Exploratory Data Analysis - Terrorism

-Vaishnavi Parvathy N

Importing all the libraries required for analysis

In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px
```

Importing and observing the data

In [3]:
```
df=pd.read_csv("globalterrorismdb_0718dist.csv", encoding="latin1")
df=pd.DataFrame(df)
print("Data has been successfully imported")
df.head()
```

```
Data has been successfully imported
```

Out[3]:

	eventid	iyear	imonth	iday	approxdate	extended	resolution	country	country_txt	region	...	addnotes	scite1	scite2	scite3	dbsource	IN
0	197000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN	NaN	PGIS	
1	197000000002	1970	0	0	NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN	NaN	PGIS	
2	197001000001	1970	1	0	NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN	NaN	PGIS	
3	197001000002	1970	1	0	NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN	NaN	PGIS	
4	197001000003	1970	1	0	NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN	NaN	PGIS	

5 rows × 135 columns

In [4]:
```
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 [5]:
```
df.shape
```

Out[5]:
```
(181691, 135)
```

In [6]:
```
df.columns
```

Out[6]:
```
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 [7]:
```
for i in df.columns:
    print(i,end=", ")
```

```
eventid, iyear, imonth, iday, approxdate, extended, resolution, country, country_txt, region, region_txt, provstate, city, latitud
e, longitude, specificity, vicinity, location, summary, crit1, crit2, crit3, doubtterr, alternative, alternative_txt, multiple, su
ccess, suicide, attacktype1, attacktype1_txt, attacktype2, attacktype2_txt, attacktype3, attacktype3_txt, targtype1, targtype1_tx
t, 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_t
xt, gname, gsubname, gname2, gsubname2, gname3, gsubname3, motive, guncertain1, guncertain2, guncertain3, individual, nperps, nper
pcap, claimed, claimmode, claimmode_txt, claim2, claimmode2, claimmode2_txt, claim3, claimmode3, claimmode3_txt, compclaim, weapty
pe1, 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, nkillt
er, nwound, nwoundus, nwoundte, property, propextent, propextent_txt, propvalue, propcomment, ishostkid, nhostkid, nhostkidus, nho
urs, ndays, divert, kidhijcountry, ransom, ransomamt, ransomamtus, ransompaid, ransompaidus, ransomnote, hostkidoutcome, hostkidou
tcome_txt, nreleased, addnotes, scite1, scite2, scite3, dbsource, INT_LOG, INT_IDEO, INT_MISC, INT_ANY, related,
```

Procressing the data

In [8]:
```
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[8]:

	iyear	imonth	iday	country_txt	region_txt	provstate	city	latitude	longitude	location	summary	attacktype1_txt	targtype1_txt	gr
0	1970	7	2	Dominican Republic	Central America & Caribbean	NaN	Santo Domingo	18.456792	-69.951164	NaN	NaN	Assassination	Private Citizens & Property	MAI
1	1970	0	0	Mexico	North America	Federal	Mexico city	19.371887	-99.086624	NaN	NaN	Hostage Taking (Kidnapping)	Government (Diplomatic)	23 Septe Comm Le
2	1970	1	0	Philippines	Southeast Asia	Tarlac	Unknown	15.478598	120.599741	NaN	NaN	Assassination	Journalists & Media	Unk
3	1970	1	0	Greece	Western Europe	Attica	Athens	37.997490	23.762728	NaN	NaN	Bombing/Explosion	Government (Diplomatic)	Unk
4	1970	1	0	Japan	East Asia	Fukouka	Fukouka	33.580412	130.396361	NaN	NaN	Facility/Infrastructure Attack	Government (Diplomatic)	Unk

In [9]:
```
df.rename(columns={"iyear":"Year","imonth":"Month","iday":"Day","country_txt":"Country",
                   "region_txt":"Region","provstate":"Province/State","city":"City",
                   "latitude":"Latitude","longitude":"Longitude","location":"Location",
                   "summary":"Summary","attacktype1_txt":"Attack Type","targtype1_txt":"Target Type",
                   "gname":"Group Name","motive":"Motive","weaptype1_txt":"Weapon Type",
                   "nkill":"Killed","nwound":"Wounded","addnotes":"Add Notes"},inplace=True)

df.head()
```

Out[9]:

	Year	Month	Day	Country	Region	Province/State	City	Latitude	Longitude	Location	Summary	Attack Type	Target Type	
0	1970	7	2	Dominican Republic	Central America & Caribbean	NaN	Santo Domingo	18.456792	-69.951164	NaN	NaN	Assassination	Private Citizens & Property	MA

	Year	Month	Day	Country	Region	Province/State	City	Latitude	Longitude	Location	Summary	Attack Type	Target Type	C I
1	1970	0	0	Mexico	North America	Federal	Mexico city	19.371887	-99.086624	NaN	NaN	Hostage Taking (Kidnapping)	Government (Diplomatic)	2 Sept Comr L
2	1970	1	0	Philippines	Southeast Asia	Tarlac	Unknown	15.478598	120.599741	NaN	NaN	Assassination	Journalists & Media	Unk
3	1970	1	0	Greece	Western Europe	Attica	Athens	37.997490	23.762728	NaN	NaN	Bombing/Explosion	Government (Diplomatic)	Unk
4	1970	1	0	Japan	East Asia	Fukouka	Fukouka	33.580412	130.396361	NaN	NaN	Facility/Infrastructure Attack	Government (Diplomatic)	Unk

In [10]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Data columns (total 19 columns):
 #   Column          Non-Null Count   Dtype  
---  ------          --------------   -----  
 0   Year            181691 non-null  int64  
 1   Month           181691 non-null  int64  
 2   Day             181691 non-null  int64  
 3   Country         181691 non-null  object 
 4   Region          181691 non-null  object 
 5   Province/State  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  Attack Type     181691 non-null  object 
 12  Target Type     181691 non-null  object 
 13  Group Name      181691 non-null  object 
 14  Motive          50561 non-null   object 
 15  Weapon Type     181691 non-null  object 
 16  Killed          171378 non-null  float64
 17  Wounded         165380 non-null  float64
 18  Add Notes       28289 non-null   object 
```

```
dtypes: float64(4), int64(3), object(12)
memory usage: 26.3+ MB
```

In [11]:
```
df.shape
```

Out[11]:
```
(181691, 19)
```

In [12]:
```
df.isnull().sum()
```

Out[12]:
```
Year                  0
Month                 0
Day                   0
Country               0
Region                0
Province/State      421
City                434
Latitude           4556
Longitude          4557
Location         126196
Summary           66129
Attack Type           0
Target Type           0
Group Name            0
Motive           131130
Weapon Type           0
Killed            10313
Wounded           16311
Add Notes        153402
dtype: int64
```

In [13]:
```
df["Killed"]=df["Killed"].fillna(0)
df["Wounded"]=df["Wounded"].fillna(0)
df["Casualty"]=df["Killed"]+df["Wounded"]
df.describe()
```

Out[13]:

	Year	Month	Day	Latitude	Longitude	Killed	Wounded	Casualty
count	181691.000000	181691.000000	181691.000000	177135.000000	1.771340e+05	181691.000000	181691.000000	181691.000000
mean	2002.638997	6.467277	15.505644	23.498343	-4.586957e+02	2.266860	2.883296	5.150156
std	13.259430	3.388303	8.814045	18.569242	2.047790e+05	11.227057	34.309747	40.555416

	Year	Month	Day	Latitude	Longitude	Killed	Wounded	Casualty
min	1970.000000	0.000000	0.000000	-53.154613	-8.618590e+07	0.000000	0.000000	0.000000
25%	1991.000000	4.000000	8.000000	11.510046	4.545640e+00	0.000000	0.000000	0.000000
50%	2009.000000	6.000000	15.000000	31.467463	4.324651e+01	0.000000	0.000000	1.000000
75%	2014.000000	9.000000	23.000000	34.685087	6.871033e+01	2.000000	2.000000	4.000000
max	2017.000000	12.000000	31.000000	74.633553	1.793667e+02	1570.000000	8191.000000	9574.000000

Observation: 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

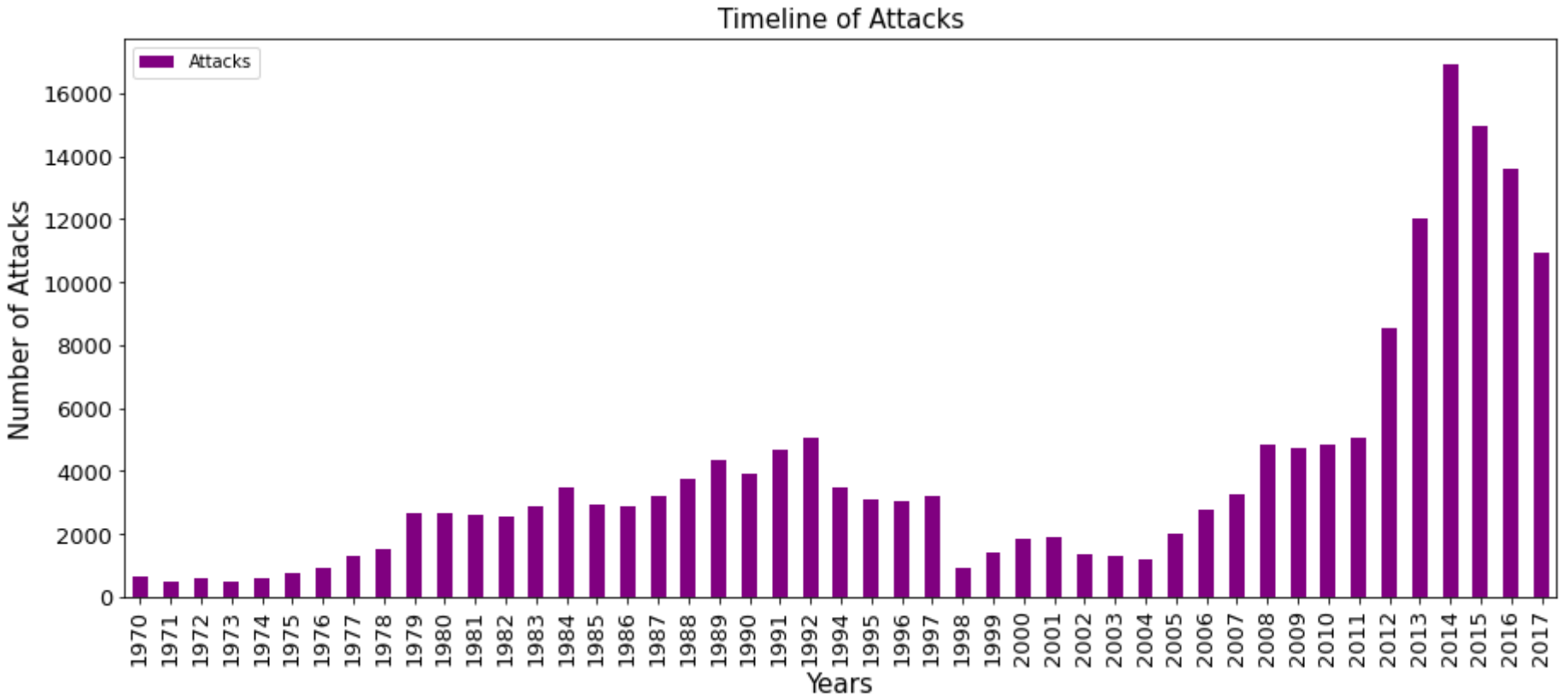
1. Year wise Attacks: Number of Attacks in each Year

In [14]:
```
attacks=df["Year"].value_counts(dropna=False).sort_index().to_frame().reset_index().rename(columns={"index":"Year","Year":"Attacks
attacks.head()
```

Out[14]:

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

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



(i). Most number of attacks(16903) in 2014 (ii). Least number of attacks(471) in 1971

Total Casualties (Killed + Wounded) in each Year

In [16]:
```
yc=df[["Year","Casualty"]].groupby("Year").sum()
yc.head()
```

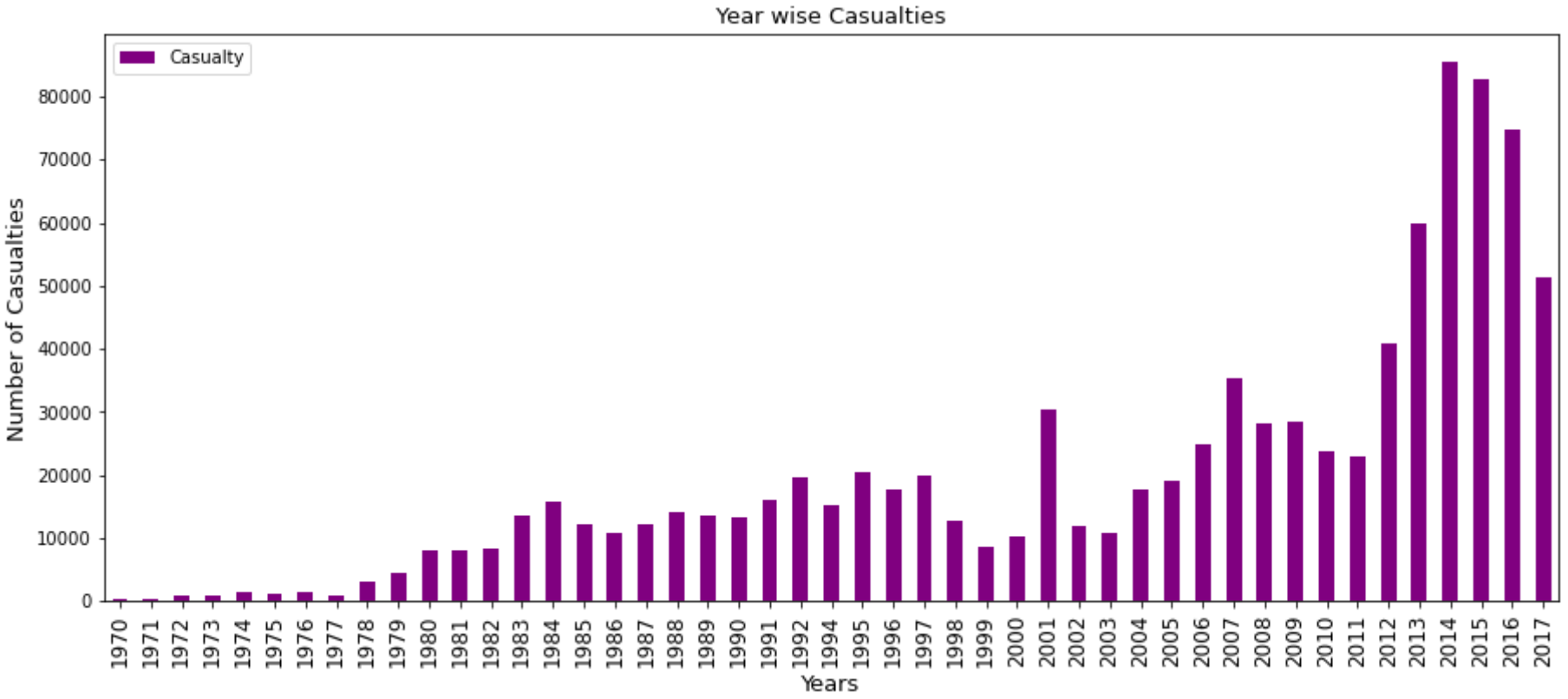
Out[16]:

Year	Casualty
1970	386.0
1971	255.0
1972	975.0

Year	Casualty
1973	865.0
1974	1404.0

In [17]:

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



Killed in each Year

In [18]:
```
yk=df[["Year","Killed"]].groupby("Year").sum()
yk.head()
```

Out[18]:

Year	Killed
1970	174.0
1971	173.0
1972	566.0
1973	370.0
1974	539.0

Wounded in each Region

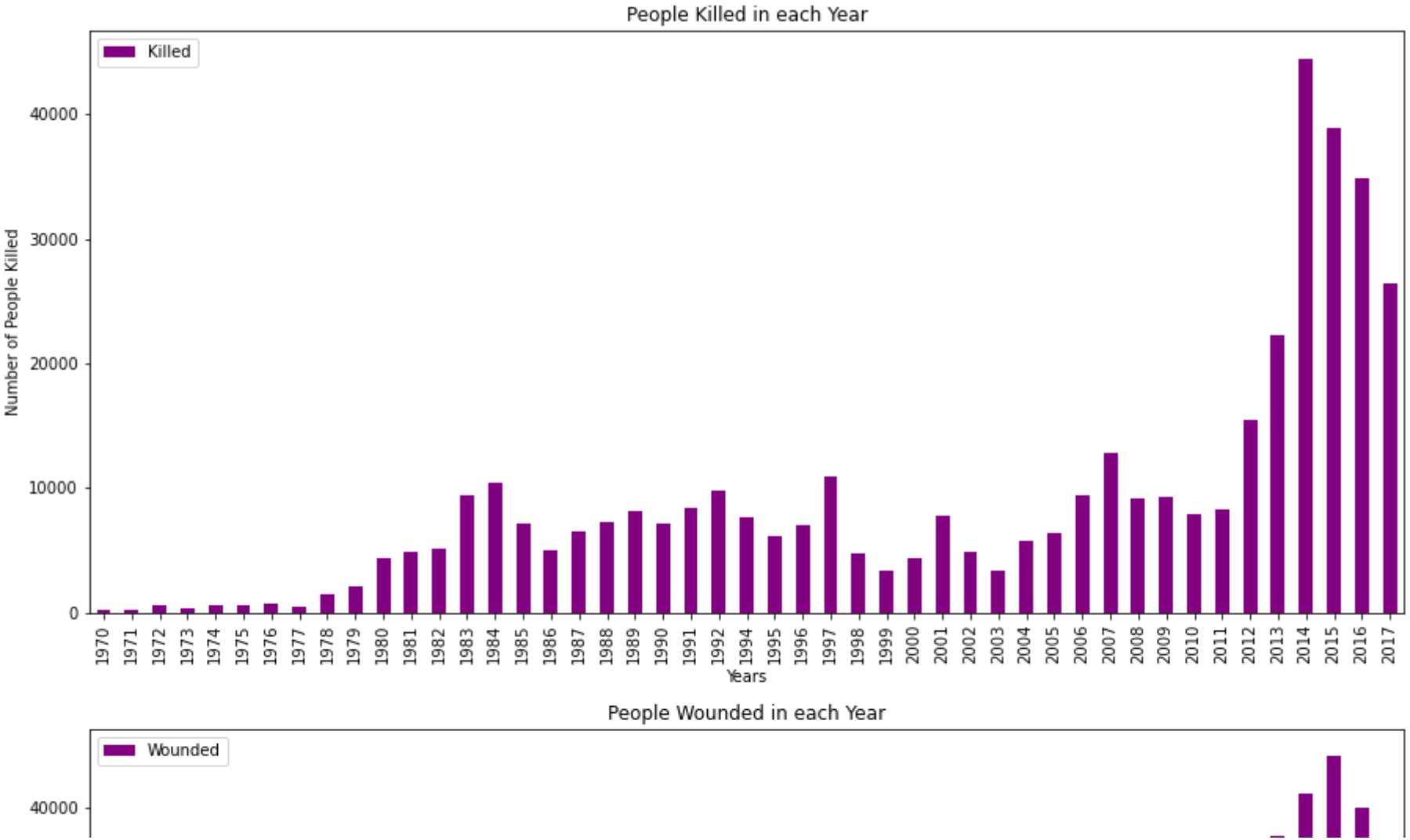
In [19]:
```
yw=df[["Year","Wounded"]].groupby("Year").sum()
yw.head()
```

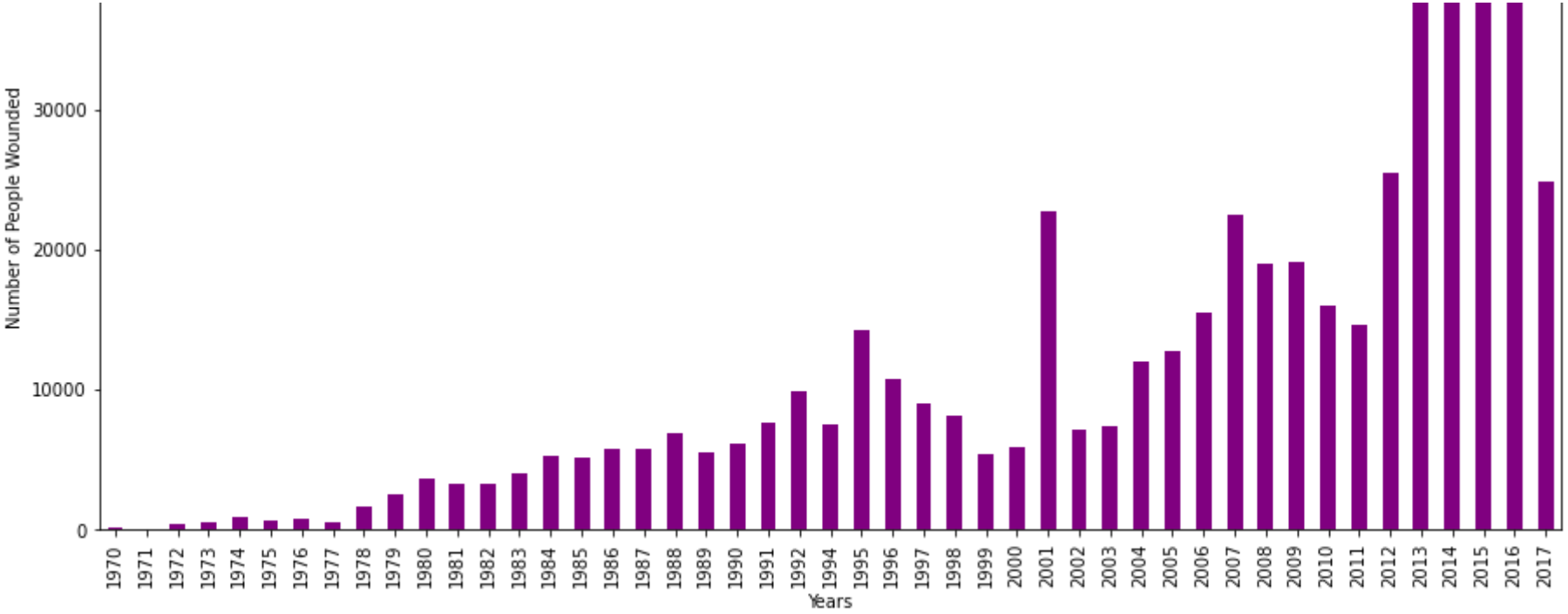
Out[19]:

Year	Wounded
1970	212.0
1971	82.0
1972	409.0
1973	495.0
1974	865.0

In [20]:
```
fig=plt.figure()
ax0=fig.add_subplot(2,1,1)
ax1=fig.add_subplot(2,1,2)

#Killed
yk.plot(kind="bar",color="purple",figsize=(15,15),ax=ax0)
ax0.set_title("People Killed in each Year")
```

```
ax0.set_xlabel("Years")
ax0.set_ylabel("Number of People Killed")

#Wounded
yw.plot(kind="bar",color="purple",figsize=(15,15),ax=ax1)
ax1.set_title("People Wounded in each Year")
ax1.set_xlabel("Years")
ax1.set_ylabel("Number of People Wounded")

plt.show()
```





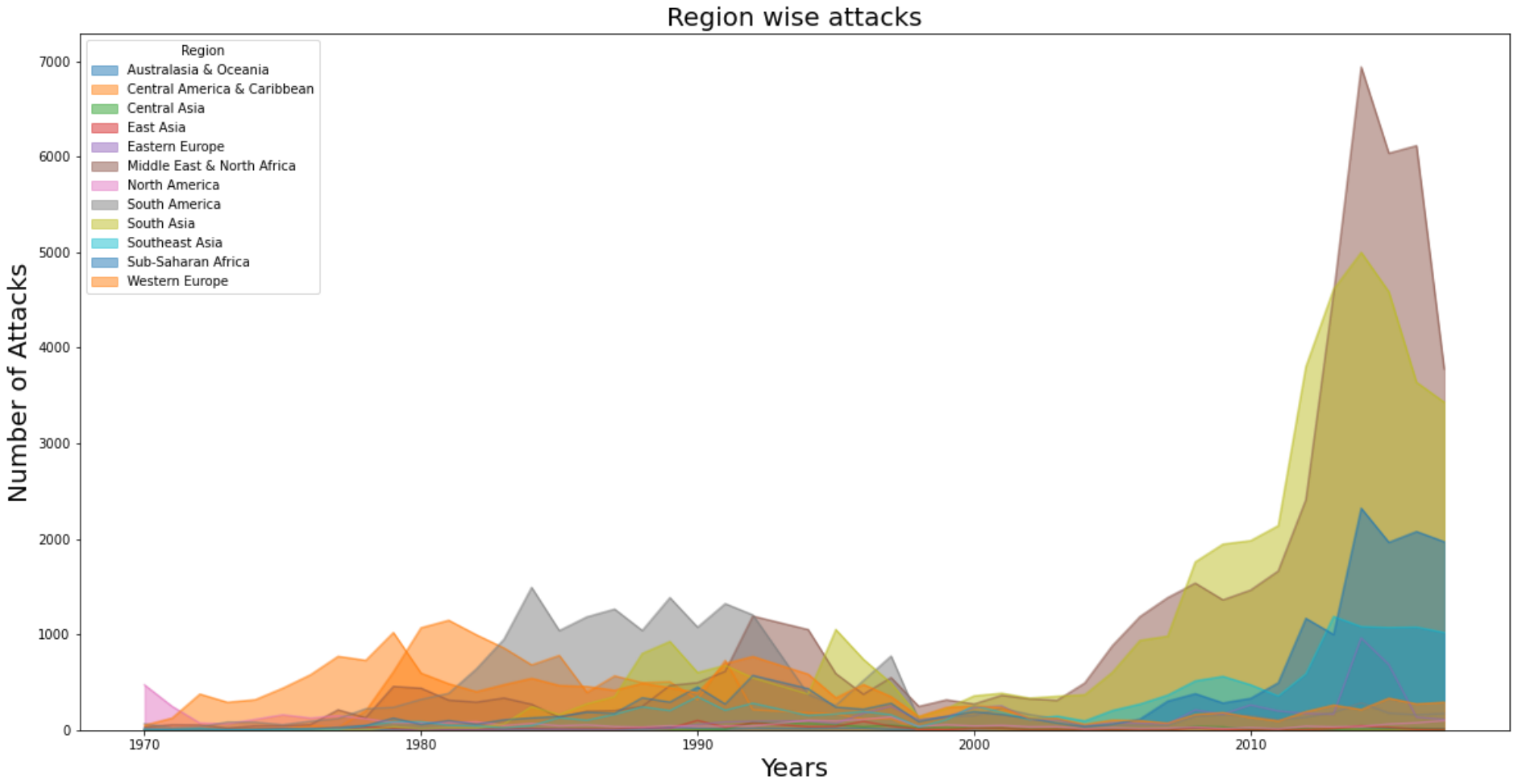
1. Region wise Attacks Distribution of Terrorist Attacks over Regions from 1970-2017

In [21]:
```
reg=pd.crosstab(df.Year,df.Region)
reg.head()
```

Out[21]:

Region	Australasia & Oceania	Central America & Caribbean	Central Asia	East Asia	Eastern Europe	Middle East & North Africa	North America	South America	South Asia	Southeast Asia	Sub-Saharan Africa	Western Europe
Year												
1970	1	7	0	2	12	28	472	65	1	10	3	50
1971	1	5	0	1	5	55	247	24	0	6	2	125
1972	8	3	0	0	1	53	73	33	1	16	4	376
1973	1	6	0	2	1	19	64	83	1	2	4	290
1974	1	11	0	4	2	42	111	81	2	3	7	317

In [22]:
```
reg.plot(kind="area", stacked=False, alpha=0.5,figsize=(20,10))
plt.title("Region wise attacks",fontsize=20)
plt.xlabel("Years",fontsize=20)
plt.ylabel("Number of Attacks",fontsize=20)
plt.show()
```



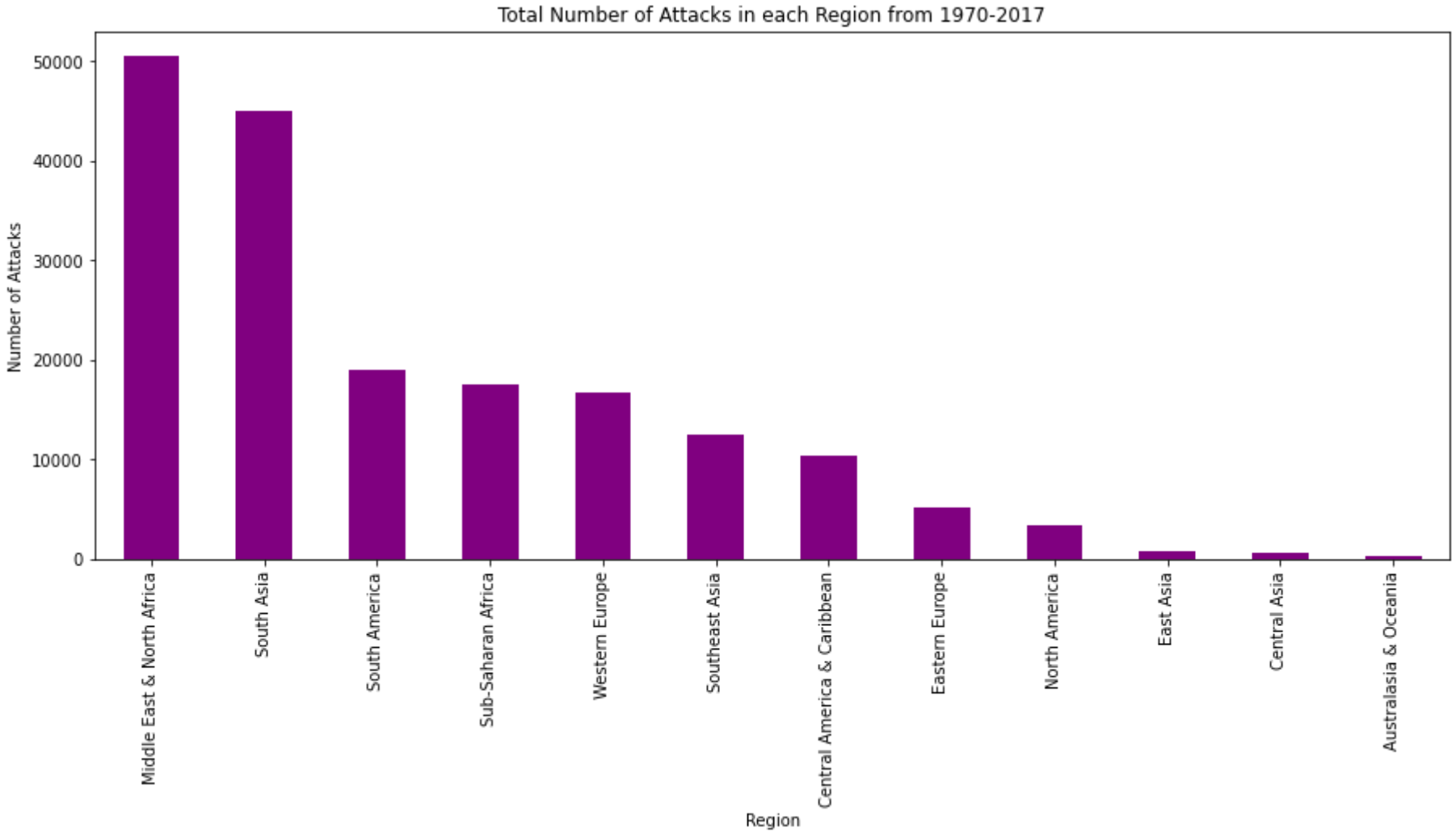
Total Terrorist Attacks in each Region from 1970-2017

In [23]:
```
regt=reg.transpose()
regt["Total"]=regt.sum(axis=1)
```

```
ra=regt["Total"].sort_values(ascending=False)
ra
```

Out[23]:
```
Region
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 [24]:
```
ra.plot(kind="bar",color="purple",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()
```



In [25]:
```
rc=df[["Region","Casualty"]].groupby("Region").sum().sort_values(by="Casualty",ascending=False)
rc
```

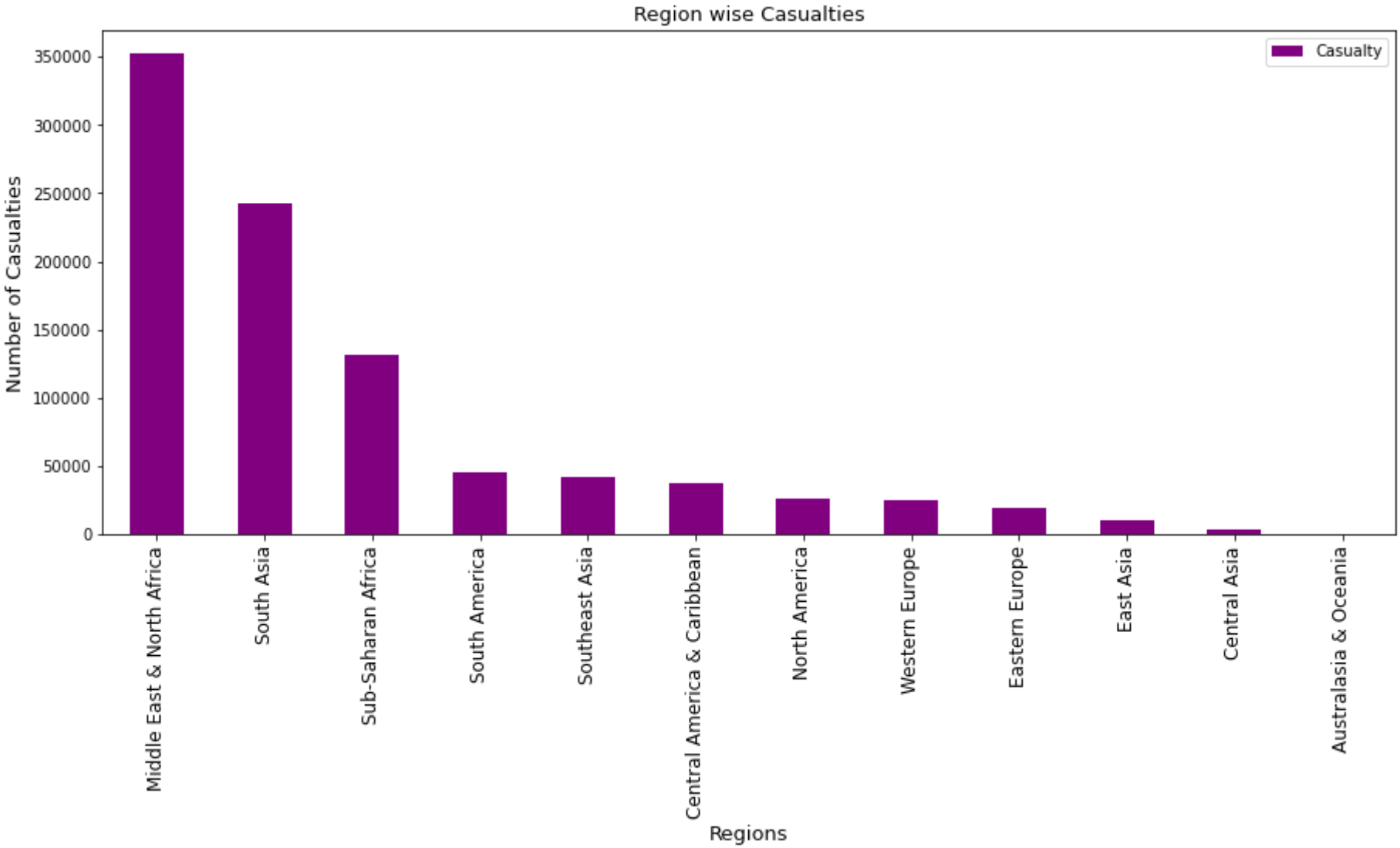
Out[25]:

Region	Casualty
Middle East & North Africa	351950.0
South Asia	242679.0

Region	Casualty
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 [26]:

```
rc.plot(kind="bar",color="purple",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()
```



Killed in each Region

In [27]:
```
rk=df[["Region","Killed"]].groupby("Region").sum().sort_values(by="Killed",ascending=False)
rk
```

Out[27]:

	Killed

Region	Killed

Region	
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

Wounded in each Region

In [28]:
```
rw=df[["Region","Wounded"]].groupby("Region").sum().sort_values(by="Wounded",ascending=False)
rw
```

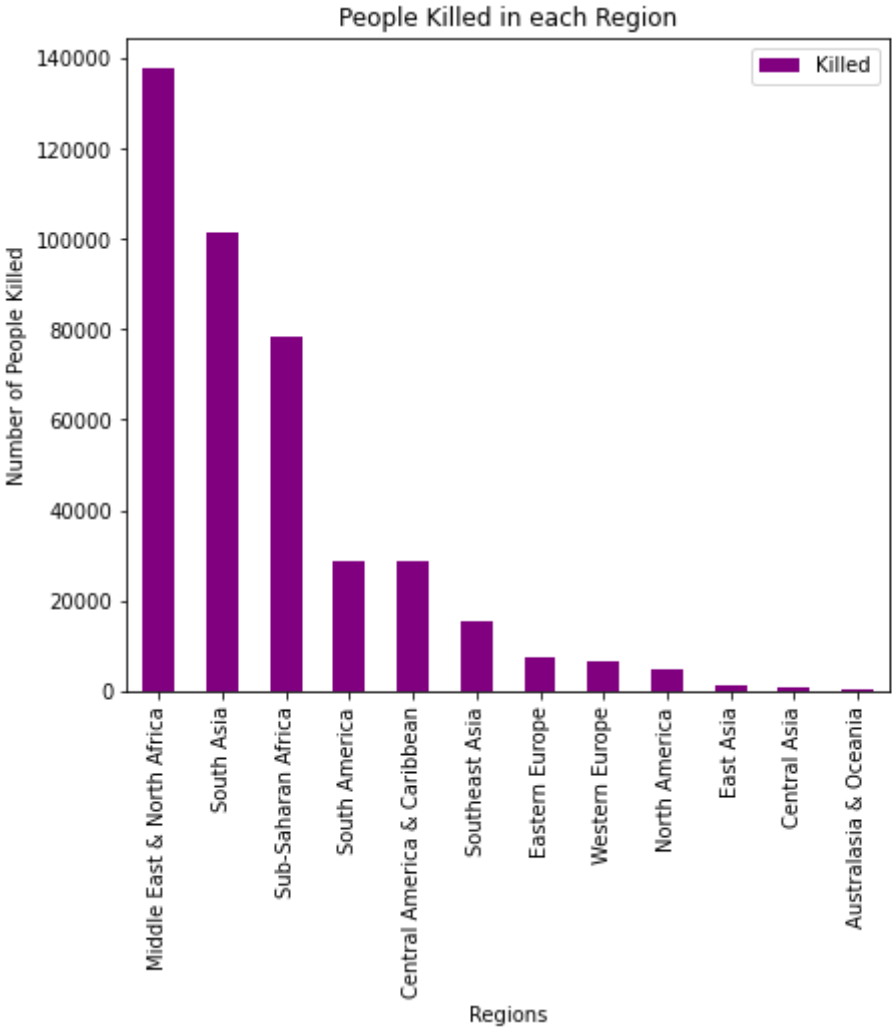
Out[28]:

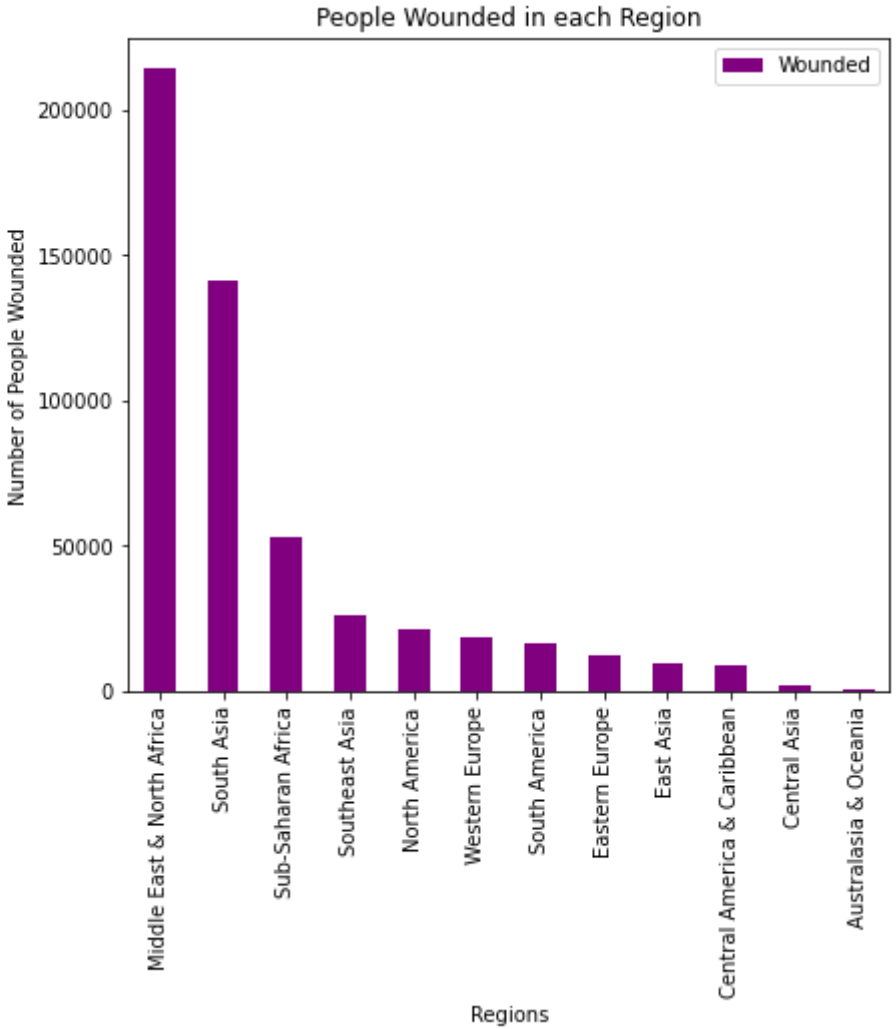
Region	Wounded
Middle East & North Africa	214308.0
South Asia	141360.0
Sub-Saharan Africa	52857.0
Southeast Asia	26259.0

Region	Wounded
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 [29]:

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

#Killed
rk.plot(kind="bar",color="purple",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="purple",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()
```





3. Country wise Attacks - Top 10

Number of Attacks in each Country

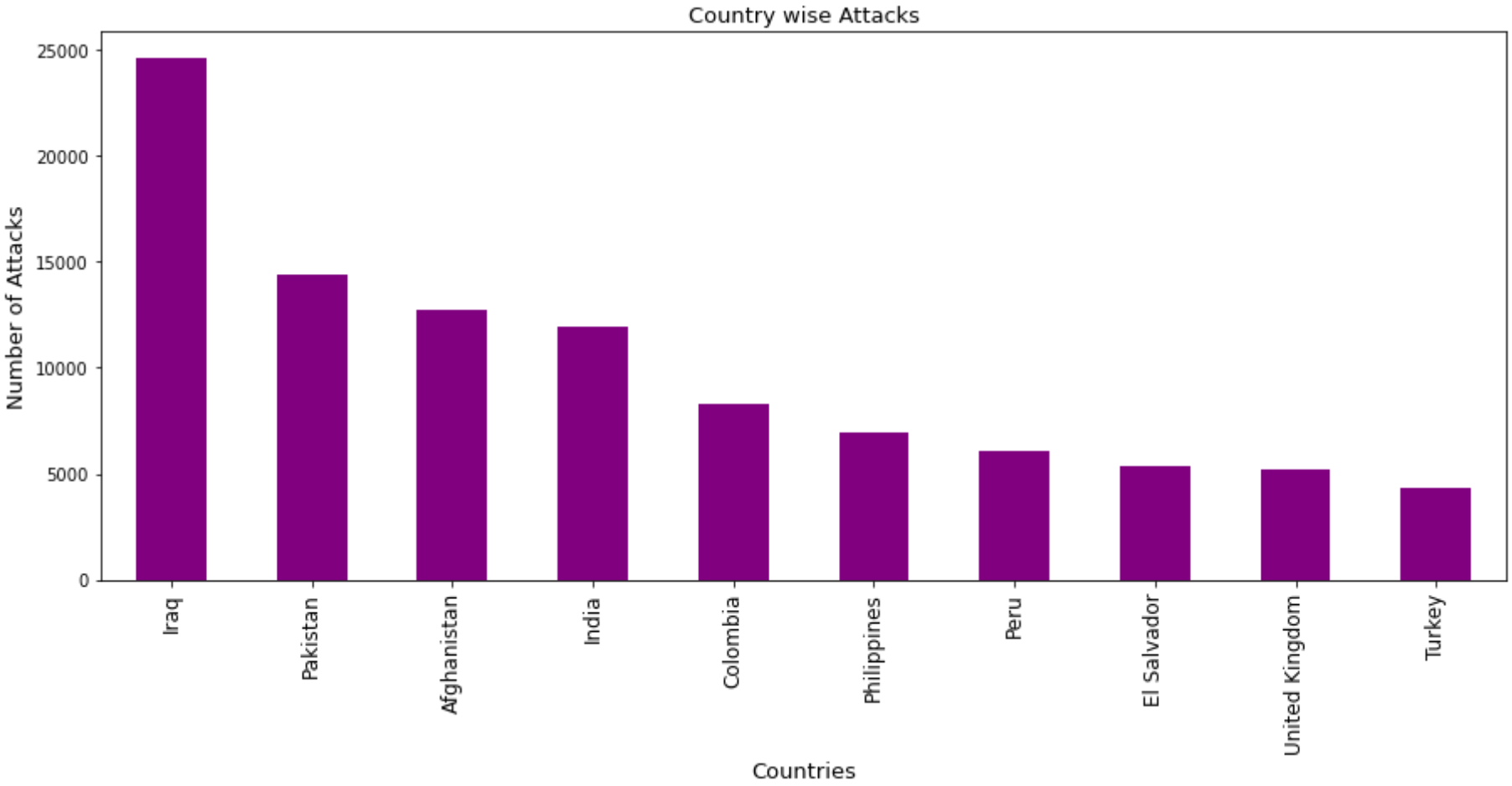
In [30]:
```
ct=df["Country"].value_counts().head(10)
ct
```

Out[30]:
```
Iraq                24636
```

```
Pakistan          14368
Afghanistan       12731
India             11960
Colombia           8306
Philippines        6908
Peru               6096
El Salvador        5320
United Kingdom     5235
Turkey             4292
Name: Country, dtype: int64
```

In [31]:

```
ct.plot(kind="bar",color="purple",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()
```



Total Casualties (Killed + Wounded) in each Country

In [32]:
```
cnc=df[["Country","Casualty"]].groupby("Country").sum().sort_values(by="Casualty",ascending=False)
cnc.head(10)
```

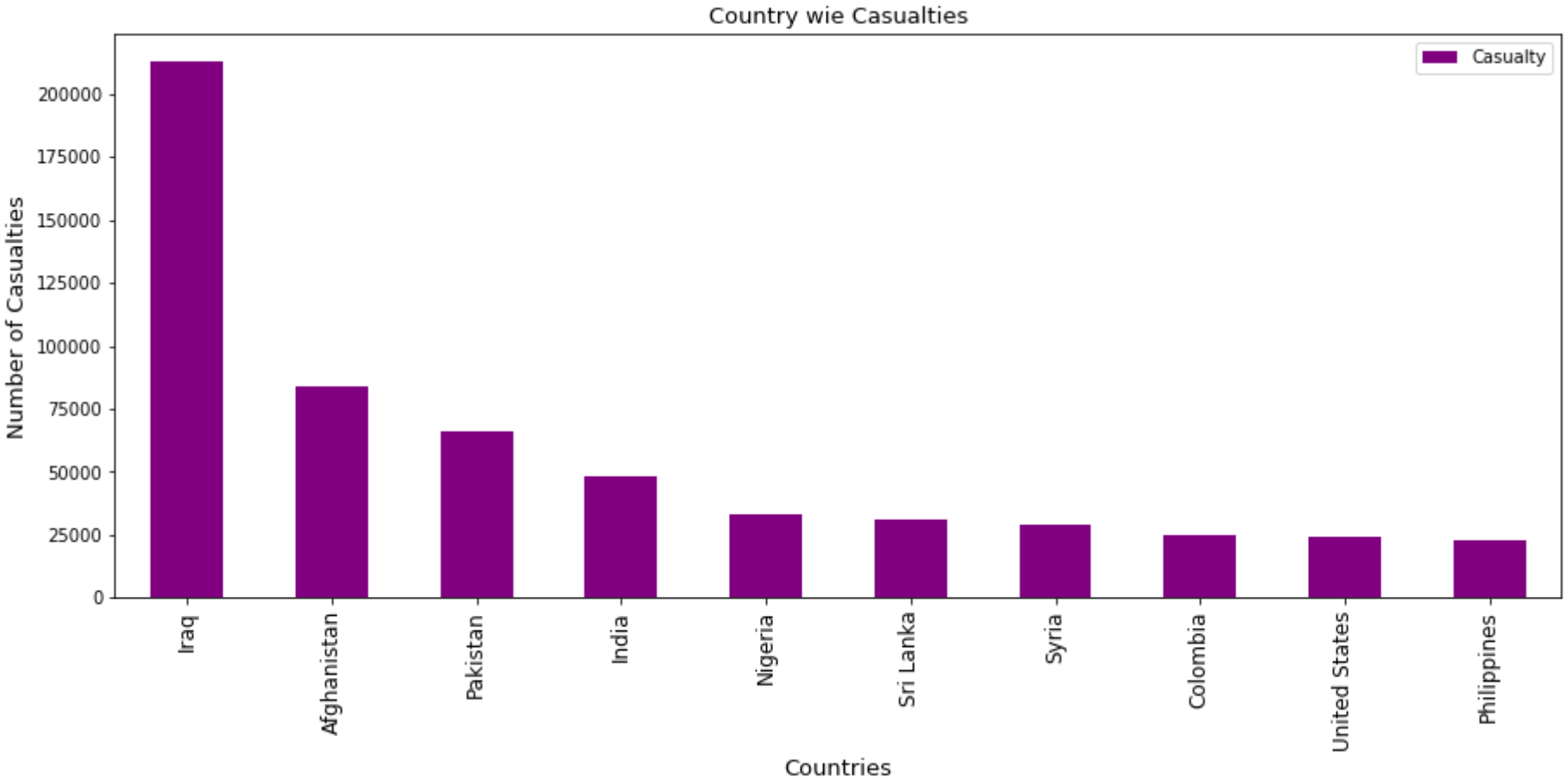
Out[32]:

Country	Casualty
Iraq	213279.0
Afghanistan	83661.0

Country	Casualty
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 [41]:

```
cnc[:10].plot(kind="bar",color="purple",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()
```



Killed in each Country

In [42]:
```
cnk=df[["Country","Killed"]].groupby("Country").sum().sort_values(by="Killed",ascending=False)
cnk.head(10)
```

Out[42]:

Country	Killed
Iraq	78589.0
Afghanistan	39384.0
Pakistan	23822.0

Country	Killed
Nigeria	22682.0
India	19341.0
Sri Lanka	15530.0
Syria	15229.0
Colombia	14698.0
Peru	12771.0
El Salvador	12053.0

Wounded in each Country

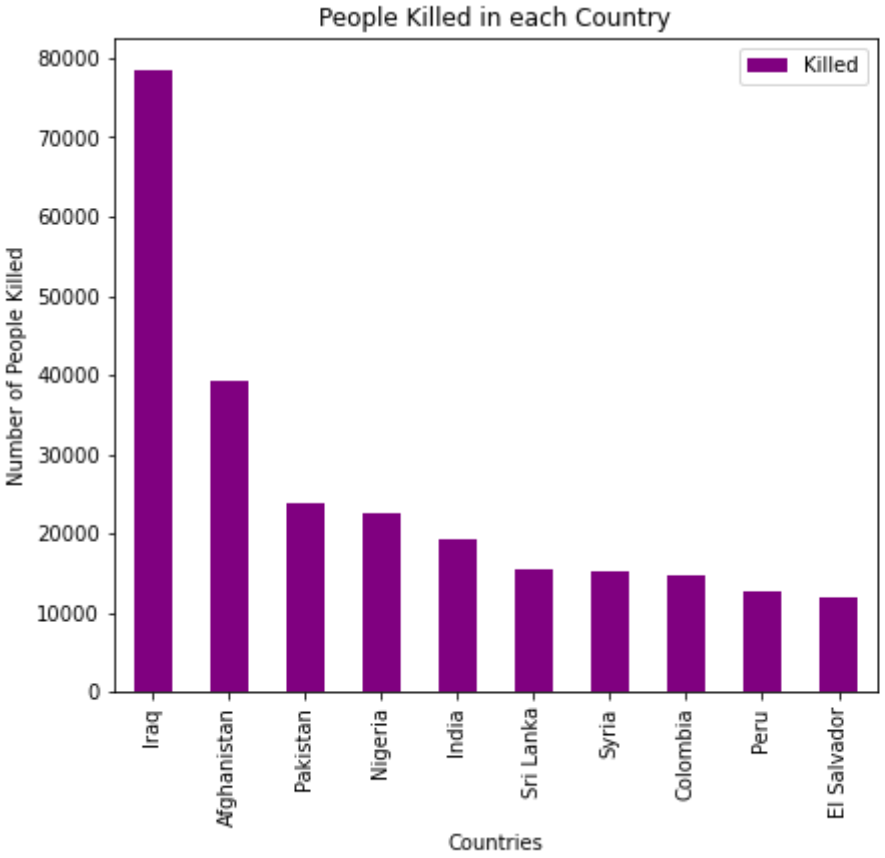
In [35]:
```
cnw=df[["Country","Wounded"]].groupby("Country").sum().sort_values(by="Wounded",ascending=False)
cnw.head(10)
```

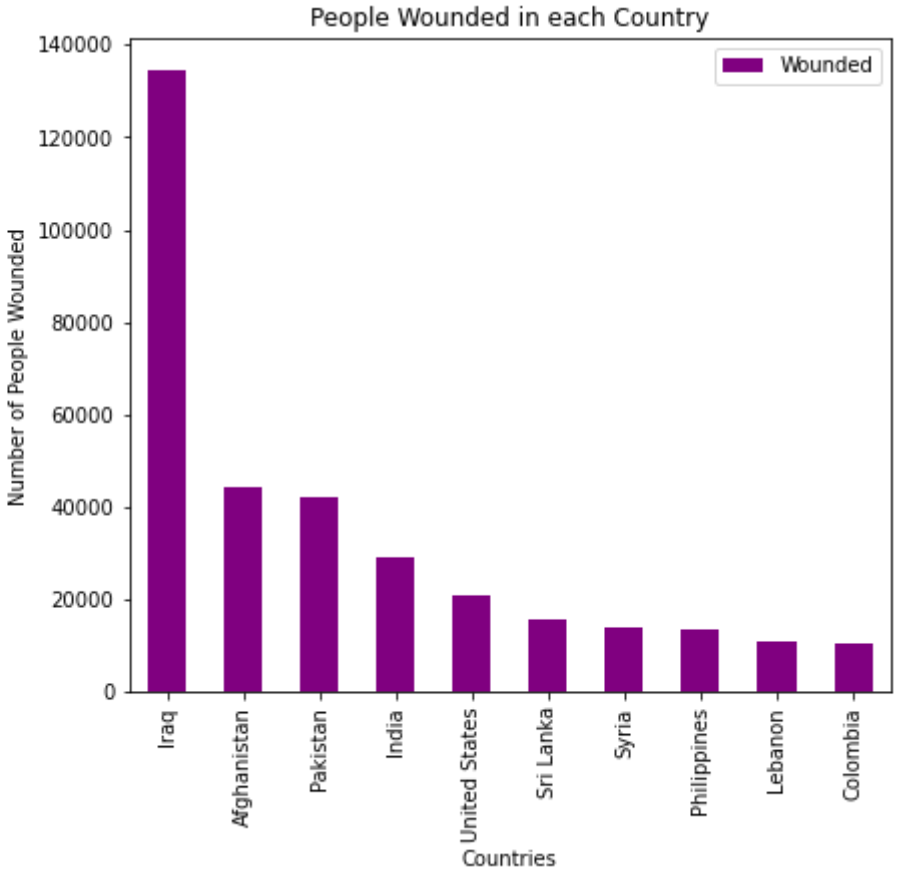
Out[35]:

Country	Wounded
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 [36]:

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

#Killed
cnk[:10].plot(kind="bar",color="purple",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="purple",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()
```





4. City wise Attacks - Top 10

Number of Attacks in each city

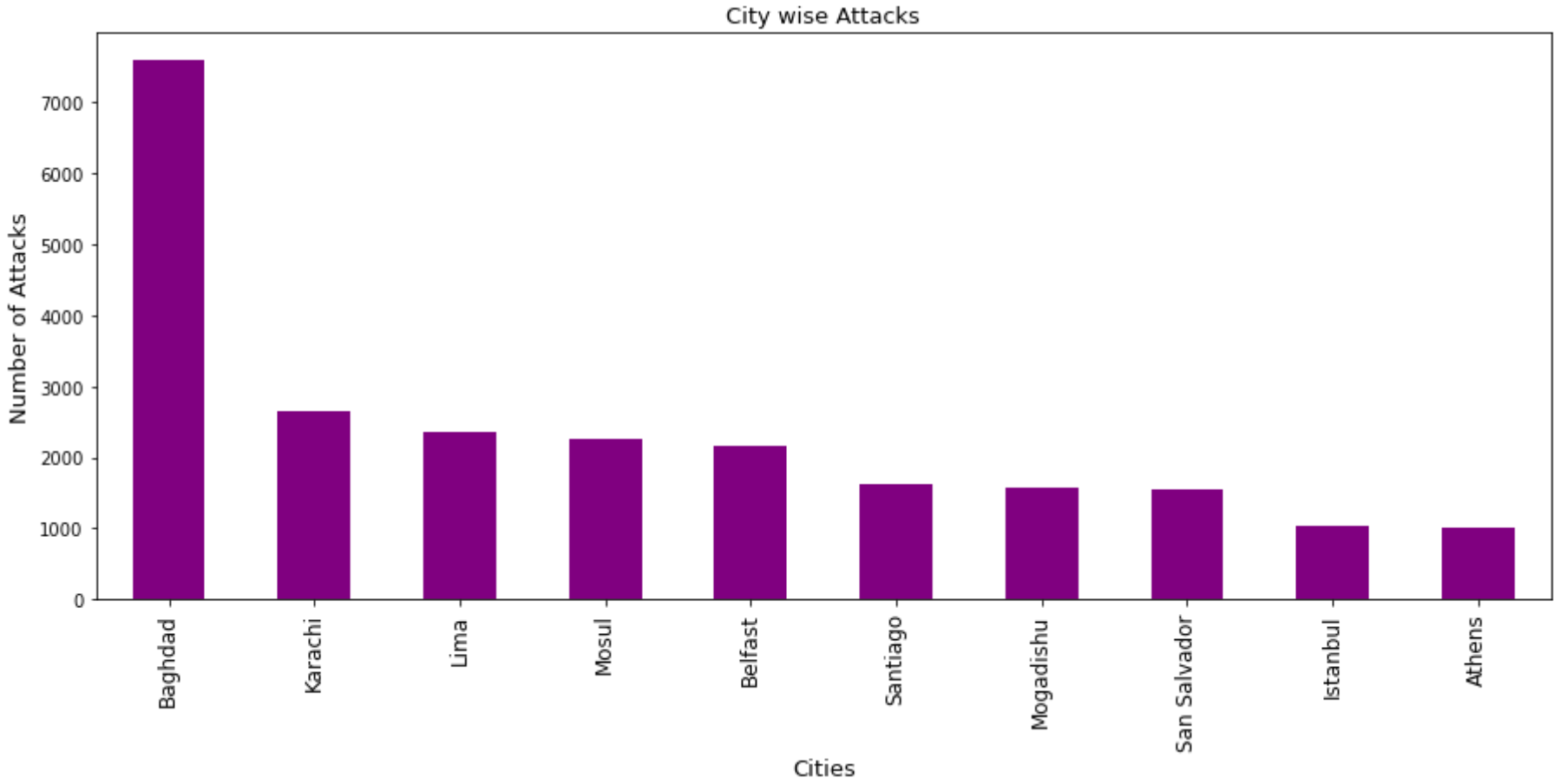
In [37]:
```
city=df["City"].value_counts()[1:11]
city
```

Out[37]:
```
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 [38]:

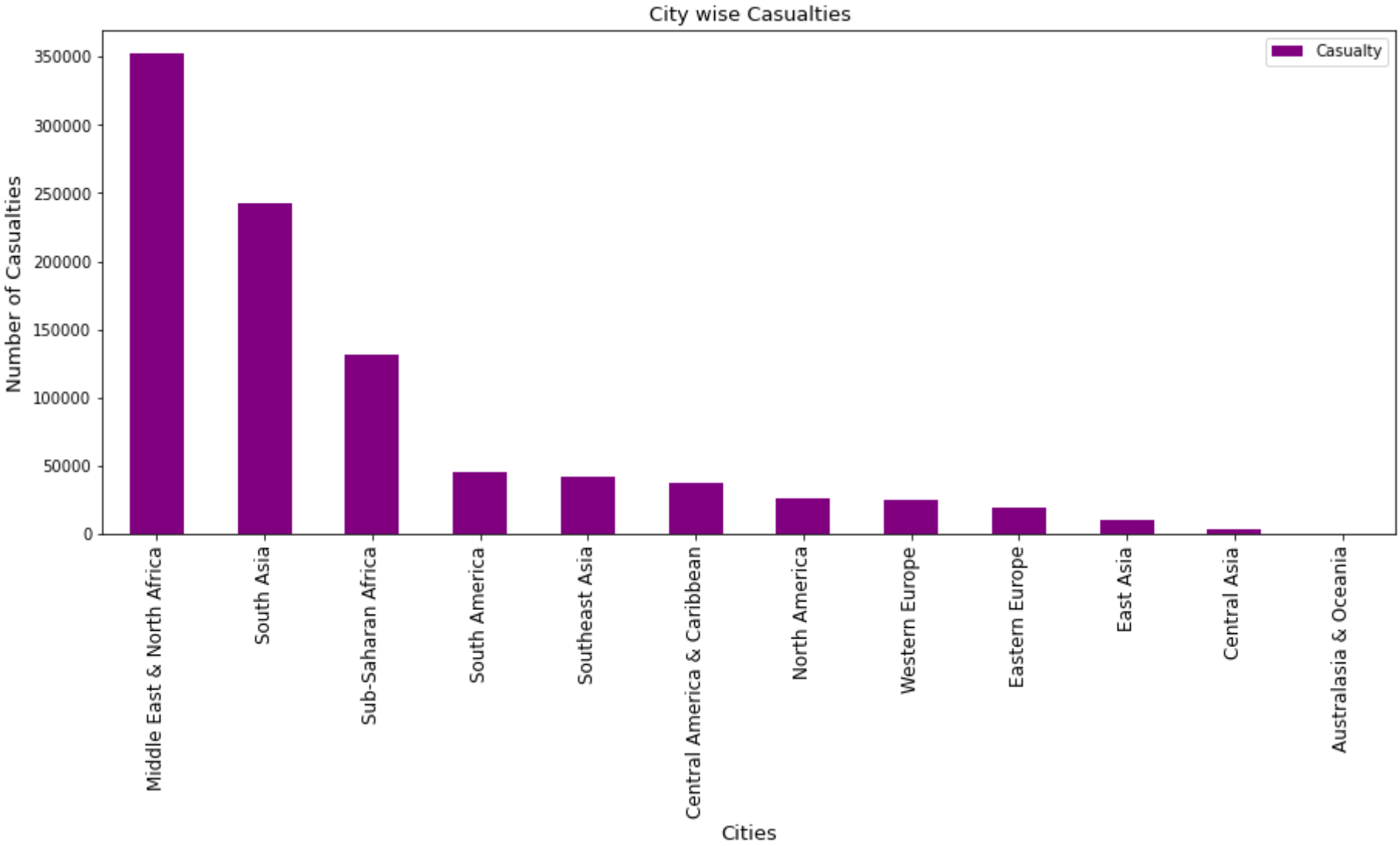
```
city.plot(kind="bar",color="purple",figsize=(15,6))
plt.title("City wise Attacks",fontsize=13)
plt.xlabel("Cities",fontsize=13)
plt.xticks(fontsize=12)
plt.ylabel("Number of Attacks",fontsize=13)
plt.show()
```



Total Casualties (Killed + Wounded) in each City

In [43]:

```
rc.plot(kind="bar",color="purple",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()
```



In [44]:
```
cc=df[["City","Casualty"]].groupby("City").sum().sort_values(by="Casualty",ascending=False).drop("Unknown")
cc.head(10)
```

Out[44]:

City	Casualty
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

Killed in each City

In [45]:
```
ck=df[["City","Killed"]].groupby("City").sum().sort_values(by="Killed",ascending=False).drop("Unknown")
ck.head(10)
```

Out[45]:

City	Killed
Baghdad	21151.0
Mosul	7140.0
Mogadishu	3913.0
Karachi	3688.0
New York City	2838.0

City	Killed
Tikrit	2679.0
Kabul	2493.0
Ramadi	2313.0
Maiduguri	2235.0
Aleppo	2125.0

Wounded in each City

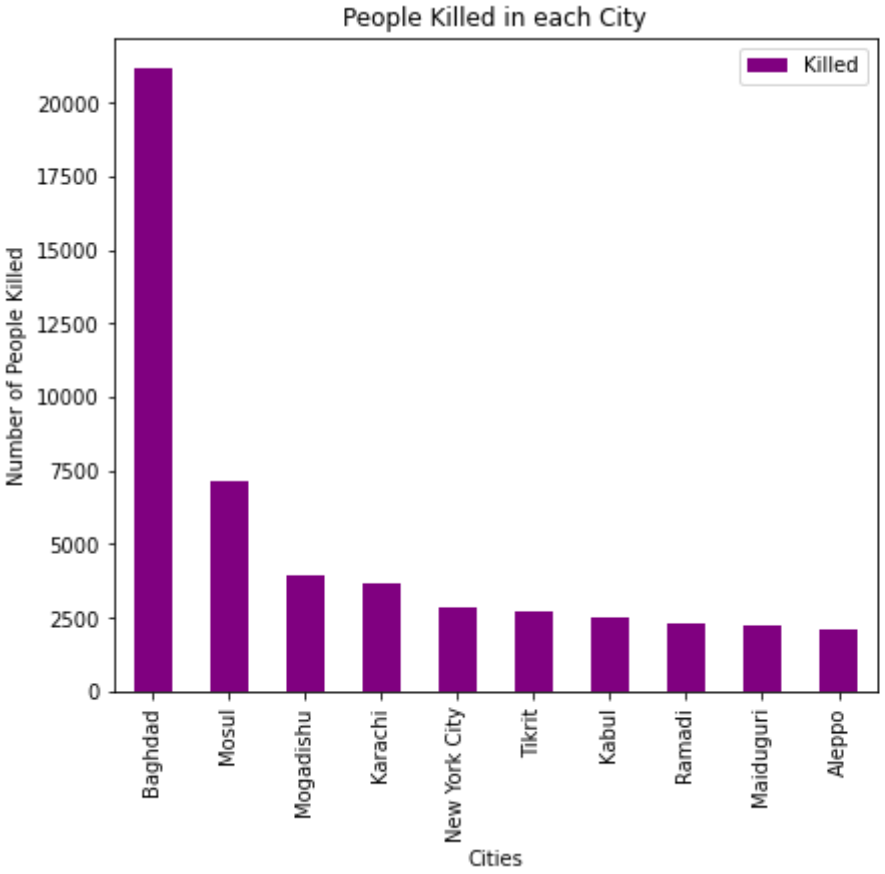
In [46]:
```
cw=df[["City","Wounded"]].groupby("City").sum().sort_values(by="Wounded",ascending=False).drop("Unknown")
cw.head(10)
```

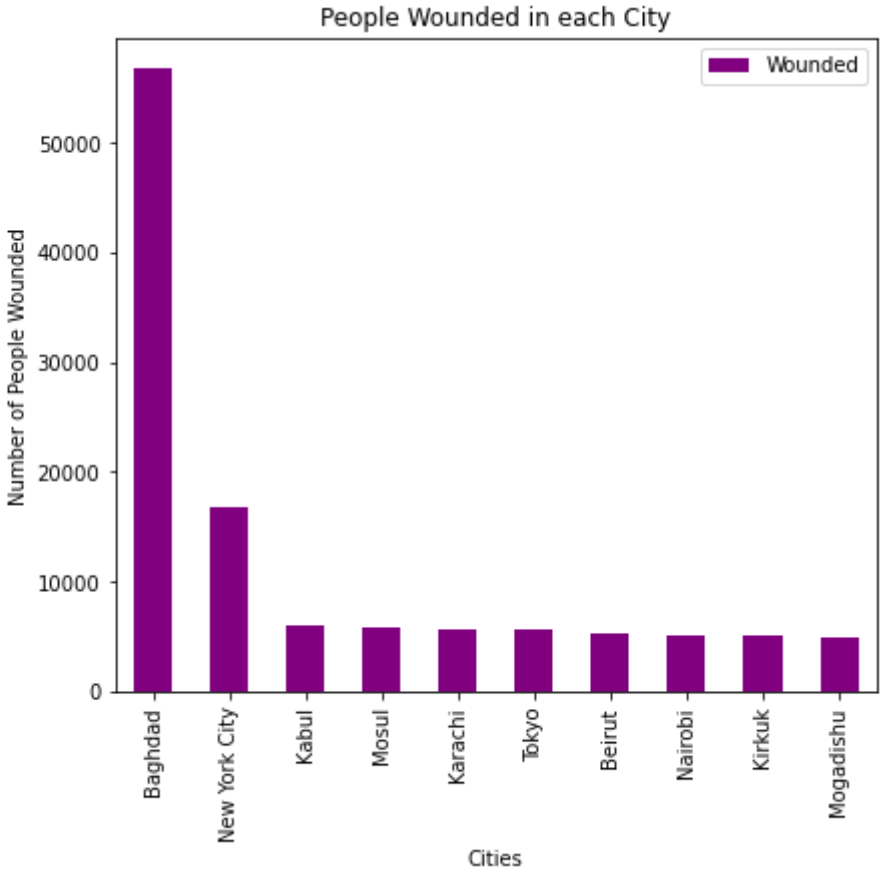
Out[46]:

City	Wounded
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 [47]:
```
fig=plt.figure()
```

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

#Killed
ck[:10].plot(kind="bar",color="purple",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="purple",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()
```





5. Terrorist Group wise Attacks - Top 10

Number of Attacks by each Group

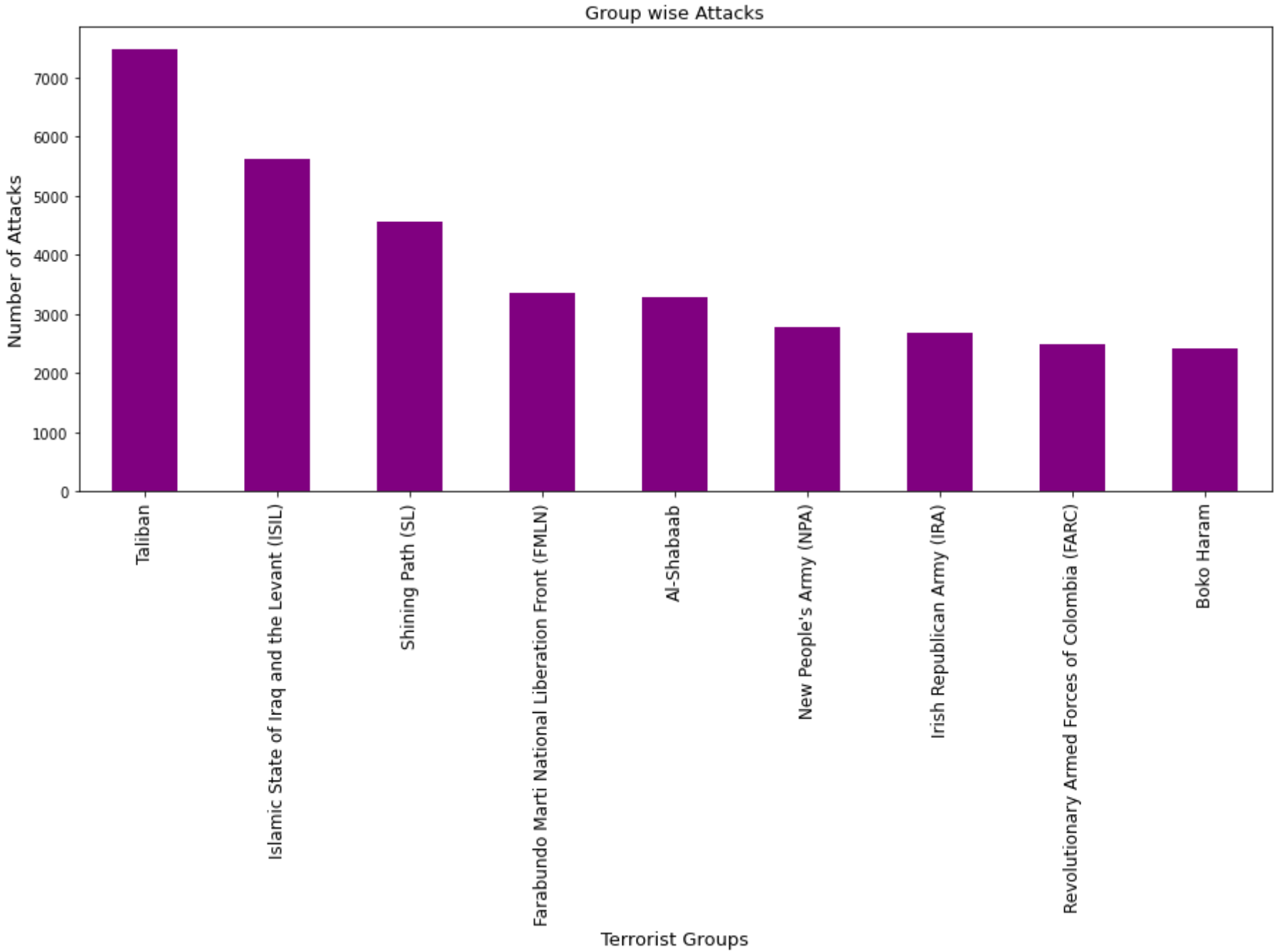
In [48]:
```
grp=df["Group Name"].value_counts()[1:10]
grp
```

Out[48]:
```
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: Group Name, dtype: int64
```

In [49]:

```
grp.plot(kind="bar",color="purple",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()
```



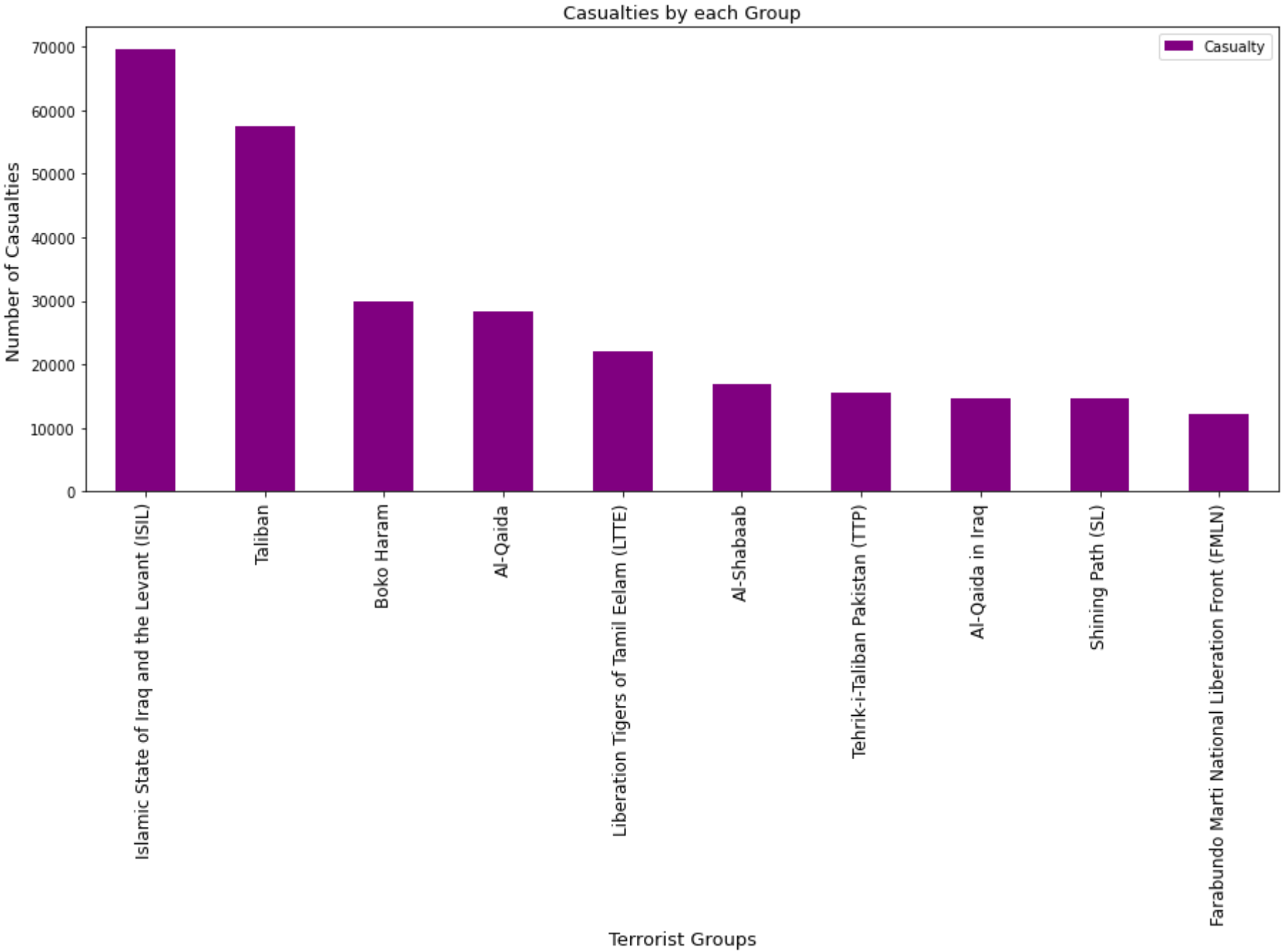
Total Casualties(Killed + Wounded) by each Group

In [50]:
```
gc=df[["Group Name","Casualty"]].groupby("Group Name").sum().sort_values(by="Casualty",ascending=False).drop("Unknown")
gc.head(10)
```

Out[50]:

Group Name	Casualty
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 [51]:
```
gc.head(10).plot(kind="bar",color="purple",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()
```



Killed by each Group

In [52]:
```
gk=df[["Group Name","Killed"]].groupby("Group Name").sum().sort_values(by="Killed",ascending=False).drop("Unknown")
gk.head(10)
```

Out[52]:

Group Name	Killed
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

Wounded by each Group

In [53]:
```
gw=df[["Group Name","Wounded"]].groupby("Group Name").sum().sort_values(by="Wounded",ascending=False).drop("Unknown")
gw.head(10)
```

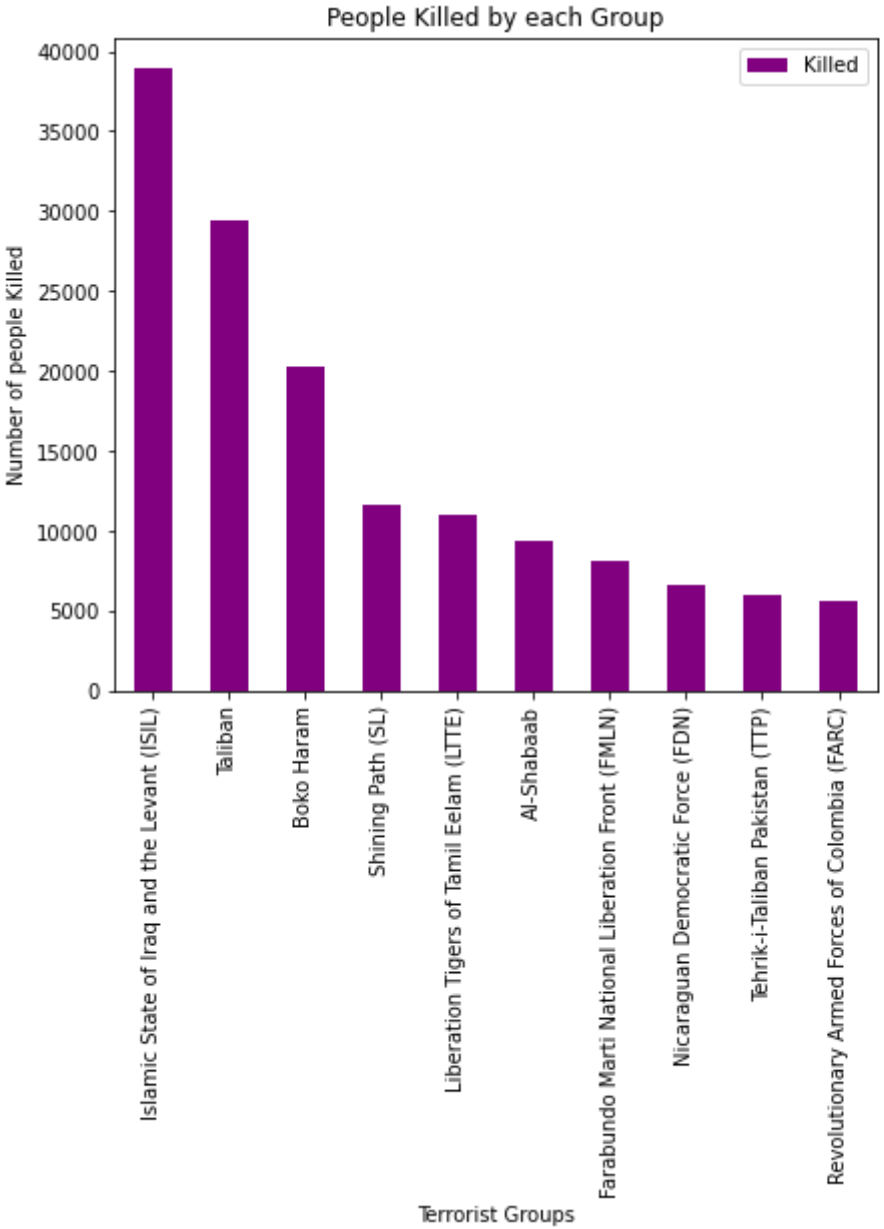
Out[53]:

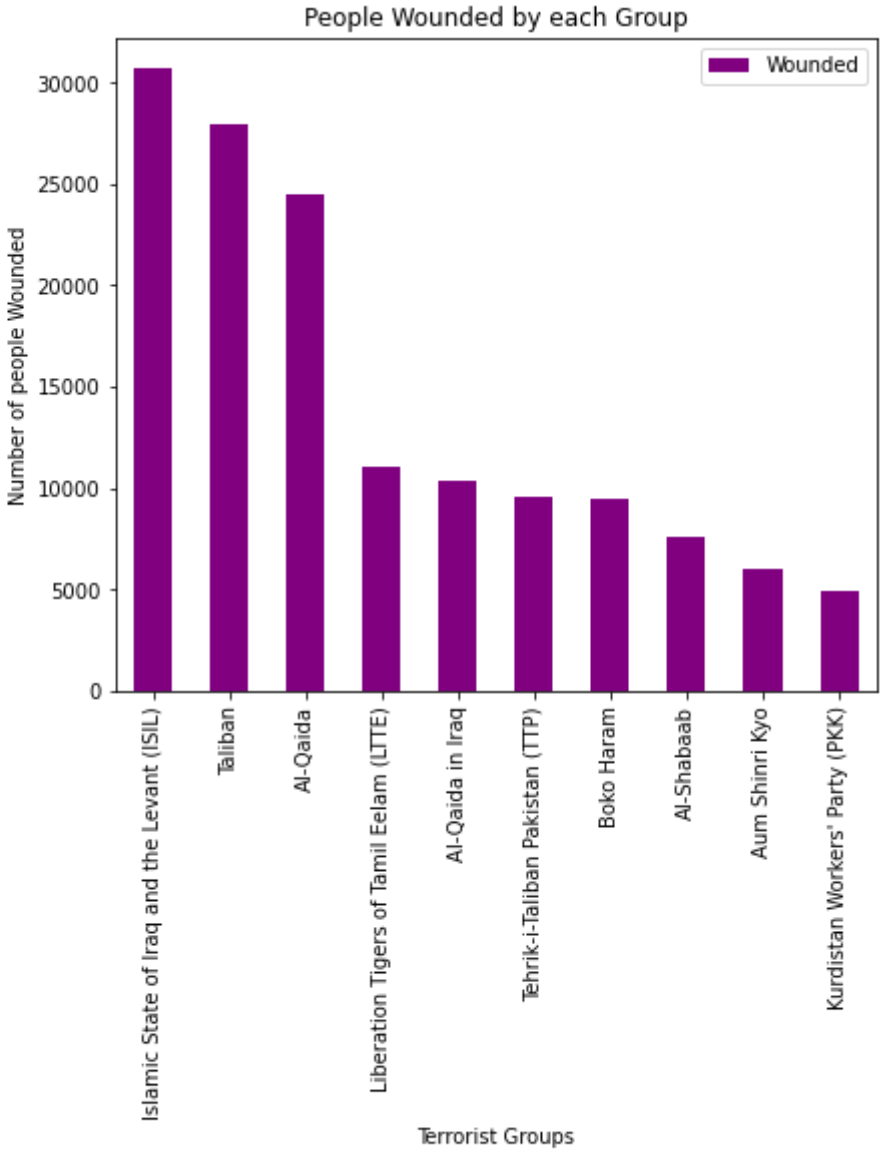
Group Name	Wounded
Islamic State of Iraq and the Levant (ISIL)	30672.0
Taliban	27932.0
Al-Qaida	24512.0
Liberation Tigers of Tamil Eelam (LTTE)	11031.0

Group Name	Wounded
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 [54]:

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

#Killed
gk[:10].plot(kind="bar",color="purple",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="purple",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()
```





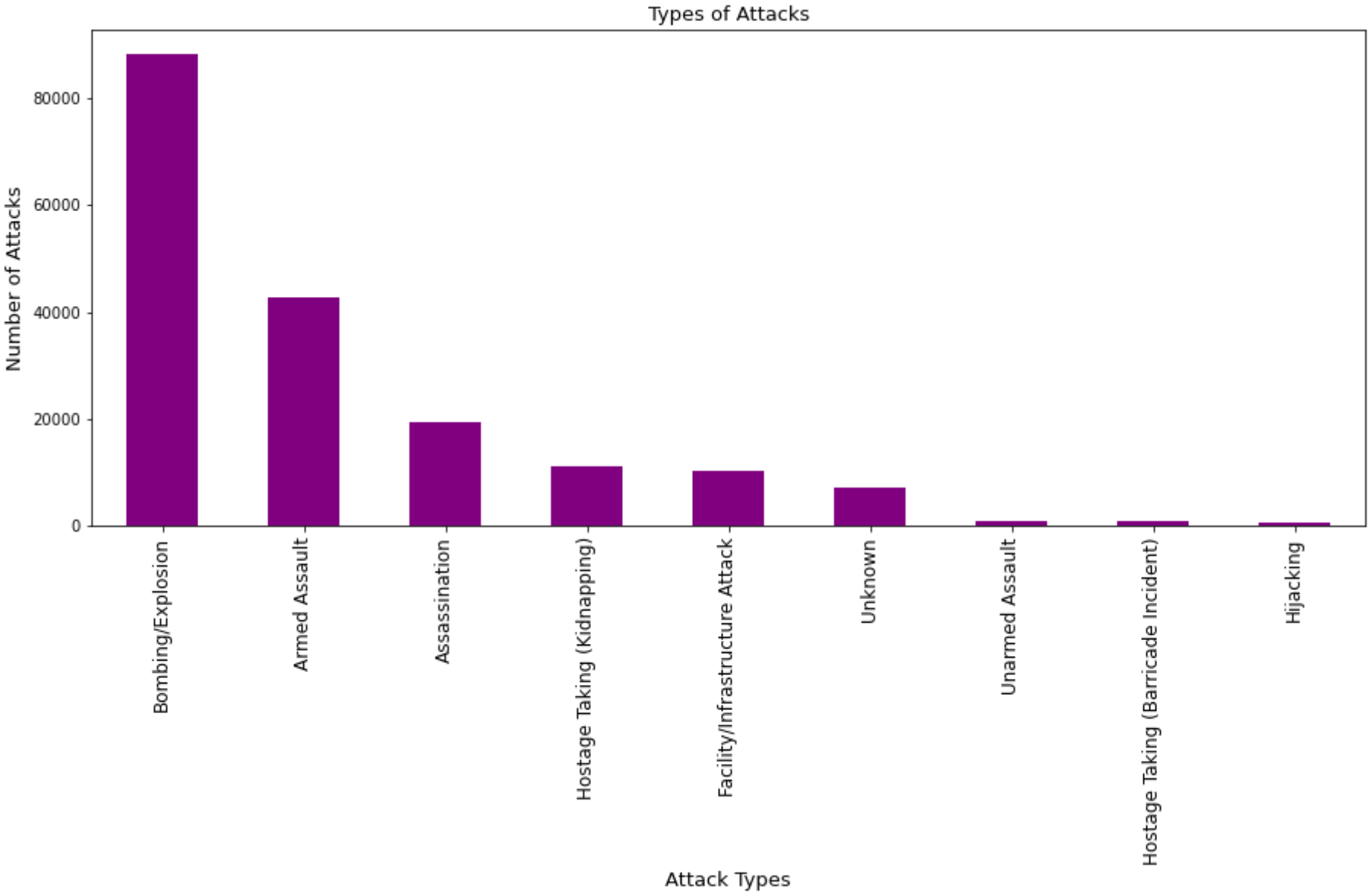
6. Attack Type wise Attacks

Number of Attacks by each Attack Type

In [55]:
```
at=df["Attack Type"].value_counts()
at
```

Out[55]:
```
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: Attack Type, dtype: int64
```

In [56]:
```
at.plot(kind="bar",color="purple",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()
```



Total Casualties (Killed + Wounded) by each Attack Type

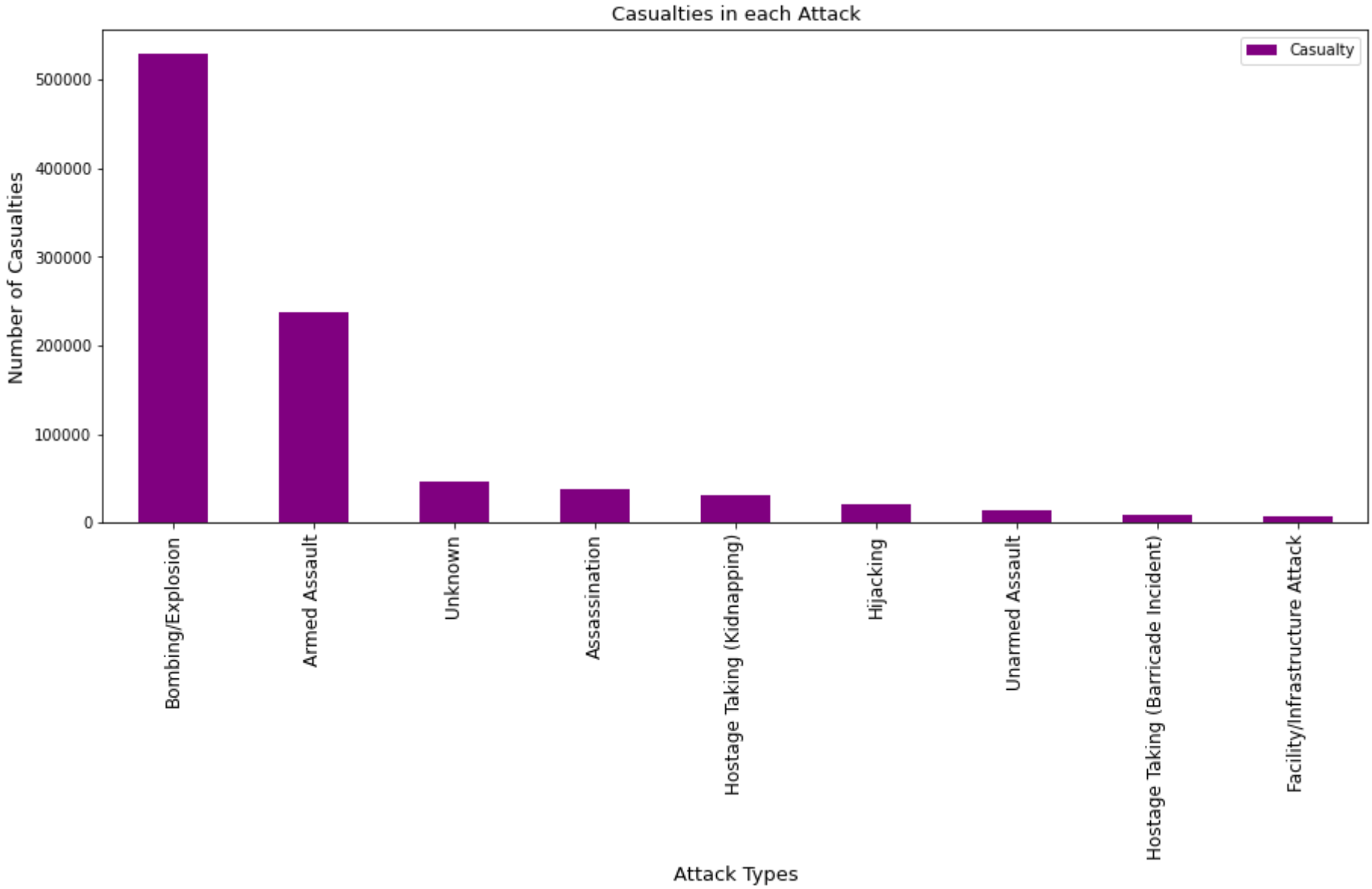
In [57]:
```
ac=df[["Attack Type","Casualty"]].groupby("Attack Type").sum().sort_values(by="Casualty",ascending=False)
ac
```

Out[57]:

Attack Type	Casualty
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 [58]:

```
ac.plot(kind="bar",color="purple",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()
```



Killed by each Attack Type

In [59]:
```
ak=df[["Attack Type","Killed"]].groupby("Attack Type").sum().sort_values(by="Killed",ascending=False)
ak
```

Out[59]:

Attack Type	Killed
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

Wounded by each Attack Type

In [60]:
```
aw=df[["Attack Type","Wounded"]].groupby("Attack Type").sum().sort_values(by="Wounded",ascending=False)
aw
```

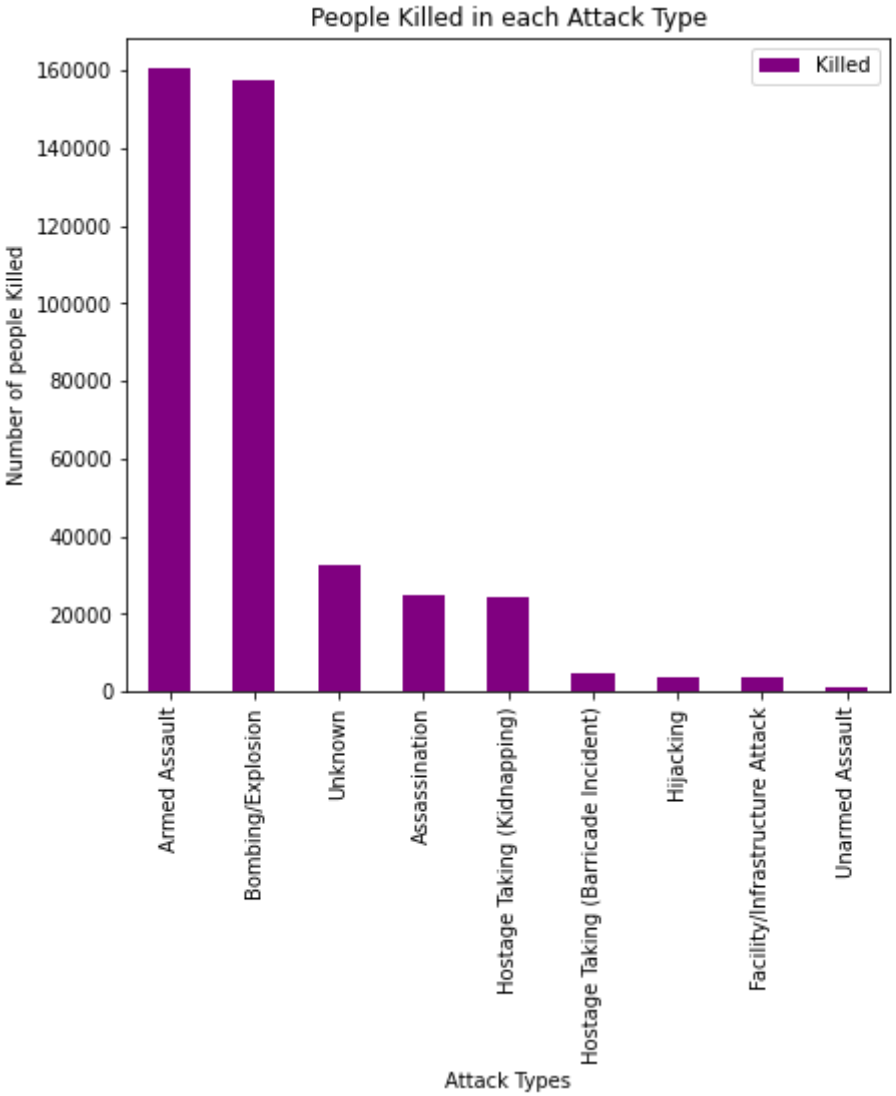
Out[60]:

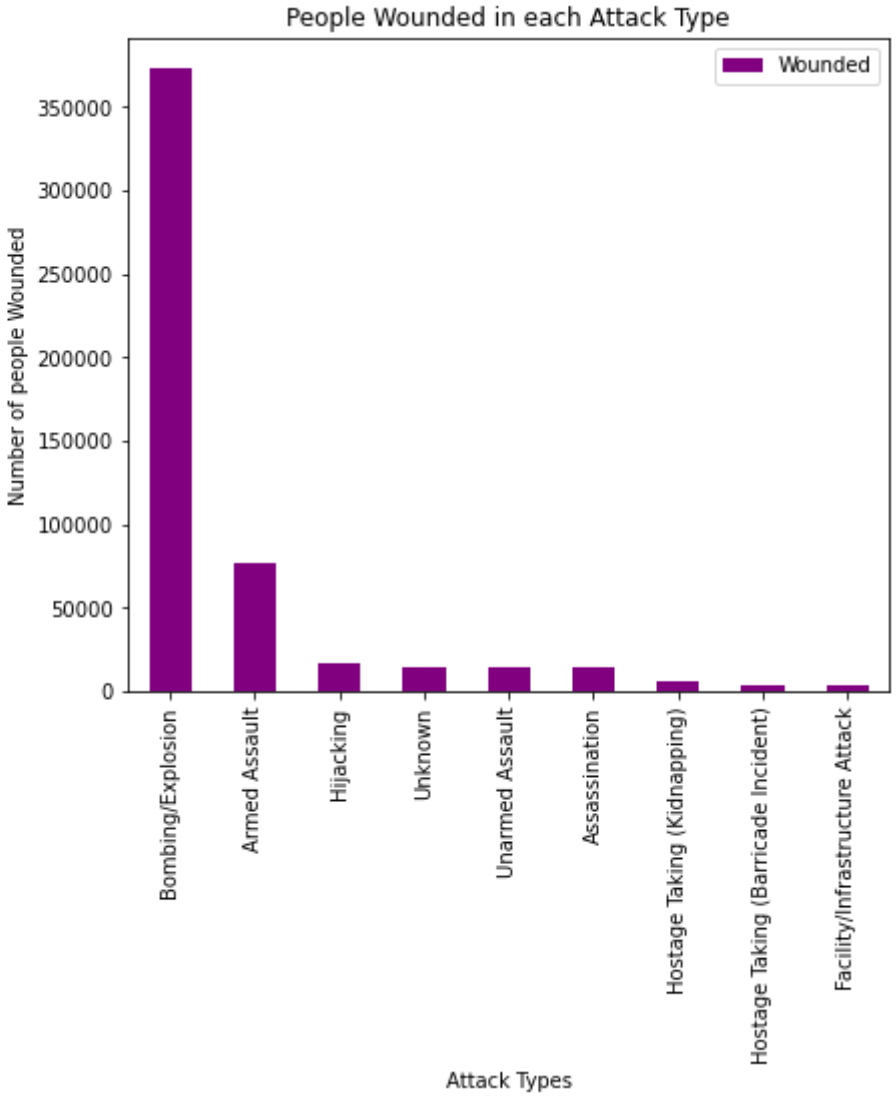
Attack Type	Wounded
Bombing/Explosion	372686.0
Armed Assault	77366.0
Hijacking	17001.0
Unknown	14725.0
Unarmed Assault	14027.0
Assassination	13887.0
Hostage Taking (Kidnapping)	6446.0
Hostage Taking (Barricade Incident)	3966.0

	Wounded
Attack Type	
Facility/Infrastructure Attack	3765.0

In [61]:

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

#Killed
ak.plot(kind="bar",color="purple",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="purple",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()
```





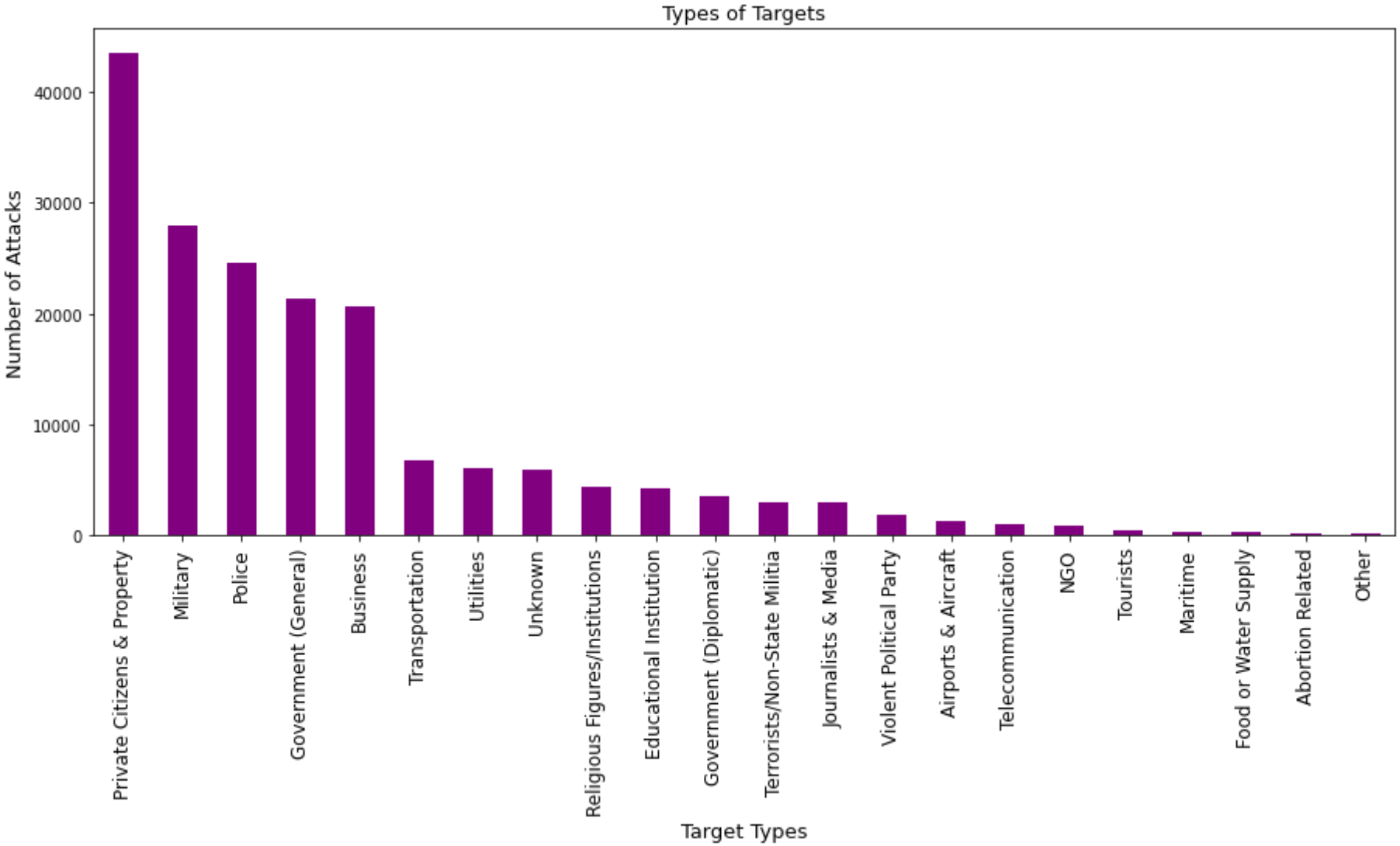
7.Target Type wise Attacks

Number of Attacks over each Target Type

In [62]:
```
ta=df["Target Type"].value_counts()
ta
```

Out[62]:
```
Private Citizens & Property       43511
Military                          27984
Police                            24506
Government (General)              21283
Business                          20669
Transportation                     6799
Utilities                          6023
Unknown                            5898
Religious Figures/Institutions     4440
Educational Institution            4322
Government (Diplomatic)            3573
Terrorists/Non-State Militia       3039
Journalists & Media                2948
Violent Political Party            1866
Airports & Aircraft                1343
Telecommunication                  1009
NGO                                 970
Tourists                            440
Maritime                            351
Food or Water Supply                317
Abortion Related                    263
Other                               137
Name: Target Type, dtype: int64
```

In [63]:
```
ta.plot(kind="bar",color="purple",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 [64]:
```
tc=df[["Target Type","Casualty"]].groupby("Target Type").sum().sort_values(by="Casualty",ascending=False)
tc
```

Out[64]:

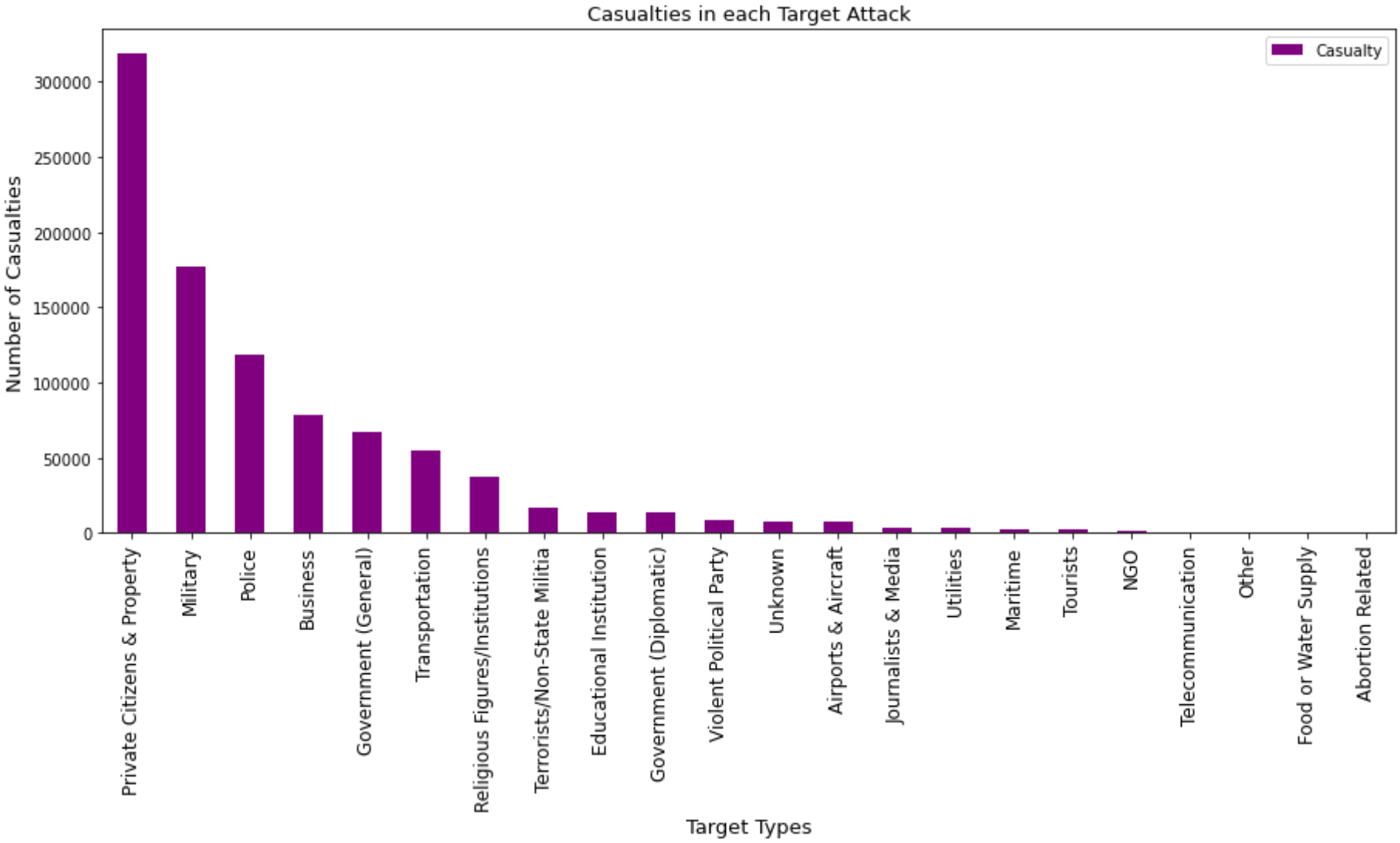
Target Type	Casualty
Private Citizens & Property	319176.0

Target Type	Casualty
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 [65]:

```
tc.plot(kind="bar",color="purple",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 [66]:

```
tk=df[["Target Type","Killed"]].groupby("Target Type").sum().sort_values(by="Killed",ascending=False)
tk
```

Out[66]:

Target Type	Killed
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 [67]:
```
tw=df[["Target Type","Wounded"]].groupby("Target Type").sum().sort_values(by="Wounded",ascending=False)
tw
```

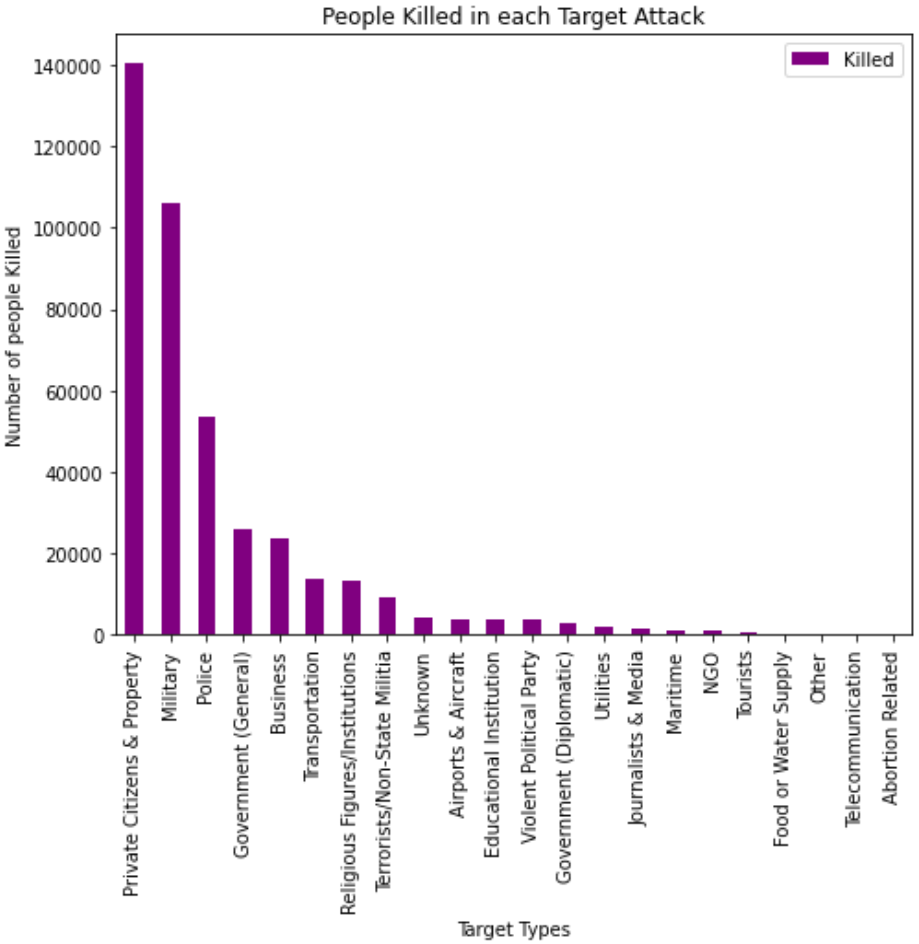
Out[67]:

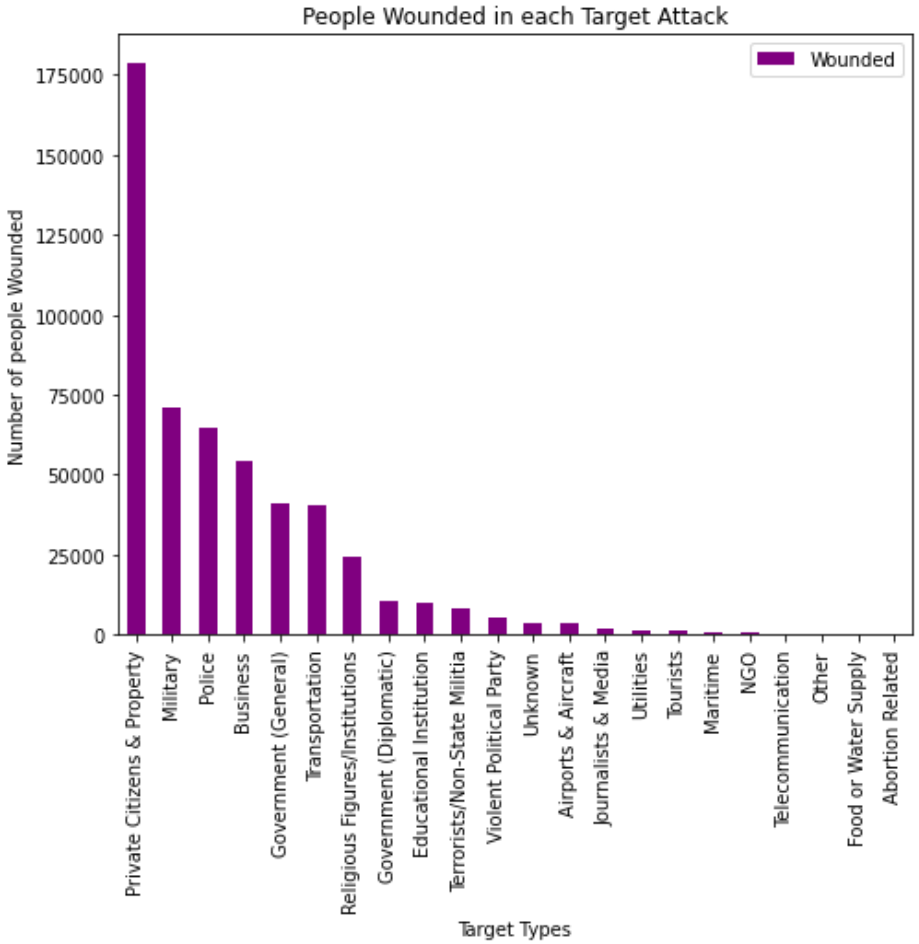
Target Type	Wounded
Private Citizens & Property	178672.0
Military	71038.0
Police	64703.0
Business	54531.0
Government (General)	41184.0
Transportation	40679.0
Religious Figures/Institutions	24477.0
Government (Diplomatic)	10359.0
Educational Institution	10227.0
Terrorists/Non-State Militia	8223.0
Violent 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

	Wounded
Target Type	
Abortion Related	46.0

In [68]:

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

#Killed
tk.plot(kind="bar",color="purple",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="purple",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()
```





8. Group + Country wise - Top10

Sorting by number of Attacks

In [69]:
```
gca=df[["Group Name","Country"]].value_counts().drop("Unknown")
gca.head(10)
```

```
C:\ProgramData\Anaconda3\lib\site-packages\pandas\core\generic.py:4153: PerformanceWarning: dropping on a non-lexsorted multi-inde
x without a level parameter may impact performance.
  obj = obj._drop_axis(labels, axis, level=level, errors=errors)
Group Name                                          Country
```

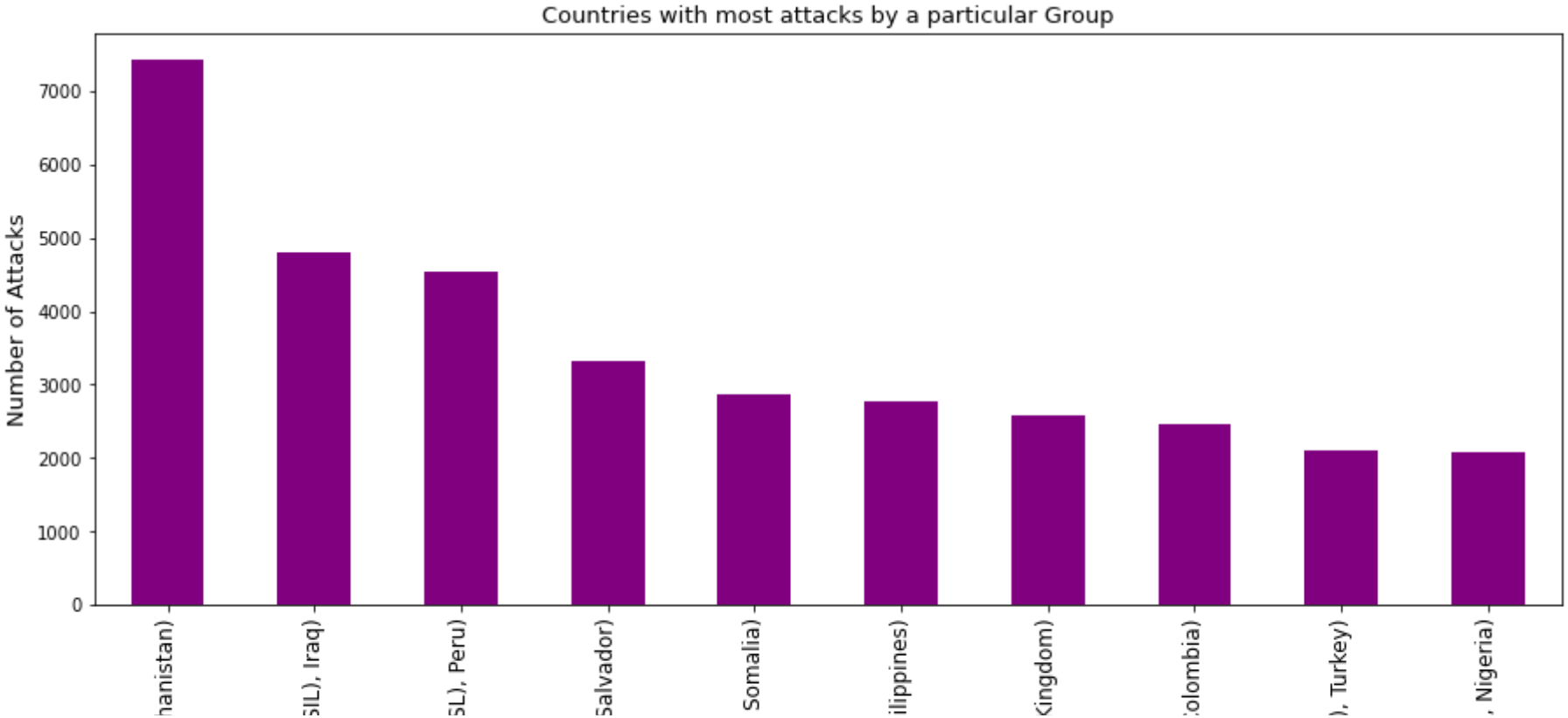
Out[69]:

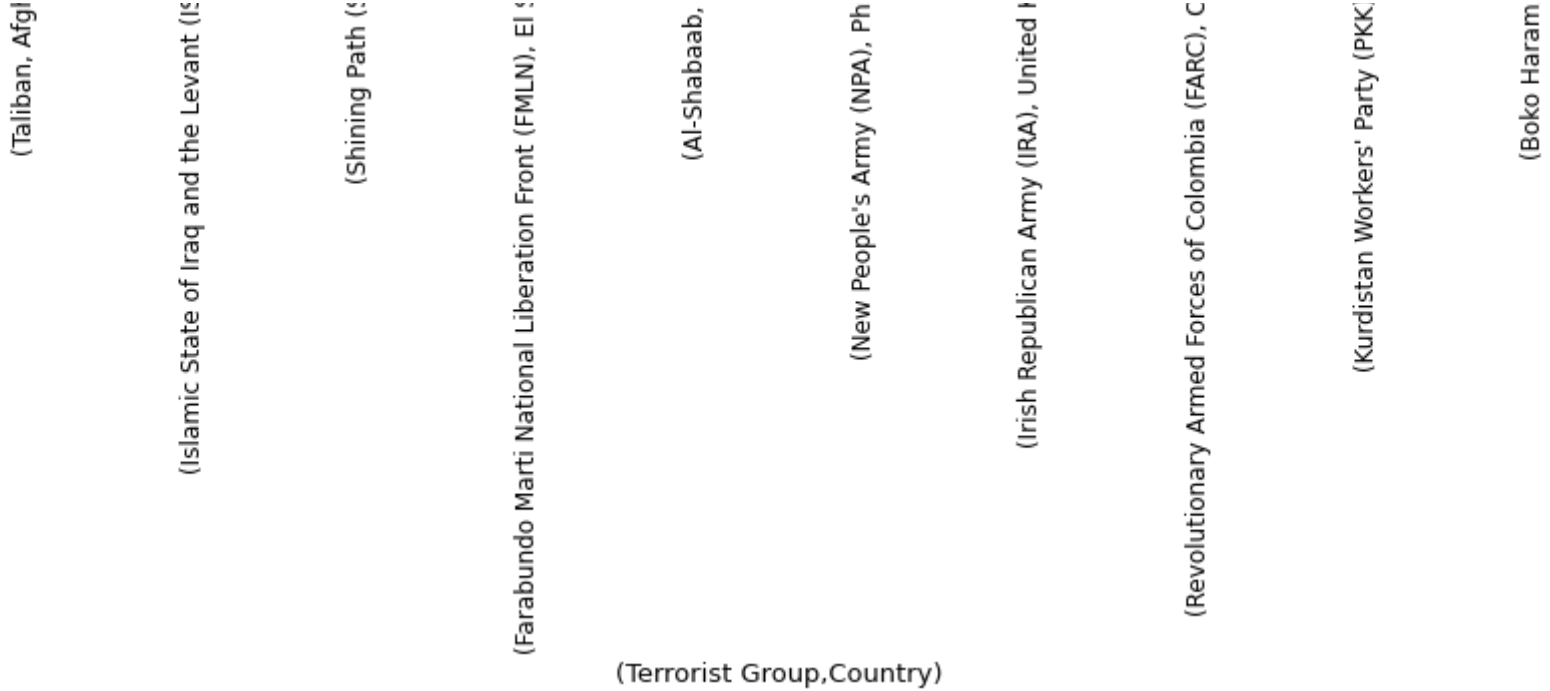
Taliban	Afghanistan	7423
Islamic State of Iraq and the Levant (ISIL)	Iraq	4797
Shining Path (SL)	Peru	4541
Farabundo Marti National Liberation Front (FMLN)	El Salvador	3330
Al-Shabaab	Somalia	2867
New People's Army (NPA)	Philippines	2770
Irish Republican Army (IRA)	United Kingdom	2575
Revolutionary Armed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

dtype: int64

In [70]:

```
gca.head(10).plot(kind="bar",color="purple",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()
```





Sorting by Number of Casualties

In [71]:
```
gcc=df[["Group Name","Country","Casualty"]].groupby(["Group Name","Country"],axis=0).sum().sort_values(by="Casualty",ascending=Fal
gcc
```

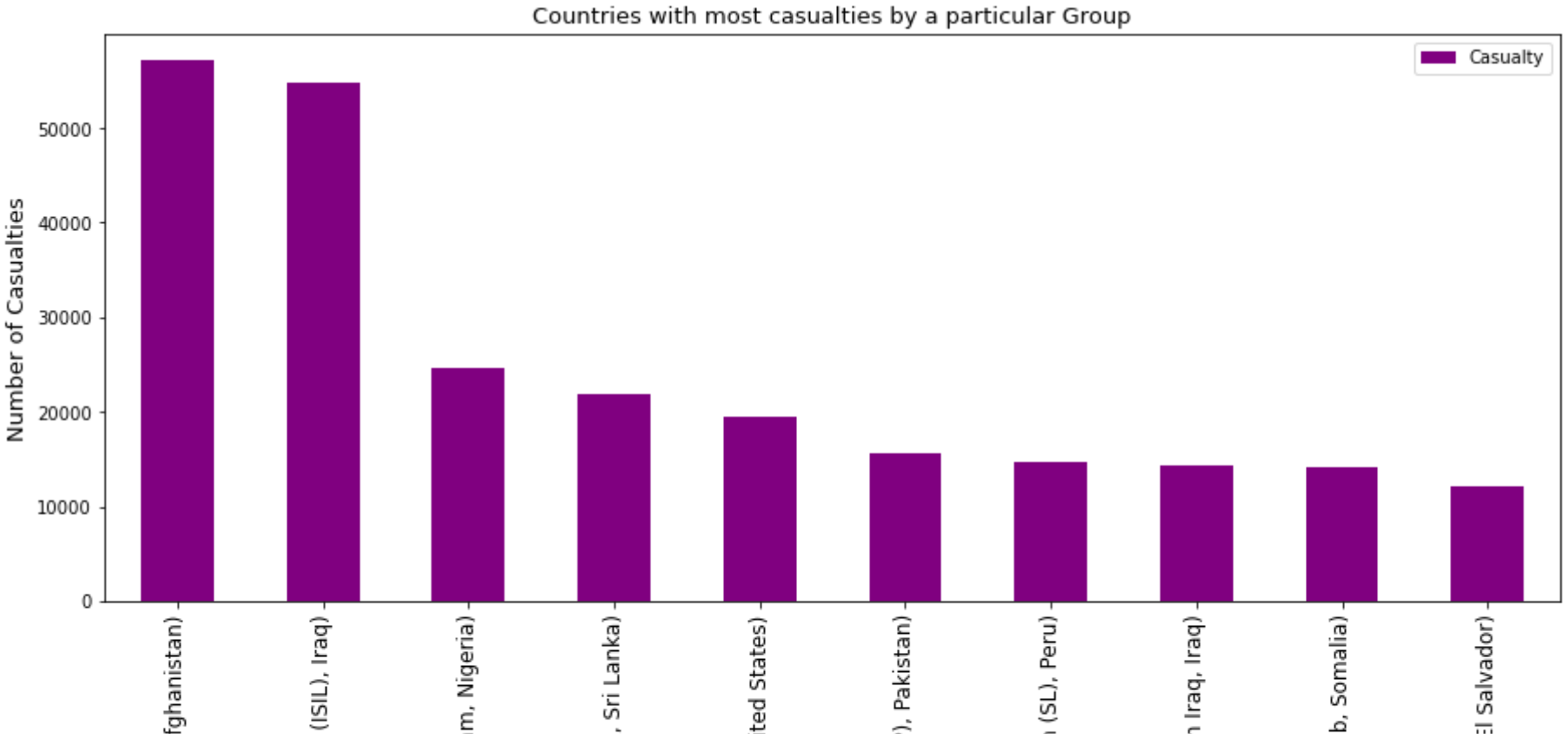
Out[71]:

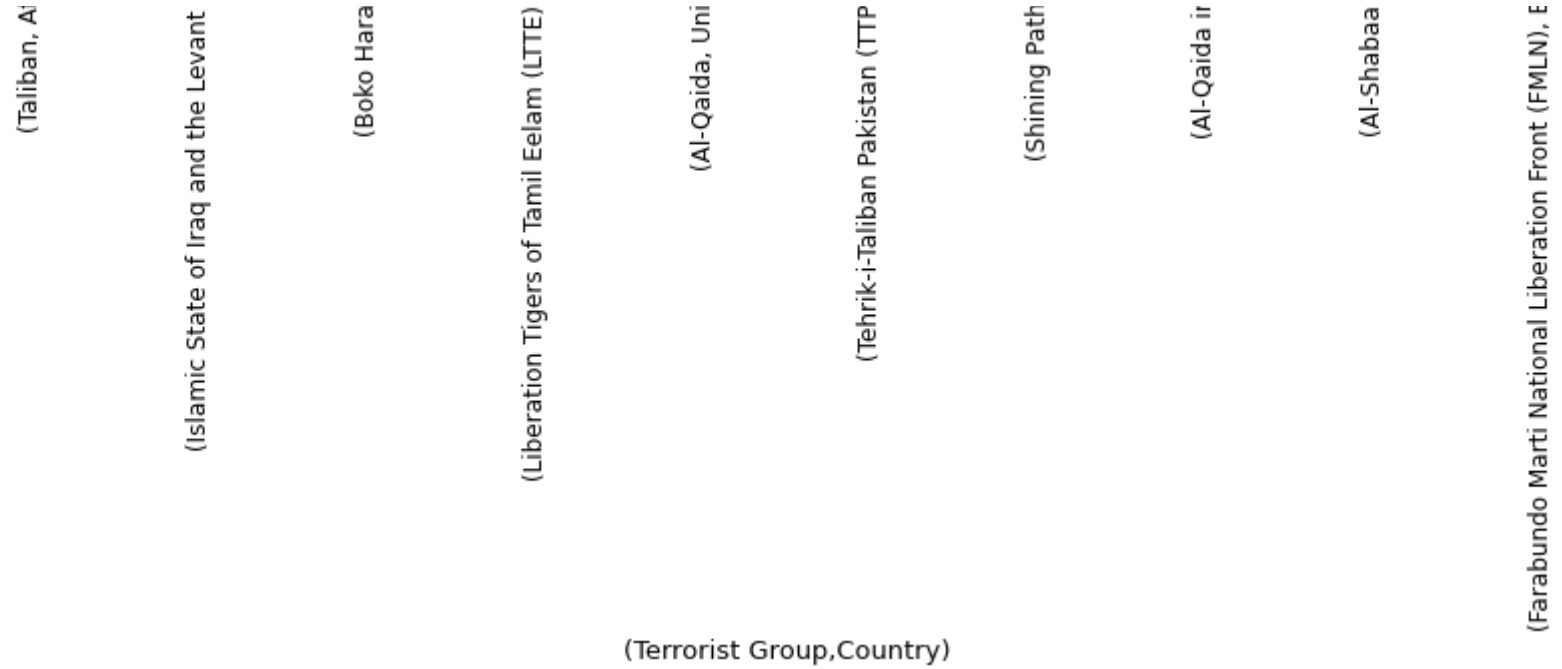
		Casualty
Group Name	**Country**	
Taliban	**Afghanistan**	57140.0
Islamic State of Iraq and the Levant (ISIL)	**Iraq**	54755.0
Boko Haram	**Nigeria**	24588.0
Liberation Tigers of Tamil Eelam (LTTE)	**Sri Lanka**	21919.0
Al-Qaida	**United States**	19494.0
Tehrik-i-Taliban Pakistan (TTP)	**Pakistan**	15532.0
Shining Path (SL)	**Peru**	14625.0

		Casualty
Group Name	**Country**	
Al-Qaida in Iraq	**Iraq**	14348.0
Al-Shabaab	**Somalia**	14201.0
Farabundo Marti National Liberation Front (FMLN)	**El Salvador**	12068.0

In [72]:

```
gcc.plot(kind="bar",color="purple",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()
```





Sorting by Number of People Killed

In [73]:
```
gck=df[["Group Name","Country","Killed"]].groupby(["Group Name","Country"],axis=0).sum().sort_values(by="Killed",ascending=False).
gck
```

```
C:\ProgramData\Anaconda3\lib\site-packages\pandas\core\generic.py:4153: PerformanceWarning: dropping on a non-lexsorted multi-inde
x without a level parameter may impact performance.
  obj = obj._drop_axis(labels, axis, level=level, errors=errors)
```

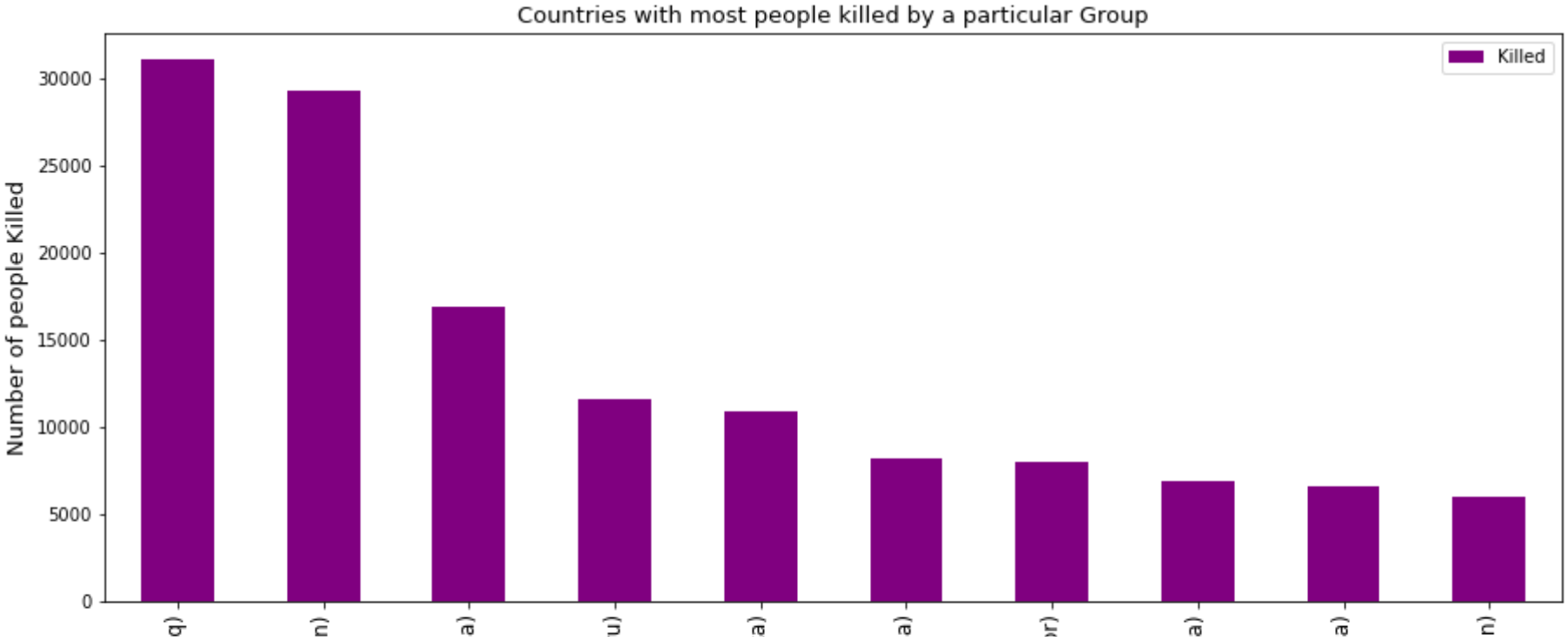
Out[73]:

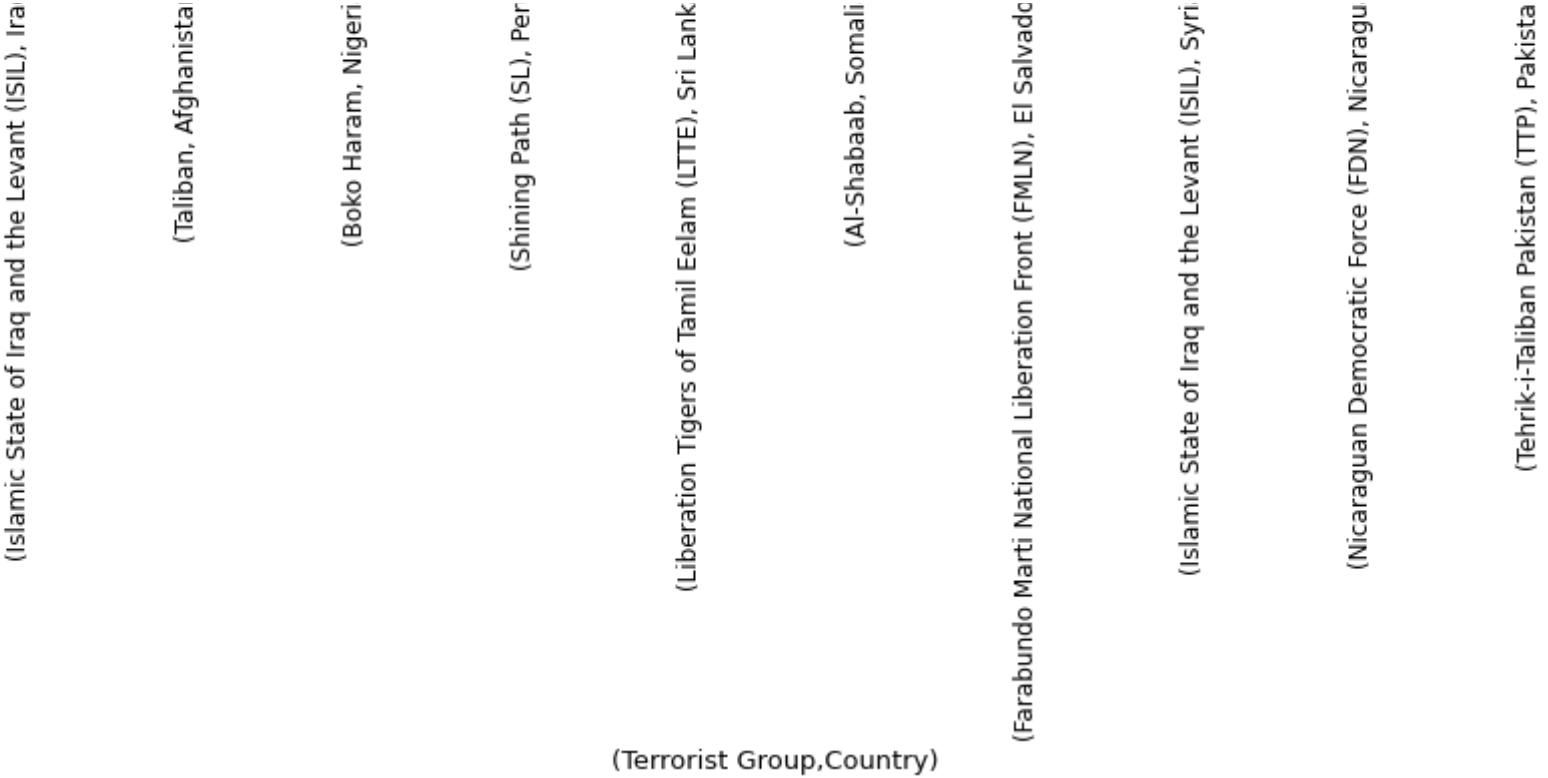
		Killed
Group Name	**Country**	
Islamic State of Iraq and the Levant (ISIL)	**Iraq**	31058.0
Taliban	**Afghanistan**	29269.0
Boko Haram	**Nigeria**	16917.0
Shining Path (SL)	**Peru**	11595.0
Liberation Tigers of Tamil Eelam (LTTE)	**Sri Lanka**	10928.0

		Killed
Group Name	**Country**	
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 [74]:

```
gck.plot(kind="bar",color="purple",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()
```





Sorting by Number of People Wounded

In [75]:
```
gcw=df[["Group Name","Country","Wounded"]].groupby(["Group Name","Country"],axis=0).sum().sort_values(by="Wounded",ascending=False
gcw
```

```
C:\ProgramData\Anaconda3\lib\site-packages\pandas\core\generic.py:4153: PerformanceWarning: dropping on a non-lexsorted multi-inde
x without a level parameter may impact performance.
  obj = obj._drop_axis(labels, axis, level=level, errors=errors)
```

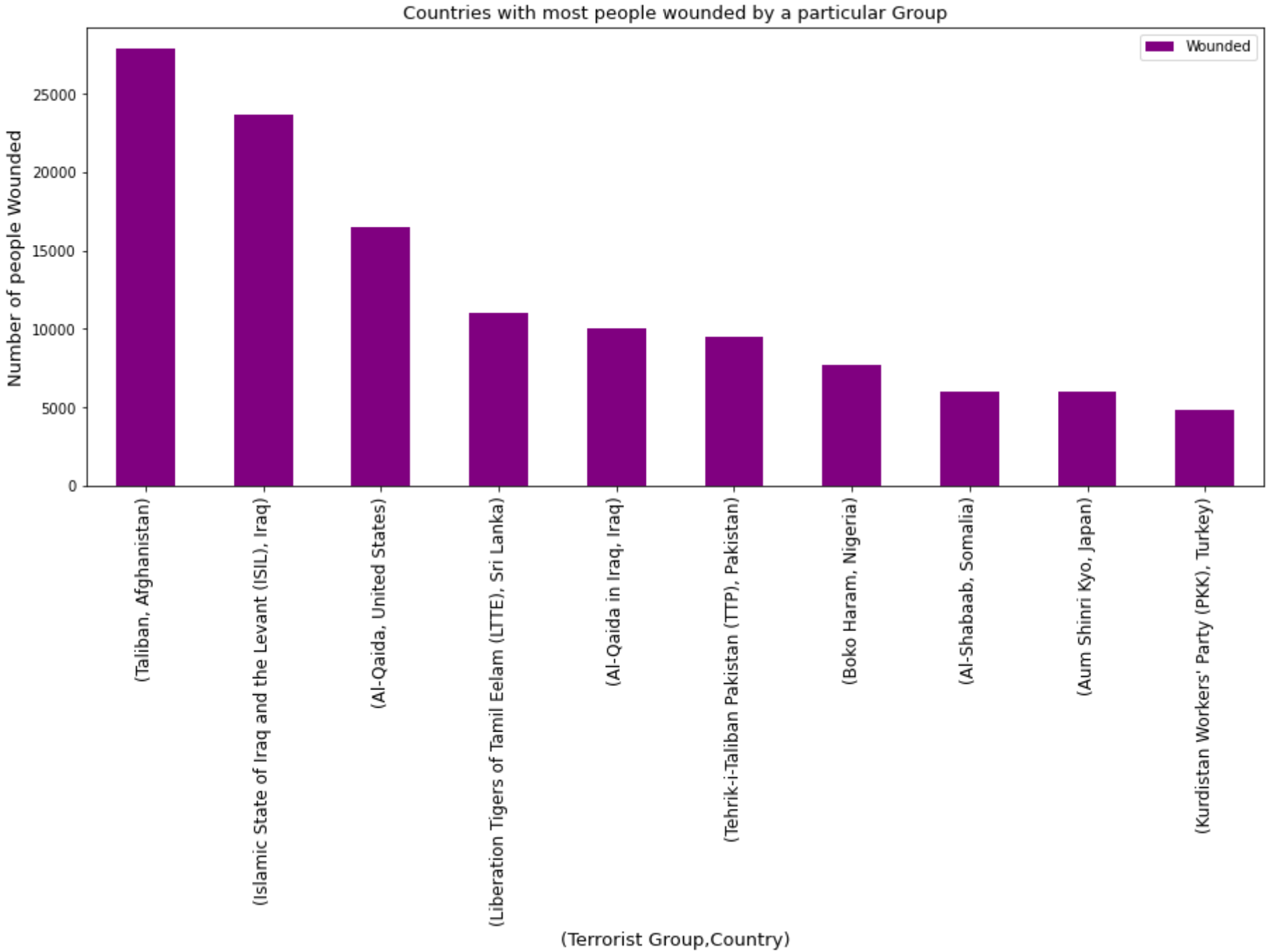
Out[75]:

		Wounded
Group Name	**Country**	
Taliban	**Afghanistan**	27871.0
Islamic State of Iraq and the Levant (ISIL)	**Iraq**	23697.0
Al-Qaida	**United States**	16493.0

		Wounded
Group Name	**Country**	
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 [76]:

```
gcw.plot(kind="bar",color="purple",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()
```


Countries with most people wounded by a particular Group
Wounded
Number of people Wounded
0
5000
10000
15000
20000
25000
(Taliban, Afghanistan)
(Islamic State of Iraq and the Levant (ISIL), Iraq)
(Al-Qaida, United States)
(Liberation Tigers of Tamil Eelam (LTTE), Sri Lanka)
(Al-Qaida in Iraq, Iraq)
(Tehrik-i-Taliban Pakistan (TTP), Pakistan)
(Boko Haram, Nigeria)
(Al-Shabaab, Somalia)
(Aum Shinri Kyo, Japan)
(Kurdistan Workers' Party (PKK), Turkey)
(Terrorist Group,Country)

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

Total Casualties (Killed + Wounded) due to Terrorist Attacks

In [77]:
```
casualty=df.loc[:,"Casualty"].sum()
print("Total number of Casualties due to Terrorist Attacks from 1970 to 2017 across the world :\n",casualty)
```

```
Total number of Casualties due to Terrorist Attacks from 1970 to 2017 across the world :
 935737.0
```

Killed due to Terrorist Attacks

In [78]:
```
kill=df.loc[:,"Killed"].sum()
print("Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :\n",kill)
```

```
Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :
 411868.0
```

Wounded due to Terrorist Attacks

In [79]:
```
wound=df.loc[:,"Wounded"].sum()
print("Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :\n",wound)
```

```
Total number of people killed due to Terrorist Attacks from 1970 to 2017 across the world :
 523869.0
```

In [ ]:
```
```