Exploratory_Data_Analysis_Terrorism

In this task, we will be performing exploratory data analysis on the dataset "GlobalTerrorism" and try to find out the hot zone of terrorism. Also, we will derive the security issues and various insights.

In [1]:
```
# Importing all the libraries needed in this notebook
import math
import warnings
import numpy as np
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import seaborn as sns
import plotly.offline as py
import plotly.graph_objs as go
import matplotlib.pyplot as plt
warnings.filterwarnings('ignore')
```

Loading and Reading The Data Set

In [2]:
```
global_terror = pd.read_csv('globalterrorismdb_0718dist.csv',encoding='ISO-8859-1')
```

In [3]:
```
global_terror.head() # first five values of the dataset
```

Out[3]:

approxdate	extended	resolution	country	country_txt	region	...	addnotes	scite1	scite2	scite3	dbsource	INT_LOG	I
NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN	NaN	PGIS	0	
NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN	NaN	PGIS	0	
NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN	NaN	PGIS	-9	
NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN	NaN	PGIS	-9	
NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN	NaN	PGIS	-9	

In [4]:
```
global_terror.columns
```

Out[4]:
```
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 [5]:
```
global_terror.rename(columns={'iyear':'Year','imonth':'Month','iday':'Day','country_txt':'Country
                      'region_txt':'Region','attacktype1_txt':'AttackType','target1':'Target','nk
                      'nwound':'Wounded','summary':'Summary','gname':'Group','targtype1_txt':'Tar
                      'weaptype1_txt':'Weapon_type','motive':'Motive'},inplace=True)
```

Dropping out irrelevant columns

In [6]:
```
# Important data for further processing
global_terror=global_terror[['Year','Month','Day','Country','state','Region','city','latitude','lo
              'Wounded','Target','Summary','Group','Target_type','Weapon_type','Motive']]
```

In [7]:
```
global_terror.head()
```

Out[7]:

	Year	Month	Day	Country	state	Region	city	latitude	longitude	AttackType	Killed	Woun
0	1970	7	2	Dominican Republic	NaN	Central America & Caribbean	Santo Domingo	18.456792	-69.951164	Assassination	1.0	
1	1970	0	0	Mexico	Federal	North America	Mexico city	19.371887	-99.086624	Hostage Taking (Kidnapping)	0.0	
2	1970	1	0	Philippines	Tarlac	Southeast Asia	Unknown	15.478598	120.599741	Assassination	1.0	
3	1970	1	0	Greece	Attica	Western Europe	Athens	37.997490	23.762728	Bombing/Explosion	NaN	N
4	1970	1	0	Japan	Fukouka	East Asia	Fukouka	33.580412	130.396361	Facility/Infrastructure Attack	NaN	N

In [8]:
```
# Checking for the null values
global_terror.isnull().sum()
```

Out[8]:
```
Year               0
Month              0
Day                0
Country            0
state            421
Region             0
city             434
latitude        4556
longitude       4557
AttackType         0
Killed         10313
Wounded        16311
Target           636
Summary        66129
Group              0
Target_type        0
Weapon_type        0
Motive        131130
dtype: int64
```

Checking the dataset's information

In [9]:
```
global_terror.info() # Returns the concise summary
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 181691 entries, 0 to 181690
Data columns (total 18 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   state        181270 non-null  object 
 5   Region       181691 non-null  object 
 6   city         181257 non-null  object 
 7   latitude     177135 non-null  float64
 8   longitude    177134 non-null  float64
 9   AttackType   181691 non-null  object 
 10  Killed       171378 non-null  float64
 11  Wounded      165380 non-null  float64
 12  Target       181055 non-null  object 
 13  Summary      115562 non-null  object 
 14  Group        181691 non-null  object 
 15  Target_type  181691 non-null  object 
 16  Weapon_type  181691 non-null  object 
 17  Motive       50561 non-null   object 
dtypes: float64(4), int64(3), object(11)
memory usage: 25.0+ MB
```

Data Visualization

Destructive Features

In [10]:
```
print("Country with the most attacks:",global_terror['Country'].value_counts().idxmax())
print("City with the most attacks:",global_terror['city'].value_counts().index[1]) #as first entr
print("Region with the most attacks:",global_terror['Region'].value_counts().idxmax())
print("Year with the most attacks:",global_terror['Year'].value_counts().idxmax())
print("Month with the most attacks:",global_terror['Month'].value_counts().idxmax())
print("Group with the most attacks:",global_terror['Group'].value_counts().index[1])
print("Most Attack Types:",global_terror['AttackType'].value_counts().idxmax())
```

```
Country with the most attacks: Iraq
City with the most attacks: Baghdad
Region with the most attacks: Middle East & North Africa
Year with the most attacks: 2014
Month with the most attacks: 5
Group with the most attacks: Taliban
Most Attack Types: Bombing/Explosion
```

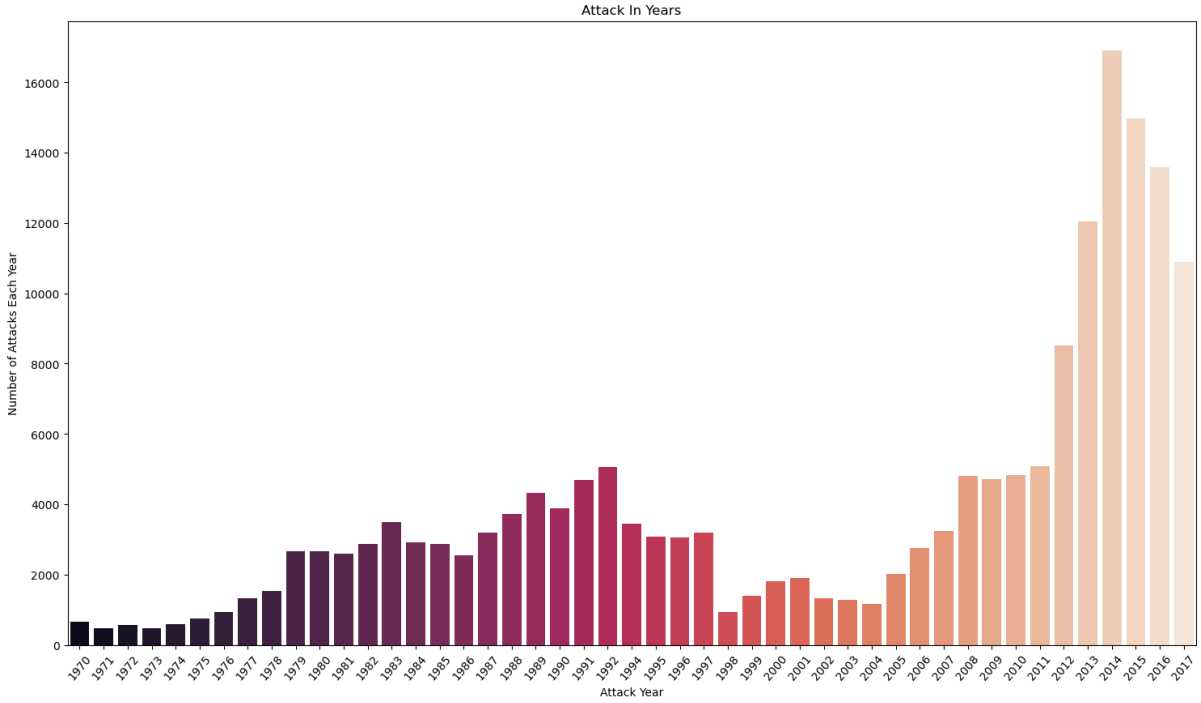
In [13]:
```
from wordcloud import WordCloud
from scipy import signal
cities = global_terror.state.dropna(False)
plt.subplots(figsize=(20,10))
wordcloud = WordCloud(background_color = 'black',
                      width = 500,
                      height = 400).generate(' '.join(cities))
plt.axis('off')
plt.imshow(wordcloud)
plt.show()
```

In [14]:
```
global_terror['Year'].value_counts(dropna = False).sort_index()
```

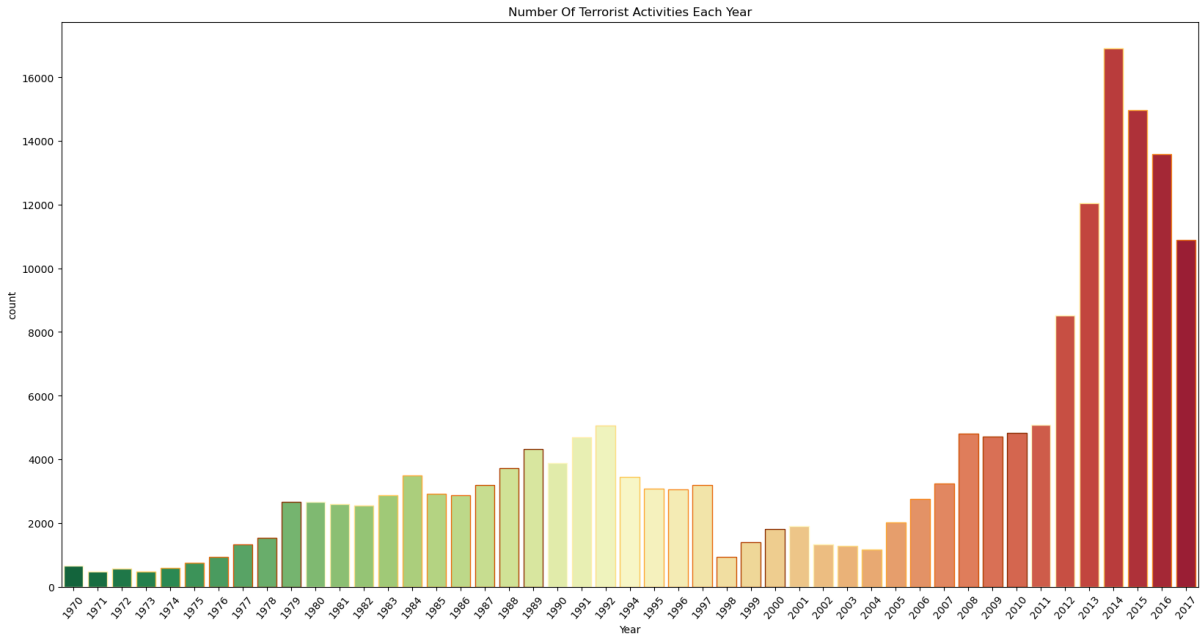
Out[14]:
```
1970      651
1971      471
1972      568
1973      473
1974      581
1975      740
1976      923
1977     1319
1978     1526
1979     2662
1980     2662
1981     2586
1982     2544
1983     2870
1984     3495
1985     2915
1986     2860
1987     3183
1988     3721
1989     4324
1990     3887
1991     4683
1992     5071
1994     3456
1995     3081
1996     3058
1997     3197
1998      934
1999     1395
2000     1814
2001     1906
2002     1333
2003     1278
2004     1166
2005     2017
2006     2758
2007     3242
2008     4805
2009     4721
2010     4826
2011     5076
2012     8522
2013    12036
2014    16903
2015    14965
2016    13587
2017    10900
Name: Year, dtype: int64
```

Terrorist Activities Each Year

In [15]:
```
x_year = global_terror['Year'].unique()
y_count_years = global_terror['Year'].value_counts(dropna = False).sort_index()
plt.figure(figsize = (18,10))
sns.barplot(x = x_year,
            y = y_count_years,
            palette = 'rocket')
plt.xticks(rotation = 50)
plt.xlabel('Attack Year')
plt.ylabel('Number of Attacks Each Year')
plt.title('Attack In Years')
plt.show()
```

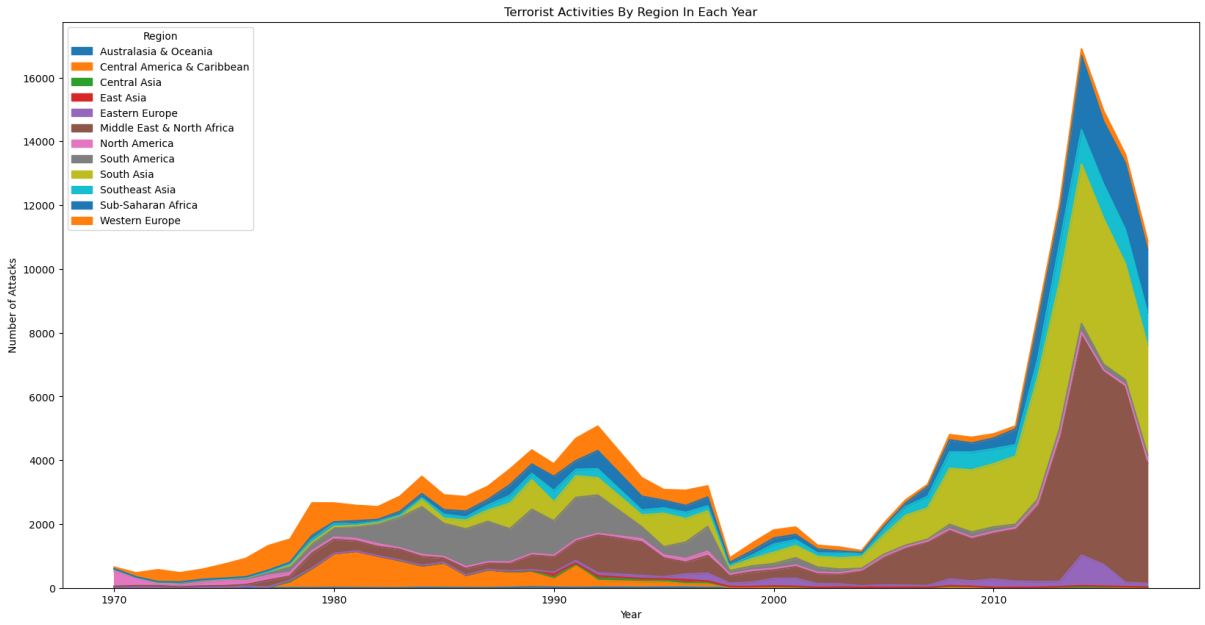


In [18]:
```
plt.subplots(figsize=(20,10))
sns.countplot(x='Year', data=global_terror, palette='RdYlGn_r', edgecolor=sns.color_palette("YlOrB
plt.xticks(rotation=50)
plt.title('Number Of Terrorist Activities Each Year')
plt.show()
```



Terrorist Activities By Region In Each Year

In [19]:
```
pd.crosstab(global_terror.Year, global_terror.Region).plot(kind='area',figsize=(20,10))
plt.title('Terrorist Activities By Region In Each Year')
plt.ylabel('Number of Attacks')
plt.show()
```



In [20]:
```
global_terror['Wounded'] = global_terror['Wounded'].fillna(0).astype(int)
global_terror['Killed'] = global_terror['Killed'].fillna(0).astype(int)
global_terror['Casualities'] = global_terror['Killed'] + global_terror['Wounded']
```

In [21]:
```
# Top 50 worst terrorist attacks
global_terror1 = global_terror.sort_values(by='Casualities',ascending=False)[:50]
```

In [22]:
```
heat=global_terror1.pivot_table(index='Country',columns='Year',values='Casualities')
heat.fillna(0,inplace=True)
```

In [23]:
```
heat.head()
```

Out[23]:

Year	1982	1984	1987	1992	1994	1995	1996	1997	1998	2001	...	2005	2006	2007	2008	2009	2013	2
Country																		
Afghanistan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0	0.0	0.0	0.0	0.0	
Algeria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	450.0	0.0	0.0	...	0.0	0.0	0.0	0.0	0.0	0.0	
Chad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0	0.0	1161.0	0.0	0.0	
Egypt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0	0.0	0.0	0.0	0.0	
Ethiopia	0.0	0.0	0.0	500.0	0.0	0.0	0.0	0.0	0.0	0.0	...	0.0	0.0	0.0	0.0	0.0	0.0	

5 rows × 21 columns

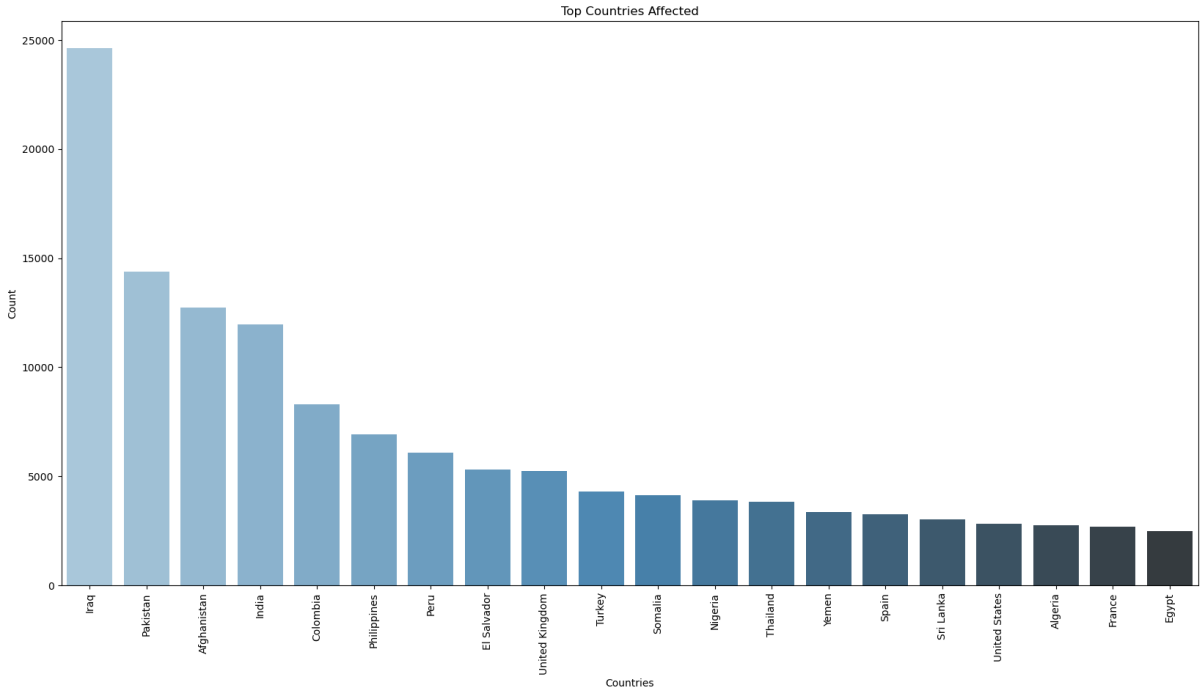
In [24]:
```
import plotly.offline as py
py.init_notebook_mode(connected=True)
import plotly.graph_objs as go
colorscale = [[0, '#edf8fb'], [.3, '#00BFFF'],  [.6, '#8856a7'],  [1, '#810f7c']]
heatmap = go.Heatmap(z=heat.values, x=heat.columns, y=heat.index, colorscale=colorscale)
data = [heatmap]
layout = go.Layout(
    title='Top 50 Worst Terror Attacks in History from 1982 to 2017',
    xaxis = dict(ticks='', nticks=20),
    yaxis = dict(ticks='')
)
fig = go.Figure(data=data, layout=layout)
py.iplot(fig, filename='heatmap',show_link=False)
```

In [25]:
```
global_terror.Country.value_counts()[:21]
```

Out[25]:
```
Iraq              24636
Pakistan          14368
Afghanistan       12731
India             11960
Colombia           8306
Philippines        6908
Peru               6096
El Salvador        5320
United Kingdom     5235
Turkey             4292
Somalia            4142
Nigeria            3907
Thailand           3849
Yemen              3347
Spain              3249
Sri Lanka          3022
United States      2836
Algeria            2743
France             2693
Egypt              2479
Lebanon            2478
Name: Country, dtype: int64
```

Top Countries Affected By Terrorist Attacks

In [27]:
```
plt.subplots(figsize=(20,10))
sns.barplot(x=global_terror['Country'].value_counts()[:20].index, y=global_terror['Country'].value
plt.title('Top Countries Affected')
plt.xlabel('Countries')
plt.ylabel('Count')
plt.xticks(rotation=90)
plt.show()
```



ANALYSIS ON CUSTOMIZED DATA

Terrorist Attacks of a Particular year and their Locations

Let's look at the terrorist acts in the world over a certain year.

In [30]:
```
import folium
from folium.plugins import MarkerCluster
```

In [31]:
```
filterYear = global_terror['Year'] == 2001
```

In [32]:
```
filterData = global_terror[filterYear] # filter data
# filterData.info()
reqFilterData = filterData.loc[:,'city':'longitude'] # get the required fields
reqFilterData = reqFilterData.dropna() # drop NaN values in latitude and longitude
reqFilterDataList = reqFilterData.values.tolist()
# reqFilterDataList
```

In [33]:
```
map = folium.Map(location = [0, 50], tiles='CartoDB positron', zoom_start=2)
markerCluster = folium.plugins.MarkerCluster().add_to(map)
for point in range(0, len(reqFilterDataList)):
    folium.Marker(location=[reqFilterDataList[point][1],reqFilterDataList[point][2]],
                  popup = reqFilterDataList[point][0]).add_to(markerCluster)
map
```

Out[33]: Make this Notebook Trusted to load map: File -> Trust Notebook

From the above map, we can depict that the maximum attacks carried out in the year 2001 was on the African Continent, almost 1325 attacks. Then, the continent South America faced the highest number of attacks, i.e. 258.

Terrorist's Origanizations Operations In Each Country

In [35]:
```
global_terror.Group.value_counts()[1:20]
```

Out[35]:
```
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
Kurdistan Workers' Party (PKK)                     2310
Basque Fatherland and Freedom (ETA)                2024
Communist Party of India - Maoist (CPI-Maoist)     1878
Maoists                                            1630
Liberation Tigers of Tamil Eelam (LTTE)            1606
National Liberation Army of Colombia (ELN)         1561
Tehrik-i-Taliban Pakistan (TTP)                    1351
Palestinians                                       1125
Houthi extremists (Ansar Allah)                    1062
Al-Qaida in the Arabian Peninsula (AQAP)           1020
Name: Group, dtype: int64
```

In [36]:
```
test = global_terror[global_terror.Group.isin(['Shining Path (SL)','Taliban','Islamic State of Ira
```

In [37]:
```
test.Country.unique()
```

Out[37]:
```
array(['Peru', 'Bolivia', 'Colombia', 'Argentina', 'Brazil', 'Mexico',
       'Afghanistan', 'Pakistan', 'Syria', 'Iraq', 'Turkey', 'Tunisia',
       'Lebanon', 'Turkmenistan', 'Israel', 'Belgium', 'Egypt', 'Libya',
       'Saudi Arabia', 'West Bank and Gaza Strip', 'France', 'Bahrain',
       'Jordan', 'Somalia', 'Germany', 'Yemen', 'Philippines', 'Malaysia',
       'Indonesia', 'Russia', 'Georgia', 'United Kingdom', 'Iran',
       'Australia'], dtype=object)
```

In [38]:
```
global_terror_df_group = global_terror.dropna(subset=['latitude','longitude'])
```

In [39]:
```
global_terror_df_group = global_terror_df_group.drop_duplicates(subset=['Country','Group'])
```

In [40]:
```
terrorist_groups = global_terror.Group.value_counts()[1:8].index.tolist()
global_terror_df_group = global_terror_df_group.loc[global_terror_df_group.Group.isin(terrorist_gr
print(global_terror_df_group.Group.unique())
```

```
["New People's Army (NPA)" 'Irish Republican Army (IRA)'
 'Shining Path (SL)' 'Farabundo Marti National Liberation Front (FMLN)'
 'Taliban' 'Al-Shabaab' 'Islamic State of Iraq and the Levant (ISIL)']
```

In [41]:
```
map = folium.Map(location=[50, 0], tiles="CartoDB positron", zoom_start=2)
markerCluster = folium.plugins.MarkerCluster().add_to(map)
for i in range(0,len(global_terror_df_group)):
    folium.Marker([global_terror_df_group.iloc[i]['latitude'],global_terror_df_group.iloc[i]['long
                   popup='Group:{}<br>Country:{}'.format(global_terror_df_group.iloc[i]['Group'],
                   global_terror_df_group.iloc[i]['Country'])).add_to(map)
map
```

Out[41]:
Make this Notebook Trusted to load map: File -> Trust Notebook

In [42]:
```
m1 = folium.Map(location=[50, 0], tiles="CartoDB positron", zoom_start=2)
marker_cluster = MarkerCluster(
    name='clustered icons',
    overlay=True,
    control=False,
    icon_create_function=None
)
for i in range(0,len(global_terror_df_group)):
    marker=folium.Marker([global_terror_df_group.iloc[i]['latitude'],global_terror_df_group.iloc[
    popup='Group:{}<br>Country:{}'.format(global_terror_df_group.iloc[i]['Group'],
                                          global_terror_df_group.iloc[i]['Country'])
    folium.Popup(popup).add_to(marker)
    marker_cluster.add_child(marker)
marker_cluster.add_to(m1)
folium.TileLayer('openstreetmap').add_to(m1)
#folium.TileLayer('Mapbox Bright').add_to(m1)
folium.TileLayer('cartodbdark_matter').add_to(m1)
folium.TileLayer('stamentoner').add_to(m1)
folium.LayerControl().add_to(m1)

m1
```

Out[42]: Make this Notebook Trusted to load map: File -> Trust Notebook

In [43]:
```
global_terror.head()
```

Out[43]:

	Year	Month	Day	Country	state	Region	city	latitude	longitude	AttackType	Killed	Woun
0	1970	7	2	Dominican Republic	NaN	Central America & Caribbean	Santo Domingo	18.456792	-69.951164	Assassination	1	
1	1970	0	0	Mexico	Federal	North America	Mexico city	19.371887	-99.086624	Hostage Taking (Kidnapping)	0	
2	1970	1	0	Philippines	Tarlac	Southeast Asia	Unknown	15.478598	120.599741	Assassination	1	
3	1970	1	0	Greece	Attica	Western Europe	Athens	37.997490	23.762728	Bombing/Explosion	0	
4	1970	1	0	Japan	Fukouka	East Asia	Fukouka	33.580412	130.396361	Facility/Infrastructure Attack	0	

In [44]:
```
# Total Number of people killed in terror attack
killData = global_terror.loc[:,'Killed']
print('Number of people killed by terror attack:', int(sum(killData.dropna())))# drop the NaN valu
```

```
Number of people killed by terror attack: 411868
```

In [45]:
```
# Let's look at what types of attacks these deaths were made of.
attackData = global_terror.loc[:,'AttackType']
# attackData
typeKillData = pd.concat([attackData, killData], axis=1)
```

In [46]:
```
typeKillData.head()
```

Out[46]:

	AttackType	Killed
0	Assassination	1
1	Hostage Taking (Kidnapping)	0
2	Assassination	1
3	Bombing/Explosion	0
4	Facility/Infrastructure Attack	0

In [47]:
```
typeKillFormatData = typeKillData.pivot_table(columns='AttackType', values='Killed', aggfunc='sum
typeKillFormatData
```

Out[47]:

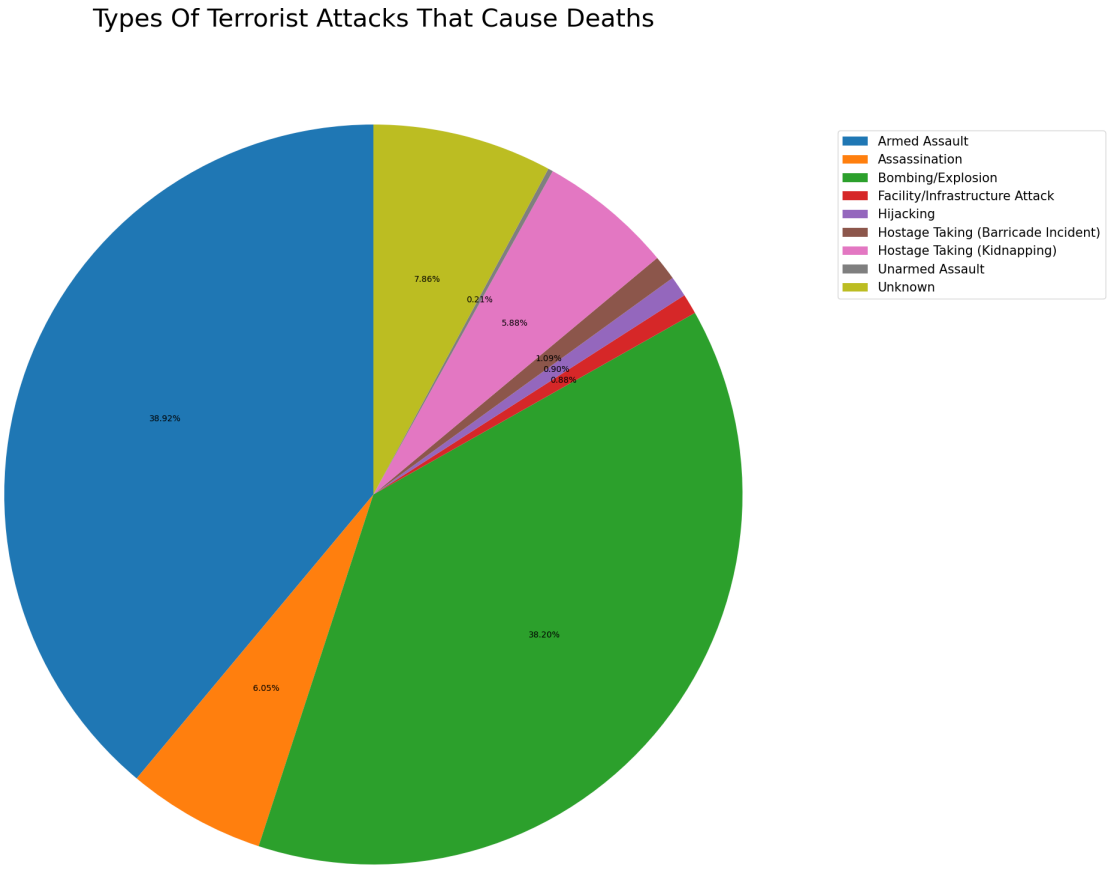
AttackType	Armed Assault	Assassination	Bombing/Explosion	Facility/Infrastructure Attack	Hijacking	Hostage Taking (Barricade Incident)	Hostage Taking (Kidnapping)	Unarm Assa
Killed	160297	24920	157321	3642	3718	4478	24231	8

In [48]:
```
typeKillFormatData.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 1 entries, Killed to Killed
Data columns (total 9 columns):
 #   Column                              Non-Null Count  Dtype
---  ------                              --------------  -----
 0   Armed Assault                       1 non-null      int32
 1   Assassination                       1 non-null      int32
 2   Bombing/Explosion                   1 non-null      int32
 3   Facility/Infrastructure Attack      1 non-null      int32
 4   Hijacking                           1 non-null      int32
 5   Hostage Taking (Barricade Incident) 1 non-null      int32
 6   Hostage Taking (Kidnapping)         1 non-null      int32
 7   Unarmed Assault                     1 non-null      int32
 8   Unknown                             1 non-null      int32
dtypes: int32(9)
memory usage: 152.0+ bytes
```

In [50]:
```
labels = typeKillFormatData.columns.tolist()
transposed = typeKillFormatData.T
values = transposed.values.flatten().tolist()  # Flatten the 2D array

fig, ax = plt.subplots(figsize=(20, 20), subplot_kw=dict(aspect="equal"))
plt.pie(values, startangle=90, autopct='%.2f%%')
plt.title('Types Of Terrorist Attacks That Cause Deaths', fontsize=30)
plt.legend(labels, loc='upper right', bbox_to_anchor=(1.3, 0.9), fontsize=15)  # Location of the
plt.show()
```



In [51]:
```
global_terror.head(2)
```

Out[51]:

	Year	Month	Day	Country	state	Region	city	latitude	longitude	AttackType	Killed	Wounded	T
0	1970	7	2	Dominican Republic	NaN	Central America & Caribbean	Santo Domingo	18.456792	-69.951164	Assassination	1	0	Gu
1	1970	0	0	Mexico	Federal	North America	Mexico city	19.371887	-99.086624	Hostage Taking (Kidnapping)	0	0	N Cl dau

In [52]:
```
# Number of Killed in Terrorist Attacks by Countries
countryData = global_terror.loc[:,'Country']
# countyData
countryKillData = pd.concat([countryData, killData], axis=1)
```

In [53]:
```
countryKillFormatData = countryKillData.pivot_table(columns='Country', values='Killed', aggfunc='
countryKillFormatData
```

Out[53]:

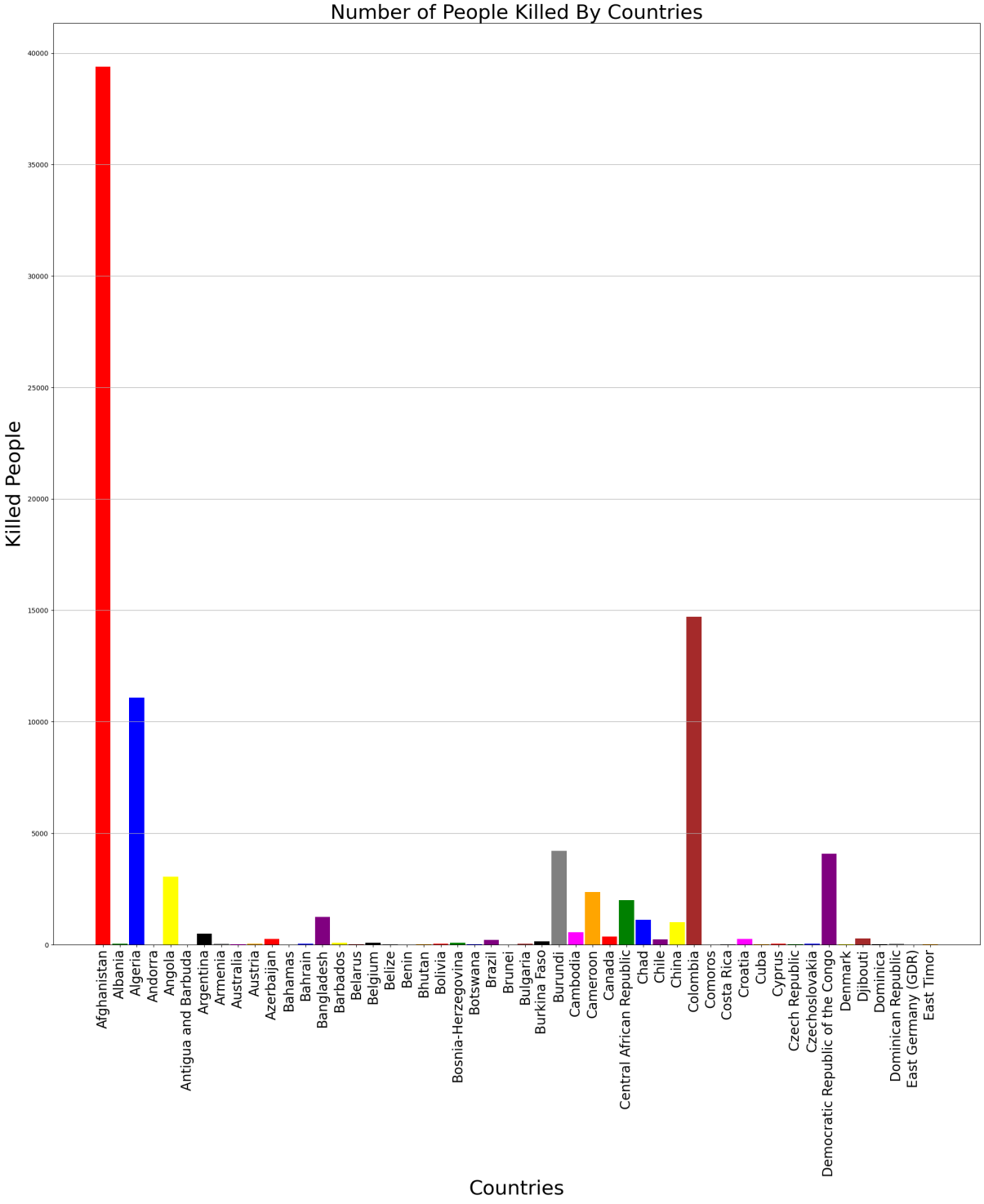
Country	Afghanistan	Albania	Algeria	Andorra	Angola	Antigua and Barbuda	Argentina	Armenia	Australia	Austria	...	Vietnam
Killed	39384	42	11066	0	3043	0	490	37	23	30	...	1

1 rows × 205 columns

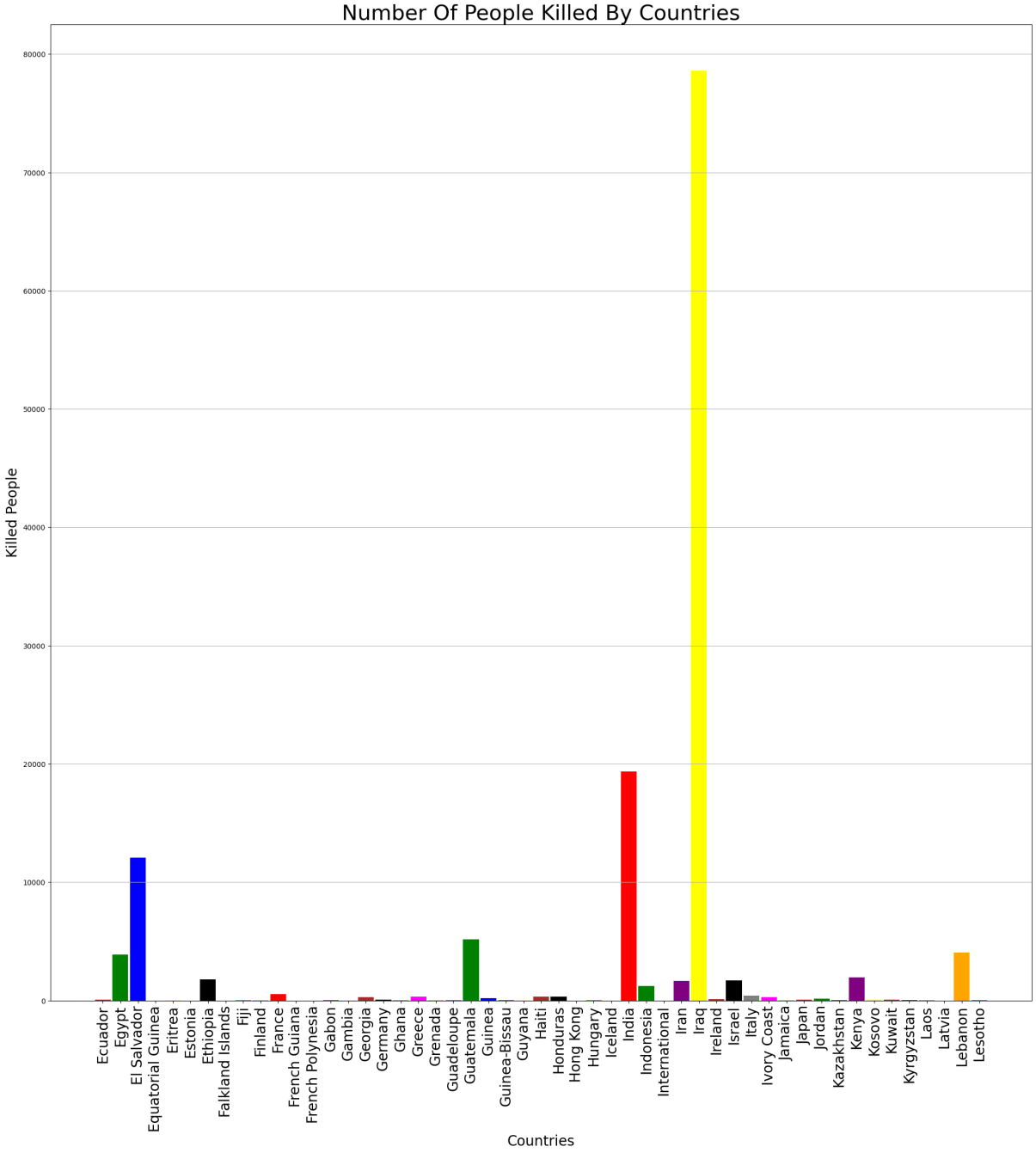
In [54]:
```
fig_size = plt.rcParams["figure.figsize"]
fig_size[0]=25
fig_size[1]=25
plt.rcParams["figure.figsize"] = fig_size
```

In [55]:

```
labels = countryKillFormatData.columns.tolist()
labels = labels[:50] #50 bar provides nice view
index = np.arange(len(labels))
transpoze = countryKillFormatData.T
values = transpoze.values.tolist()
values = values[:50]
values = [int(i[0]) for i in values] # convert float to int
colors = ['red', 'green', 'blue', 'purple', 'yellow', 'brown', 'black', 'gray', 'magenta', 'orange
fig, ax = plt.subplots(1, 1)
ax.yaxis.grid(True)
fig_size = plt.rcParams["figure.figsize"]
fig_size[0]=25
fig_size[1]=25
plt.rcParams["figure.figsize"] = fig_size
plt.bar(index, values, color = colors, width = 0.9)
plt.ylabel('Killed People', fontsize=30)
plt.xlabel('Countries', fontsize = 30)
plt.xticks(index, labels, fontsize=20, rotation=90)
plt.title('Number of People Killed By Countries', fontsize = 30)
# print(fig_size)
plt.show()
```

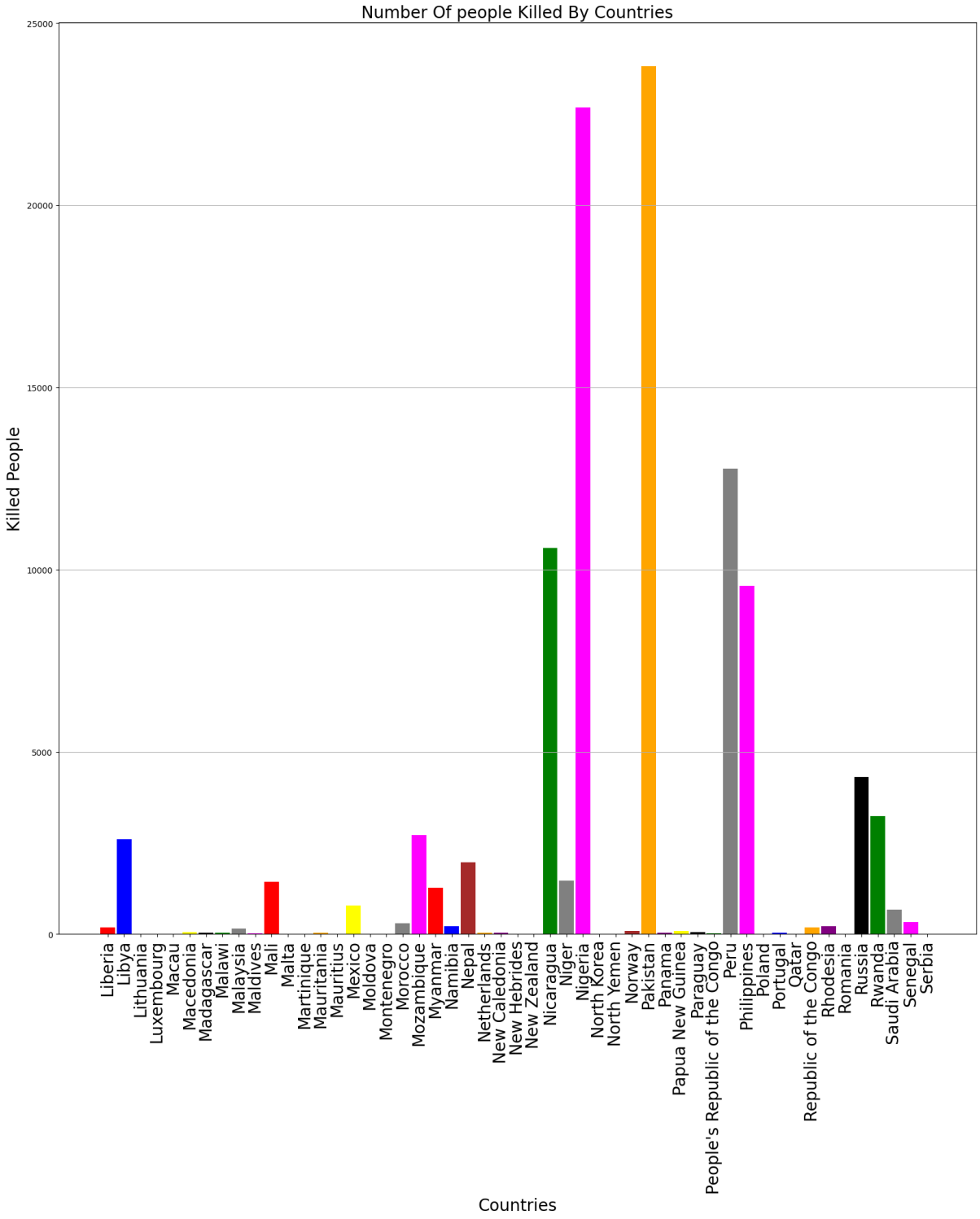

Number of People Killed By Countries
Killed People
0
5000
10000
15000
20000
25000
30000
35000
40000
Afghanistan
Albania
Algeria
Andorra
Angola
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bhutan
Bolivia
Bosnia-Herzegovina
Botswana
Brazil
Brunei
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Central African Republic
Chad
Chile
China
Colombia
Comoros
Costa Rica
Croatia
Cuba
Cyprus
Czech Republic
Czechoslovakia
Democratic Republic of the Congo
Denmark
Djibouti
Dominica
Dominican Republic
East Germany (GDR)
East Timor
Countries

In [56]:
```
labels = countryKillFormatData.columns.tolist()
labels = labels[50:101]
index = np.arange(len(labels))
transpoze = countryKillFormatData.T
values = transpoze.values.tolist()
values = values[50:101]
values = [int(i[0]) for i in values]
colors = ['red', 'green', 'blue', 'purple', 'yellow', 'brown', 'black', 'gray', 'magenta', 'orange
fig, ax = plt.subplots(1, 1)
ax.yaxis.grid(True)
fig_size = plt.rcParams["figure.figsize"]
fig_size[0]=20
fig_size[1]=20
plt.rcParams["figure.figsize"] = fig_size
plt.bar(index, values, color = colors, width = 0.9)
plt.ylabel('Killed People', fontsize=20)
plt.xlabel('Countries', fontsize = 20)
plt.xticks(index, labels, fontsize=20, rotation=90)
plt.title('Number Of People Killed By Countries', fontsize = 30)
plt.show()
```

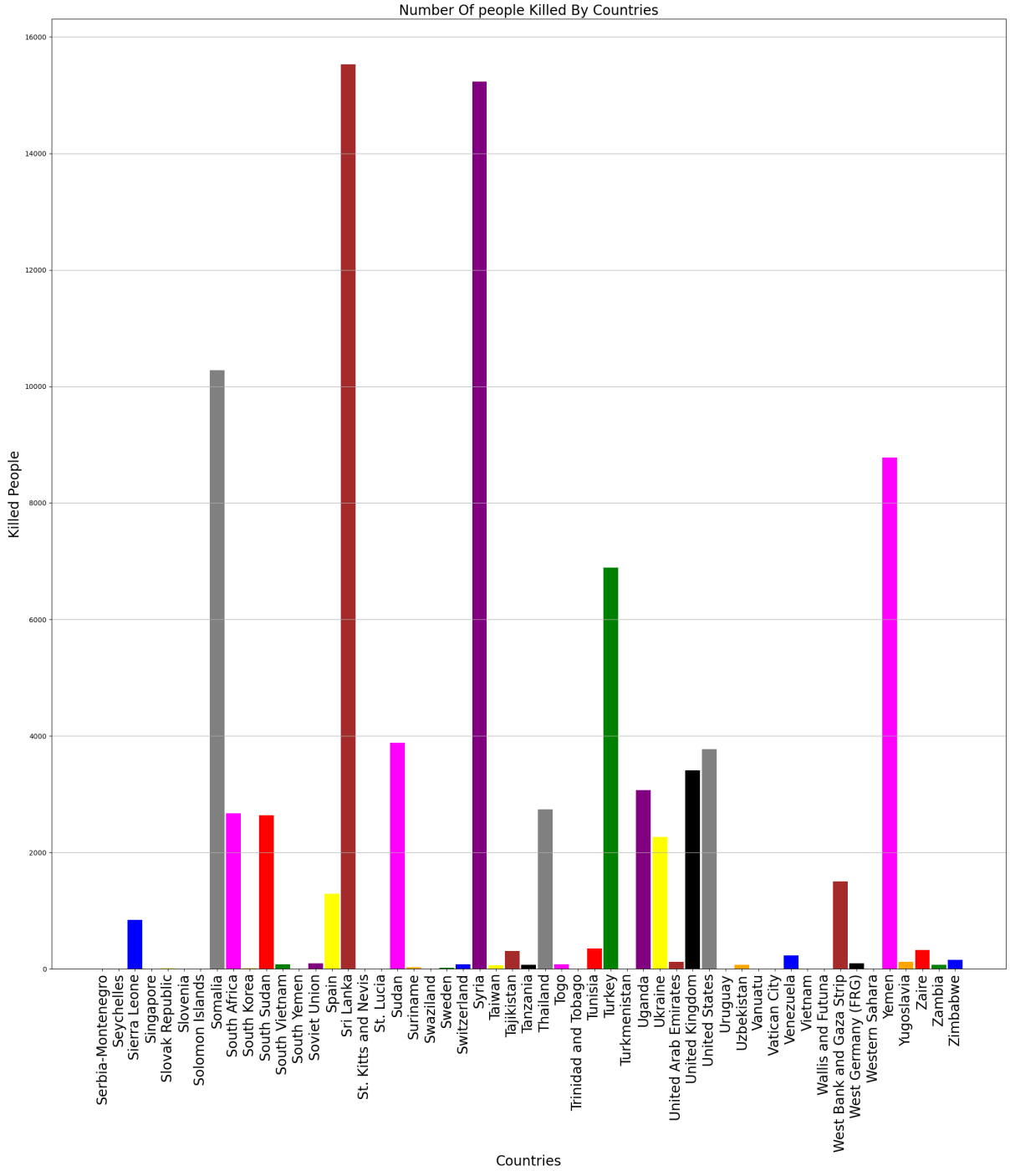


In [57]:

```
labels = countryKillFormatData.columns.tolist()
labels = labels[101:152]
index = np.arange(len(labels))
transpoze = countryKillFormatData.T
values = transpoze.values.tolist()
values = values[101:152]
values = [int(i[0]) for i in values]
colors = ['red', 'blue', 'brown', 'orange', 'purple', 'yellow', 'black', 'green', 'gray', 'magenta
fig, ax = plt.subplots(1, 1)
ax.yaxis.grid(True)
fig_size = plt.rcParams["figure.figsize"]
fig_size[0]=25
fig_size[1]=25
plt.rcParams["figure.figsize"] = fig_size
plt.bar(index, values, color = colors, width = 0.9)
plt.ylabel('Killed People', fontsize=20)
plt.xlabel('Countries', fontsize = 20)
plt.xticks(index, labels, fontsize=20, rotation=90)
plt.title('Number Of people Killed By Countries', fontsize = 20)
plt.show()
```


Number Of people Killed By Countries
Killed People
25000
20000
15000
10000
5000
0
Liberia
Libya
Lithuania
Luxembourg
Macau
Macedonia
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Martinique
Mauritania
Mauritius
Mexico
Moldova
Montenegro
Morocco
Mozambique
Myanmar
Namibia
Nepal
Netherlands
New Caledonia
New Hebrides
New Zealand
Nicaragua
Niger
Nigeria
North Korea
North Yemen
Norway
Pakistan
Panama
Papua New Guinea
Paraguay
People's Republic of the Congo
Peru
Philippines
Poland
Portugal
Qatar
Republic of the Congo
Rhodesia
Romania
Russia
Rwanda
Saudi Arabia
Senegal
Serbia
Countries

In [58]:
```
labels = countryKillFormatData.columns.tolist()
labels = labels[152:206]
index = np.arange(len(labels))
transpoze = countryKillFormatData.T
values = transpoze.values.tolist()
values = values[152:206]
values = [int(i[0]) for i in values]
colors = ['red', 'green', 'blue', 'purple', 'yellow', 'brown', 'black', 'gray', 'magenta', 'orange
fig, ax = plt.subplots(1, 1)
ax.yaxis.grid(True)
fig_size = plt.rcParams["figure.figsize"]
fig_size[0]=25
fig_size[1]=25
plt.rcParams["figure.figsize"] = fig_size
plt.bar(index, values, color = colors, width = 0.9)
plt.ylabel('Killed People', fontsize=20)
plt.xlabel('Countries', fontsize = 20)
plt.xticks(index, labels, fontsize=20, rotation=90)
plt.title('Number Of people Killed By Countries', fontsize = 20)
plt.show()
```



CONCLUSIONS :

From the above graphs, we can see that the countries where most people are killed are : Afghanisthan, Columbia, Iran, Sri lanka, Syria, Somalia, Yemen naming a few. Even though there is a perception that Muslims are supporters of terrorism, but Muslims are the people who are most damaged by terrorist attacks.

So after different type of analyzation ,Overall terrorism is suddenly increased from 2010 and I have ranked the Hot zone in terms of terrorist activities in all regions -

#Middle East & North Africa

Iraq

Overall having highest Number of terrorist rate and sudden increase in terrorist activity after year 2010

Libya

Overall having low terrorism activity, Second Highest in terms of successful terrorist activities which takes place in this country and an increased in terrorism rate after 2010.

Yemen

Overall having low terrorism activity, Third Highest in terms of successful terrorist activities which takes place in this country and an increased in terrorism rate after 2010.

#South Asia

Afghanistan

Overall having 1st Highest terrorist rates and 1st highest in terms of extended terrorist rates and a very high increase in terrorism rate after 2010.

Pakistan

Overall having 2nd highest terrorist rates but there is a good decrease in terrorist rates if we consider the 20s century and an increase in terrorism rate after 2010 but not as that of increase like Afghanistan and India.

India

Overall having 3rd highest terrorist rates but if we consider extended terrorist rate so this country is 2nd highest and a very high increase in terrorism rate after 2010.

#Sub-Saharan Africa

Nigeria

Overall having low terrorism activity but 1st Highest in terms of extended terrorist activities which takes place in this country and 2nd in terms of increased of terrorism rate after 2010.

Somalia

Overall having low terrorism activity but 2nd Highest in terms of extended terrorist activities which takes place in this country and 1st in terms of increased of terrorism rate after 2010.

Sudan

Overall having low terrorism activity but 3rd Highest in terms of extended terrorist activities which takes place in this country and a bit increase in terrorism rate after 2010.

#Solution

- More security surveillance required at Iraq.

- Noticing the trends of terrorism activities , hugely populated regions suffer major kill ratios. This must be controlled with strict border rules

Thank You!

GitHub: https://github.com/anujtiwari21?tab=repositories (https://github.com/anujtiwari21?tab=repositories)