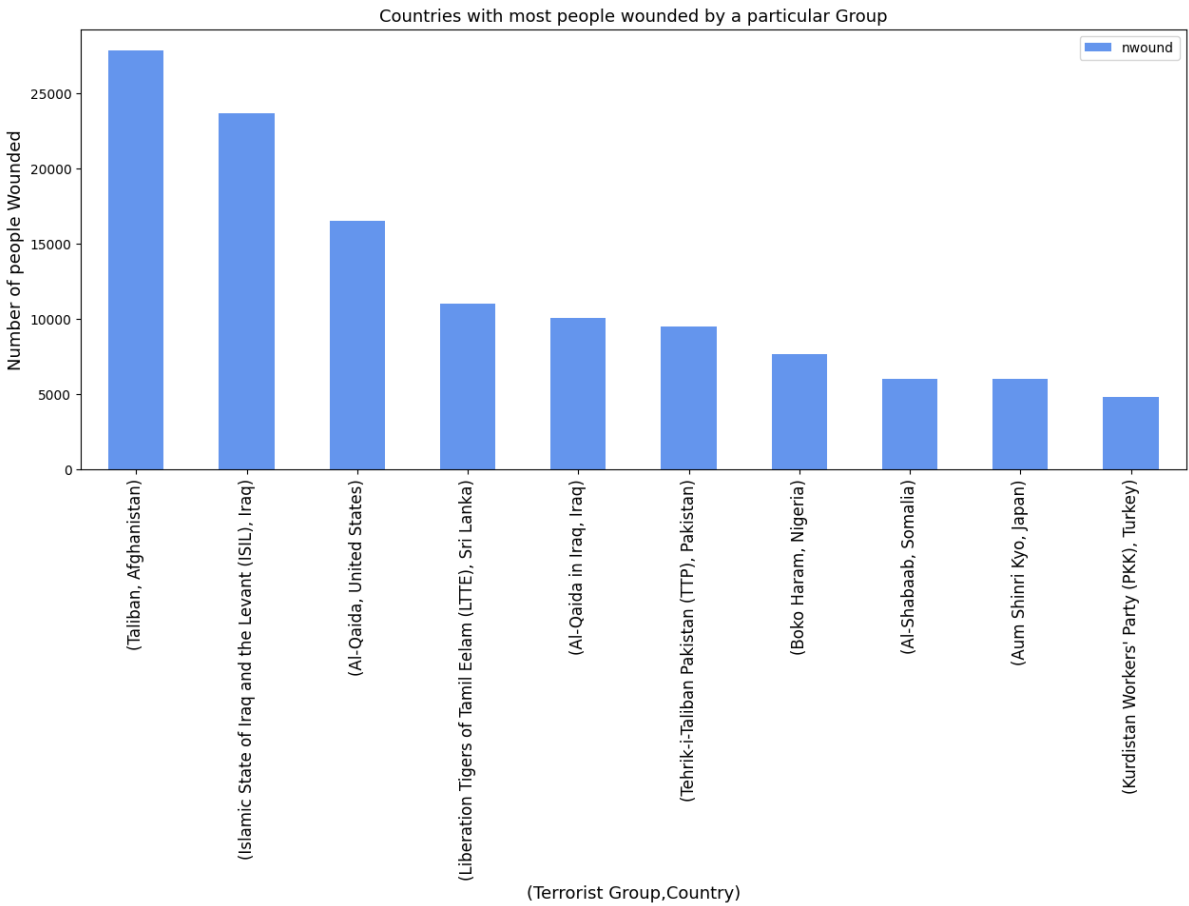
C:\Users\zeelt\AppData\Local\Temp\ipykernel_4504\459167379.py:1: PerformanceWarning: dropping on a non-lexsorted multi-index without a level parameter may impact performance.

```
gcw=df[["gname","country_txt","nwound"]].groupby(["gname","country_txt"],axis=
0).sum().sort_values(by="nwound",ascending=False).drop("Unknown").head(10)
```

Out[162]:

	gname	country_txt	nwound
	Taliban	Afghanistan	27871.0
	Islamic State of Iraq and the Levant (ISIL)	Iraq	23697.0
	Al-Qaida	United States	16493.0
	Liberation Tigers of Tamil Eelam (LTTE)	Sri Lanka	10991.0
	Al-Qaida in Iraq	Iraq	10075.0
	Tehrik-i-Taliban Pakistan (TTP)	Pakistan	9518.0
	Boko Haram	Nigeria	7671.0
	Al-Shabaab	Somalia	6025.0
	Aum Shinri Kyo	Japan	6003.0
	Kurdistan Workers' Party (PKK)	Turkey	4795.0

```
In [163... gcw.plot(kind="bar",color="cornflowerblue",figsize=(15,6))
plt.title("Countries with most people wounded by a particular Group",fontsize=13)
plt.xlabel("(Terrorist Group,Country)",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of people Wounded",fontsize=13)
plt.show()
```



Humanity Affected (World-wide) by Terrorist Attacks from 1970 to 2017

1. Total Casualties due to Terrorist Attacks: Killed + Wounded

```
In [164... casualty=df.loc[:, "Casualty"].sum()
print("Total number of Casualties due to Terrorist Attacks from 1970 to 2017 across the world :
935737.0
```

2. Total no. of people Killed due to Terrorist Attacks

```
In [166... kill=df.loc[:, "nkill"].sum()
print("Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :
411868.0
```

3. Total no. of people Wounded due to Terrorist Attacks

```
In [168... wound=df.loc[:, "nwound"].sum()
print("Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :
523869.0
```

Observations

1. Year wise Attacks :

(i) Attacks (a) Most number of attacks: 16903 in 2014 (b) Least number of attacks: 471 in 1971 (ii) Casualties (a) Most number of casualties: 85618 in 2014 (b) Least number of casualties: 255 in 1971 (iii) Killed (a) Most number of people killed: 44490 in 2014 (b) Least number of people killed: 173 in 1971 (iv) Wounded (a) Most number of people wounded: 44043 in 2015 (b) Least number of people wounded: 82 in 1971

2. Region wise Attacks :

(i) Attacks (a) Most number of attacks: 50474 in "Middle East & North Africa" (b) Least number of attacks: 282 in "Australasia & Oceania" (ii) Casualties (a) Most number of casualties: 351950 in "Middle East & North Africa" (b) Least number of casualties: 410 in Australasia & Oceania (iii) Killed (a) Most number of people killed: 137642 in "Middle East & North Africa" (b) Least number of people killed: 150 in "Australasia & Oceania" (iv)

Wounded (a) Most number of people wounded: 214308 in "Middle East & North Africa"
(b) Least number of people wounded: 260 in "Australasia & Oceania"

3. Country wise Attacks [Top 10] :

(i) Attacks (a) Most number of attacks: 24636 in "Iraq" (b) Least number of attacks: 4292 in "Turkey" (ii) Casualties (a) Most number of casualties: 213279 in "Iraq" (b) Least number of casualties: 22926 in "Philippines" (iii) Killed (a) Most number of people killed: 78589 in "Iraq" (b) Least number of people killed: 12053 in "El Salvador" (iv) Wounded (a) Most number of people wounded: 134690 in "Iraq" (b) Least number of people wounded: 10328 in "Colombia"

4. City wise Attacks [Top 10] :

(i) Attacks (a) Most number of attacks: 7589 in "Baghdad" (b) Least number of attacks: 1019 in "Athens" (ii) Casualties (a) Most number of casualties: 77876 in "Baghdad" (b) Least number of casualties: 5748 in "Aleppo" (iii) Killed (a) Most number of people killed: 21151 in "Baghdad" (b) Least number of people killed: 2125 in "Aleppo" (iv) Wounded (a) Most number of people wounded: 56725 in "Baghdad" (b) Least number of people wounded: 4955 in "Mogadishu"

5. Terrorist Group wise Attacks [Top 10] :

(i) Attacks (a) Most number of attacks : 7478 by "Taliban" (b) Least number of attacks : 2418 by "Boko Haram" (ii) Casualties (a) Most number of casualties : 69595 by "Islamic State of Iraq and the Levant (ISIL)" (b) Least number of casualties : 12130 by "Farabundo Marti National Liberation Front (FMLN)" (iii) Killed (a) Most number of people killed : 38923 by "Islamic State of Iraq and the Levant (ISIL)" (b) Least number of people killed : 5661 by "Revolutionary Armed Forces of Colombia (FARC)" (iv) Wounded (a) Most number of people wounded : 30672 by "Islamic State of Iraq and the Levant (ISIL)" (b) Least number of people wounded : 4908 by "Kurdistan Workers' Party (PKK)"

6. Attack Type wise Attacks:

(i) Attacks (a) Most number of attacks : 88255 by "Bombing/Explosion" (b) Least number of attacks : 659 by "Hijacking" (ii) Casualties (a) Most number of casualties : 530007 by "Bombing/Explosion" (b) Least number of casualties : 7407 by "Facility/Infrastructure Attack" (iii) Killed (a) Most number of people killed : 160297 by "Armed Assault" (b) Least number of people killed : 880 by "Unarmed Assault" (iv) Wounded (a) Most number of people wounded : 372686 by "Bombing/Explosion" (b) Least number of people wounded : 3765 by "Facility/Infrastructure Attack"

7. Target Type wise Attacks:

(i) Attacks (a) Most number of attacks : 43511 over "Private Citizens & Property" (b) Least number of attacks : 263 over "Abortion Related" (ii) Casualties (a) Most number of casualties : 319176 over "Private Citizens & Property" (b) Least number of casualties : 56 over "Abortion Related" (iii) Killed (a) Most number of people killed : 140504 over "Private Citizens & Property" (b) Least number of people killed : 10 over "Abortion Related" (iv) Wounded (a) Most number of people wounded : 178672 over "Private Citizens & Property" (b) Least number of people wounded : 46 over "Abortion Related"

8. Group and Country wise Attacks [Top 10] :

(i) Attacks (a) Most number of attacks : 7423 by "Taliban" in "Afghanistan" (b) Least number of attacks : 2087 by "Boko Haram" in "Nigeria" (ii) Casualties (a) Most number of casualties : 57140 by "Taliban" in "Afghanistan" (b) Least number of casualties : 12068 by "Farabundo Marti National Liberation Front (FMLN)" in "El Salvador" (iii) Killed (a) Most number of people killed : 31058 by "Islamic State of Iraq and the Levant (ISIL)" in "Iraq" (b) Least number of people killed : 6014 by "Tehrik-i-Taliban Pakistan (TTP)" in "Pakistan" (iv) Wounded (a) Most number of people wounded : 27871 by "Taliban" in "Afghanistan" (b) Least number of people wounded : 4795 by "Kurdistan Workers' Party (PKK)" in "Turkey"

9. Humanity Affected (World-wide) by Terrorist Attacks from 1970 to 2017 :

(i) Total number of Casualties due to Terrorist Attacks from 1970 to 2017 across the world : 935737 (ii) Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world : 411868 (iii) Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world : 523869