Task 4:Exploratory Data Analysis on Dataset - Terrorism

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**

In [ ]:
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```python
data = pd.read_csv('gt.csv')
```

```
C:\Users\Admin\anaconda3\lib\site-packages\IPython\core\interactiveshell.py:3165: DtypeWarning: Columns (4,6,3
1,33,61,62,63,76,79,90,92,94,96,114,115,121) have mixed types.Specify dtype option on import or set low_memory=
False.
  has_raised = await self.run_ast_nodes(code_ast.body, cell_name,
```

In [3]:
```python
data.head()
```

Out[3]:

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

5 rows × 135 columns

In [4]:
```python
data.tail()
```

Out[4]:

	eventid	iyear	imonth	iday	approxdate	extended	resolution	country	country_txt	region	...	addnotes	scite1
181686	201712310022	2017	12	31	NaN	0	NaN	182	Somalia	11	...	NaN	"Somalia: Al-Shabaab Militants Attack Army Che...
181687	201712310029	2017	12	31	NaN	0	NaN	200	Syria	10	...	NaN	"Putin's 'victory' in Syria has turned into a ...
181688	201712310030	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Maguindanao clashes trap tribe members," Phil...
181689	201712310031	2017	12	31	NaN	0	NaN	92	India	6	...	NaN	"Trader escapes grenade attack in Imphal," Bus...
181690	201712310032	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Security tightened in Cotabato following IED ...

5 rows × 135 columns

In [5]:
```python
data.shape
```

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

In [6]:
```python
data.describe()
```

Out[6]:

	eventid	iyear	imonth	iday	extended	country	region	latitude	longitude
count	1.816910e+05	181691.000000	181691.000000	181691.000000	181691.000000	181691.000000	181691.000000	177135.000000	1.771340e+05
mean	2.002705e+11	2002.638997	6.467277	15.505644	0.045346	131.968501	7.160938	23.498343	-4.586957e+02
std	1.325957e+09	13.259430	3.388303	8.814045	0.208063	112.414535	2.933408	18.569242	2.047790e+05
min	1.970000e+11	1970.000000	0.000000	0.000000	0.000000	4.000000	1.000000	-53.154613	-8.618590e+07
25%	1.991021e+11	1991.000000	4.000000	8.000000	0.000000	78.000000	5.000000	11.510046	4.545640e+00
50%	2.009022e+11	2009.000000	6.000000	15.000000	0.000000	98.000000	6.000000	31.467463	4.324651e+01
75%	2.014081e+11	2014.000000	9.000000	23.000000	0.000000	160.000000	10.000000	34.685087	6.871033e+01
max	2.017123e+11	2017.000000	12.000000	31.000000	1.000000	1004.000000	12.000000	74.633553	1.793667e+02

8 rows × 77 columns

In [7]:
```python
data.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 [8]:
```python
data.columns
```

Out[8]:
```
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 [9]:
```python
data.value_counts
```

Out[9]:
```
<bound method DataFrame.value_counts of               eventid  iyear  imonth  iday approxdate  extended resoluti
on  \
0        197000000001   1970       7     2        NaN         0        NaN
1        197000000002   1970       0     0        NaN         0        NaN
2        197001000001   1970       1     0        NaN         0        NaN
3        197001000002   1970       1     0        NaN         0        NaN
4        197001000003   1970       1     0        NaN         0        NaN
...               ...    ...     ...   ...        ...       ...        ...
181686  201712310022   2017      12    31        NaN         0        NaN
181687  201712310029   2017      12    31        NaN         0        NaN
181688  201712310030   2017      12    31        NaN         0        NaN
181689  201712310031   2017      12    31        NaN         0        NaN
181690  201712310032   2017      12    31        NaN         0        NaN

        country         country_txt  region  ... addnotes  \
0            58  Dominican Republic       2  ...      NaN
1           130              Mexico       1  ...      NaN
2           160         Philippines       5  ...      NaN
3            78              Greece       8  ...      NaN
4           101               Japan       4  ...      NaN
...         ...                 ...     ...  ...      ...
181686      182             Somalia      11  ...      NaN
181687      200               Syria      10  ...      NaN
181688      160         Philippines       5  ...      NaN
181689       92               India       6  ...      NaN
181690      160         Philippines       5  ...      NaN

                                                   scite1  \
0                                                     NaN
1                                                     NaN
2                                                     NaN
3                                                     NaN
4                                                     NaN
...                                                   ...
181686  "Somalia: Al-Shabaab Militants Attack Army Che...
181687  "Putin's 'victory' in Syria has turned into a ...
181688  "Maguindanao clashes trap tribe members," Phil...
181689  "Trader escapes grenade attack in Imphal," Bus...
181690  "Security tightened in Cotabato following IED ...

                                                   scite2  \
0                                                     NaN
1                                                     NaN
2                                                     NaN
3                                                     NaN
4                                                     NaN
...                                                   ...
181686  "Highlights: Somalia Daily Media Highlights 2 ...
181687  "Two Russian soldiers killed at Hmeymim base i...
181688                                                NaN
181689                                                NaN
181690  "Security tightened in Cotabato City," Manila ...

                                                   scite3  \
0                                                     NaN
1                                                     NaN
2                                                     NaN
3                                                     NaN
4                                                     NaN
...                                                   ...
181686  "Highlights: Somalia Daily Media Highlights 1 ...
181687  "Two Russian servicemen killed in Syria mortar...
181688                                                NaN
181689                                                NaN
181690                                                NaN

                          dbsource  INT_LOG  INT_IDEO INT_MISC INT_ANY  related
0                             PGIS        0         0        0       0      NaN
1                             PGIS        0         1        1       1      NaN
2                             PGIS       -9        -9        1       1      NaN
3                             PGIS       -9        -9        1       1      NaN
4                             PGIS       -9        -9        1       1      NaN
...                            ...      ...       ...      ...     ...      ...
181686  START Primary Collection        0         0        0       0      NaN
181687  START Primary Collection       -9        -9        1       1      NaN
181688  START Primary Collection        0         0        0       0      NaN
181689  START Primary Collection       -9        -9        0      -9      NaN
181690  START Primary Collection       -9        -9        0      -9      NaN

[181691 rows x 135 columns]>
```

In [10]:
```python
data.isnull().sum()
```

Out[10]:
```
eventid            0
iyear              0
imonth             0
iday               0
approxdate    172452
               ...
INT_LOG            0
INT_IDEO           0
INT_MISC           0
INT_ANY            0
related       156653
Length: 135, dtype: int64
```

In [11]:
```python
data.isnull().any()
```

Out[11]:
```
eventid       False
iyear         False
imonth        False
iday          False
approxdate     True
              ...
INT_LOG       False
INT_IDEO      False
INT_MISC      False
INT_ANY       False
related        True
Length: 135, dtype: bool
```

In [12]:
```python
data.count()
```

Out[12]:
```
eventid       181691
iyear         181691
imonth        181691
iday          181691
approxdate      9239
               ...
INT_LOG       181691
INT_IDEO      181691
INT_MISC      181691
INT_ANY       181691
related        25038
Length: 135, dtype: int64
```

In [13]:
```python
data.country_txt.value_counts()
#returns a series containing count of unique values (applied on columns)
```

Out[13]:
```
Iraq              24636
Pakistan          14368
Afghanistan       12731
India             11960
Colombia           8306
                  ...
North Korea           1
New Hebrides          1
International         1
South Vietnam         1
St. Lucia             1
Name: country_txt, Length: 205, dtype: int64
```

In [14]:
```python
corelation=data.corr()
print(corelation)
```

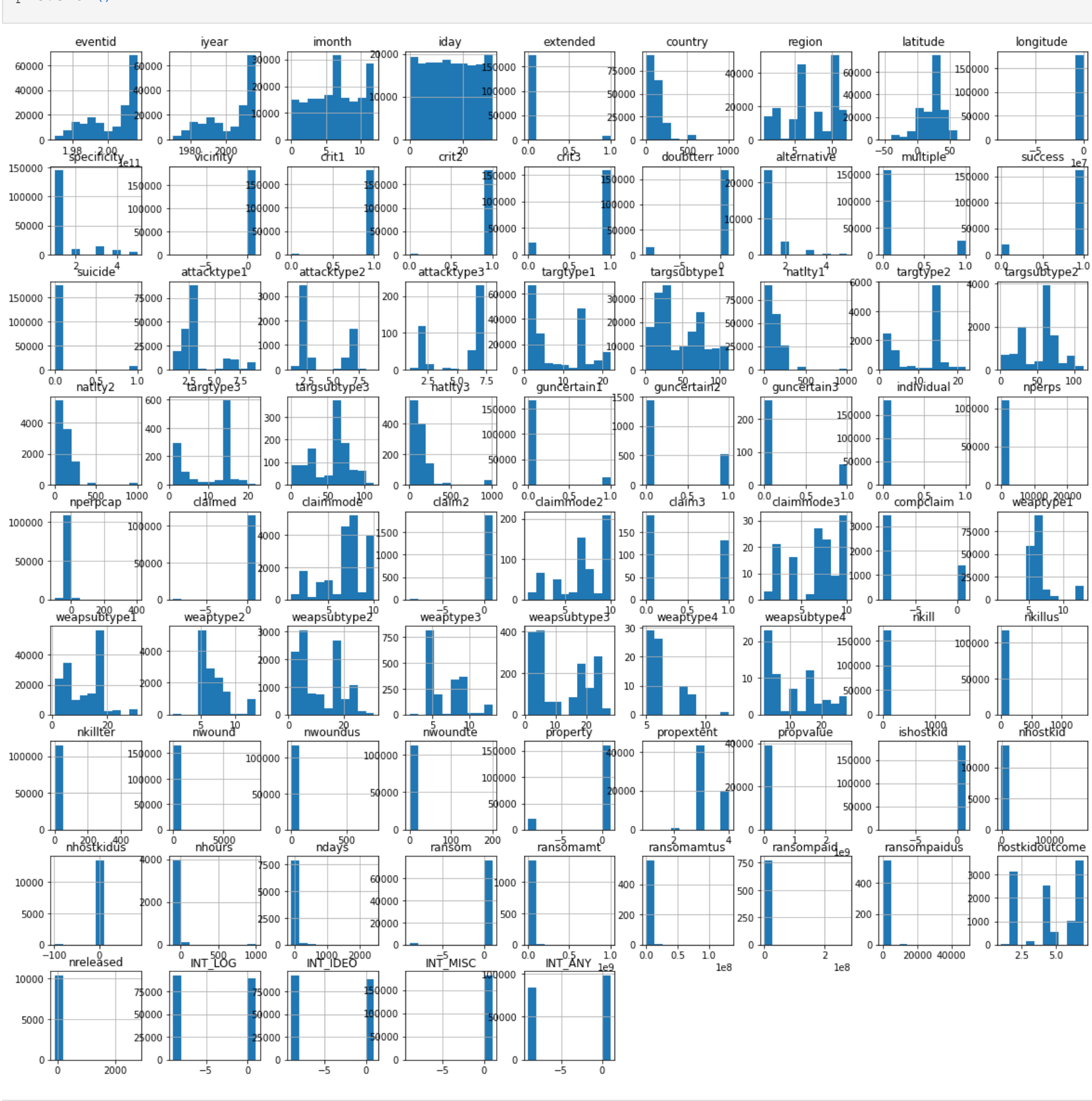
```
            eventid     iyear    imonth      iday  extended   country  \
eventid    1.000000  0.999996  0.002706  0.018336  0.091761 -0.135039
iyear      0.999996  1.000000  0.000139  0.018254  0.091754 -0.135023
imonth     0.002706  0.000139  1.000000  0.005497 -0.000468 -0.006305
iday       0.018336  0.018254  0.005497  1.000000 -0.004700  0.003468
extended   0.091761  0.091754 -0.000468 -0.004700  1.000000 -0.020466
...             ...       ...       ...       ...       ...       ...
nreleased -0.181612 -0.181556 -0.011535  0.001765 -0.192155 -0.044331
INT_LOG   -0.143600 -0.143601 -0.002302 -0.001540  0.071768  0.069904
INT_IDEO  -0.133252 -0.133253 -0.002034 -0.001621  0.075147  0.067564
INT_MISC  -0.077852 -0.077847 -0.002554 -0.002027  0.027335  0.207281
INT_ANY   -0.175605 -0.175596 -0.006336 -0.001199  0.080767  0.153118

             region  latitude  longitude  specificity  ...  ransomamt  \
eventid    0.401371  0.166886   0.003907     0.030641  ...  -0.009990
iyear      0.401384  0.166933   0.003917     0.030626  ...  -0.009984
imonth    -0.002999 -0.015978  -0.003880     0.003621  ...  -0.000710
iday       0.009710  0.003423  -0.002285    -0.006991  ...   0.012755
extended   0.038389 -0.024749   0.000523     0.057897  ...  -0.008114
...             ...       ...        ...          ...  ...        ...
nreleased -0.149511  0.002790  -0.017745    -0.030631  ...   0.054571
INT_LOG   -0.082584 -0.099827   0.002272     0.073022  ...   0.035821
INT_IDEO  -0.071917 -0.094470   0.002268     0.071333  ...   0.039053
INT_MISC   0.043139  0.097652   0.000371    -0.019197  ...   0.023815
INT_ANY   -0.047900 -0.041530   0.002497     0.061389  ...   0.028054

           ransomamtus  ransompaid  ransompaidus  hostkidoutcome  nreleased  \
eventid      -0.018001   -0.014094     -0.165422        0.256113  -0.181612
iyear        -0.018216   -0.014238     -0.165375        0.256092  -0.181556
imonth        0.046989    0.058878     -0.016597        0.011295  -0.011535
iday         -0.010502    0.003148     -0.006581       -0.006706   0.001765
extended      0.028177    0.001966      0.009367        0.233293  -0.192155
...                ...         ...           ...             ...        ...
nreleased     0.034843    0.049322      0.016832       -0.555478   1.000000
INT_LOG       0.031079    0.007029     -0.045504       -0.015442   0.039388
INT_IDEO      0.041983    0.013162     -0.039844       -0.016234   0.040947
INT_MISC      0.125162    0.037227      0.129274       -0.119776   0.085055
INT_ANY       0.053484    0.007275      0.056438       -0.061946   0.064759

            INT_LOG  INT_IDEO  INT_MISC   INT_ANY
eventid   -0.143600 -0.133252 -0.077852 -0.175605
iyear     -0.143601 -0.133253 -0.077847 -0.175596
imonth    -0.002302 -0.002034 -0.002554 -0.006336
iday      -0.001540 -0.001621 -0.002027 -0.001199
extended   0.071768  0.075147  0.027335  0.080767
...             ...       ...       ...       ...
nreleased  0.039388  0.040947  0.085055  0.064759
INT_LOG    1.000000  0.996211  0.052537  0.891051
INT_IDEO   0.996211  1.000000  0.082014  0.893811
INT_MISC   0.052537  0.082014  1.000000  0.252193
INT_ANY    0.891051  0.893811  0.252193  1.000000

[77 rows x 77 columns]
```

In [15]:
```python
corelation=data.corr()
print(corelation)
```


```
            eventid     iyear    imonth      iday  extended   country  \
eventid    1.000000  0.999996  0.002706  0.018336  0.091761 -0.135039
iyear      0.999996  1.000000  0.000139  0.018254  0.091754 -0.135023
imonth     0.002706  0.000139  1.000000  0.005497 -0.000468 -0.006305
iday       0.018336  0.018254  0.005497  1.000000 -0.004700  0.003468
extended   0.091761  0.091754 -0.000468 -0.004700  1.000000 -0.020466
...             ...       ...       ...       ...       ...       ...
nreleased -0.181612 -0.181556 -0.011535  0.001765 -0.192155 -0.044331
INT_LOG   -0.143600 -0.143601 -0.002302 -0.001540  0.071768  0.069904
INT_IDEO  -0.133252 -0.133253 -0.002034 -0.001621  0.075147  0.067564
INT_MISC  -0.077852 -0.077847 -0.002554 -0.002027  0.027335  0.207281
INT_ANY   -0.175605 -0.175596 -0.006336 -0.001199  0.080767  0.153118

             region  latitude  longitude  specificity  ...  ransomamt  \
eventid    0.401371  0.166886   0.003907     0.030641  ...  -0.009990
iyear      0.401384  0.166933   0.003917     0.030626  ...  -0.009984
imonth    -0.002999 -0.015978  -0.003880     0.003621  ...  -0.000710
iday       0.009710  0.003423  -0.002285    -0.006991  ...   0.012755
extended   0.038389 -0.024749   0.000523     0.057897  ...  -0.008114
...             ...       ...        ...          ...  ...        ...
nreleased -0.149511  0.002790  -0.017745    -0.030631  ...   0.054571
INT_LOG   -0.082584 -0.099827   0.002272     0.073022  ...   0.035821
INT_IDEO  -0.071917 -0.094470   0.002268     0.071333  ...   0.039053
INT_MISC   0.043139  0.097652   0.000371    -0.019197  ...   0.023815
INT_ANY   -0.047900 -0.041530   0.002497     0.061389  ...   0.028054

           ransomamtus  ransompaid  ransompaidus  hostkidoutcome  nreleased  \
eventid      -0.018001   -0.014094     -0.165422        0.256113  -0.181612
iyear        -0.018216   -0.014238     -0.165375        0.256092  -0.181556
imonth        0.046989    0.058878     -0.016597        0.011295  -0.011535
iday         -0.010502    0.003148     -0.006581       -0.006706   0.001765
extended      0.028177    0.001966      0.009367        0.233293  -0.192155
...                ...         ...           ...             ...        ...
nreleased     0.034843    0.049322      0.016832       -0.555478   1.000000
INT_LOG       0.031079    0.007029     -0.045504       -0.015442   0.039388
INT_IDEO      0.041983    0.013162     -0.039844       -0.016234   0.040947
INT_MISC      0.125162    0.037227      0.129274       -0.119776   0.085055
INT_ANY       0.053484    0.007275      0.056438       -0.061946   0.064759

            INT_LOG  INT_IDEO  INT_MISC   INT_ANY
eventid   -0.143600 -0.133252 -0.077852 -0.175605
iyear     -0.143601 -0.133253 -0.077847 -0.175596
imonth    -0.002302 -0.002034 -0.002554 -0.006336
iday      -0.001540 -0.001621 -0.002027 -0.001199
extended   0.071768  0.075147  0.027335  0.080767
...             ...       ...       ...       ...
nreleased  0.039388  0.040947  0.085055  0.064759
INT_LOG    1.000000  0.996211  0.052537  0.891051
INT_IDEO   0.996211  1.000000  0.082014  0.893811
INT_MISC   0.052537  0.082014  1.000000  0.252193
INT_ANY    0.891051  0.893811  0.252193  1.000000

[77 rows x 77 columns]
```


Visualization of Data

In [16]:
```python
data.hist(figsize=(20,20))
plt.show()
```



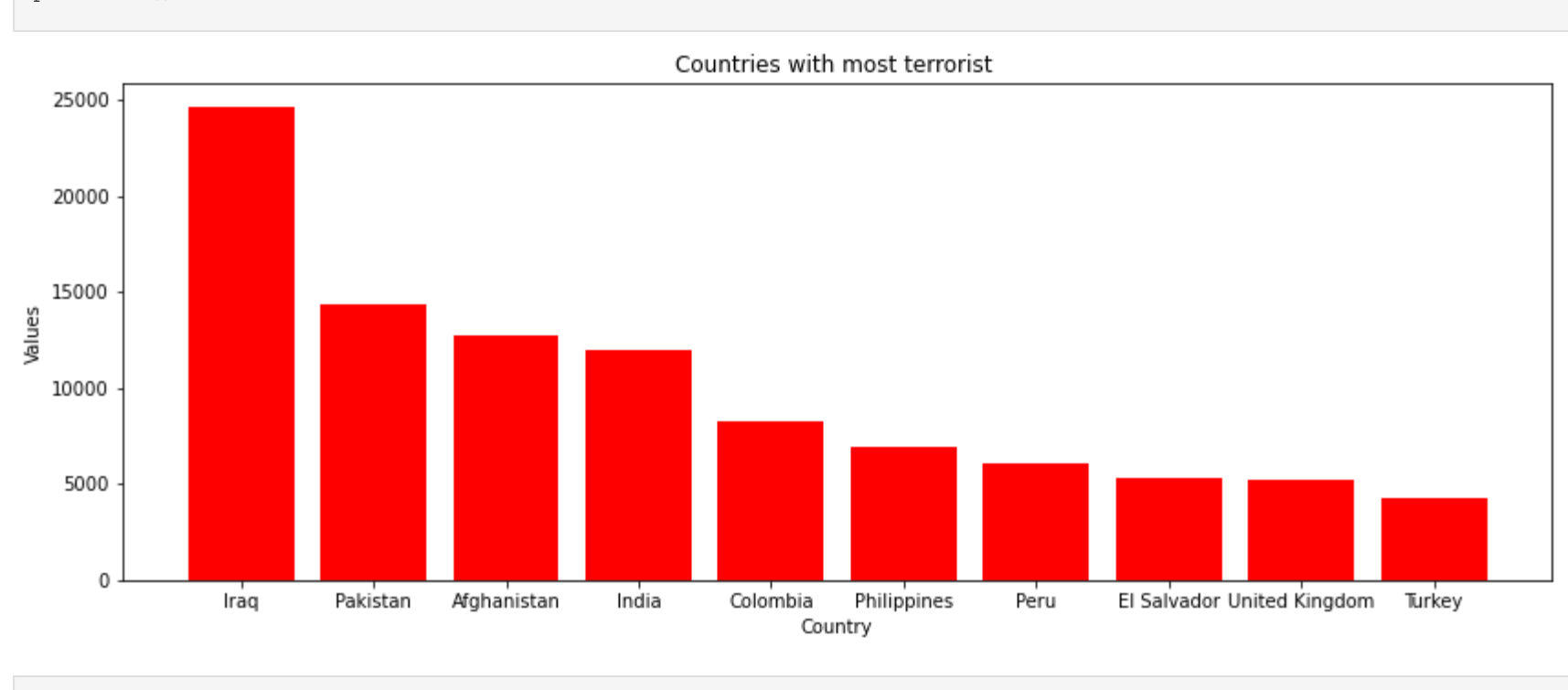
In [17]:
```python
countries_with_most_terrorism = data.country_txt.value_counts().head(10)
countries_with_most_terrorism.index
```

Out[17]:
```
Index(['Iraq', 'Pakistan', 'Afghanistan', 'India', 'Colombia', 'Philippines',
       'Peru', 'El Salvador', 'United Kingdom', 'Turkey'],
      dtype='object')
```

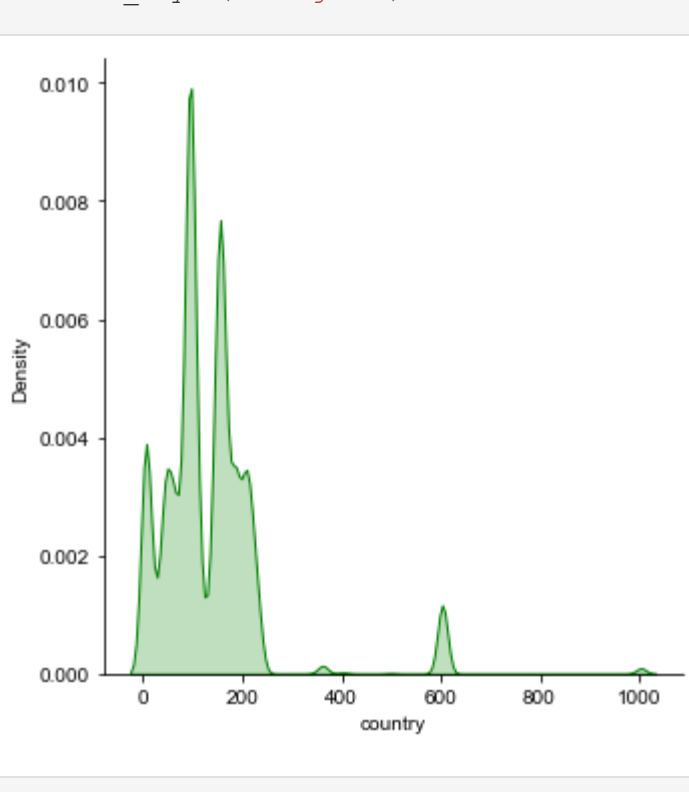
In [18]:
```python
countries = list(countries_with_most_terrorism.index)
print("Countries with most terrorism are as follows:\n",countries)
```

```
Countries with most terrorism are as follows:
 ['Iraq', 'Pakistan', 'Afghanistan', 'India', 'Colombia', 'Philippines', 'Peru', 'El Salvador', 'United Kingdo
m', 'Turkey']
```

In [19]:
```python
fig, ax = plt.subplots(figsize=(14,5))
ax.bar(countries_with_most_terrorism.index,countries_with_most_terrorism.values,color='r')
plt.title("Countries with most terrorist ")
plt.xlabel('Country')
plt.ylabel('Values')
plt.show()
```



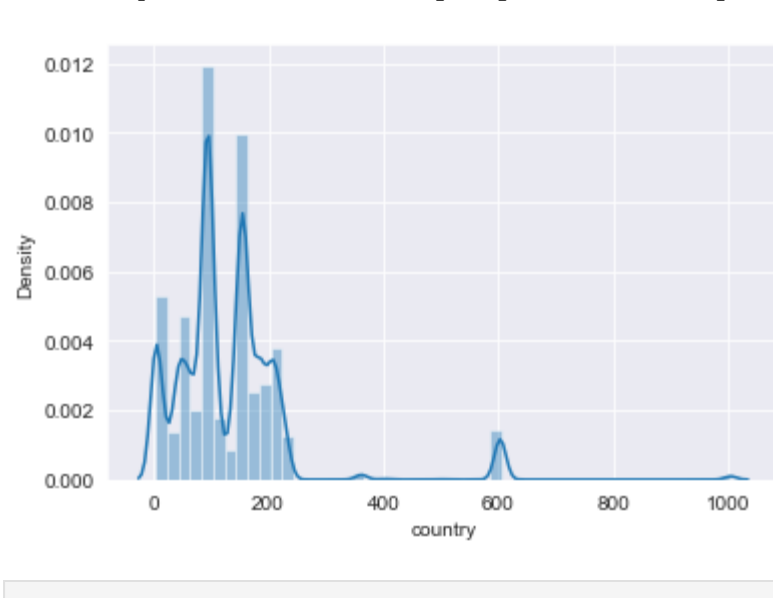
In [20]:
```python
sns.displot(data, x = 'country',kind = 'kde',fill='tree',palette='colorblind',color='g')
sns.set_style("darkgrid")
```



In [21]:
```python
sns.distplot(a=data['country'])
```

```
C:\Users\Admin\anaconda3\lib\site-packages\seaborn\distributions.py:2557: FutureWarning: `distplot` is a deprec
ated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure
-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

Out[21]:
```
<AxesSubplot:xlabel='country', ylabel='Density'>
```



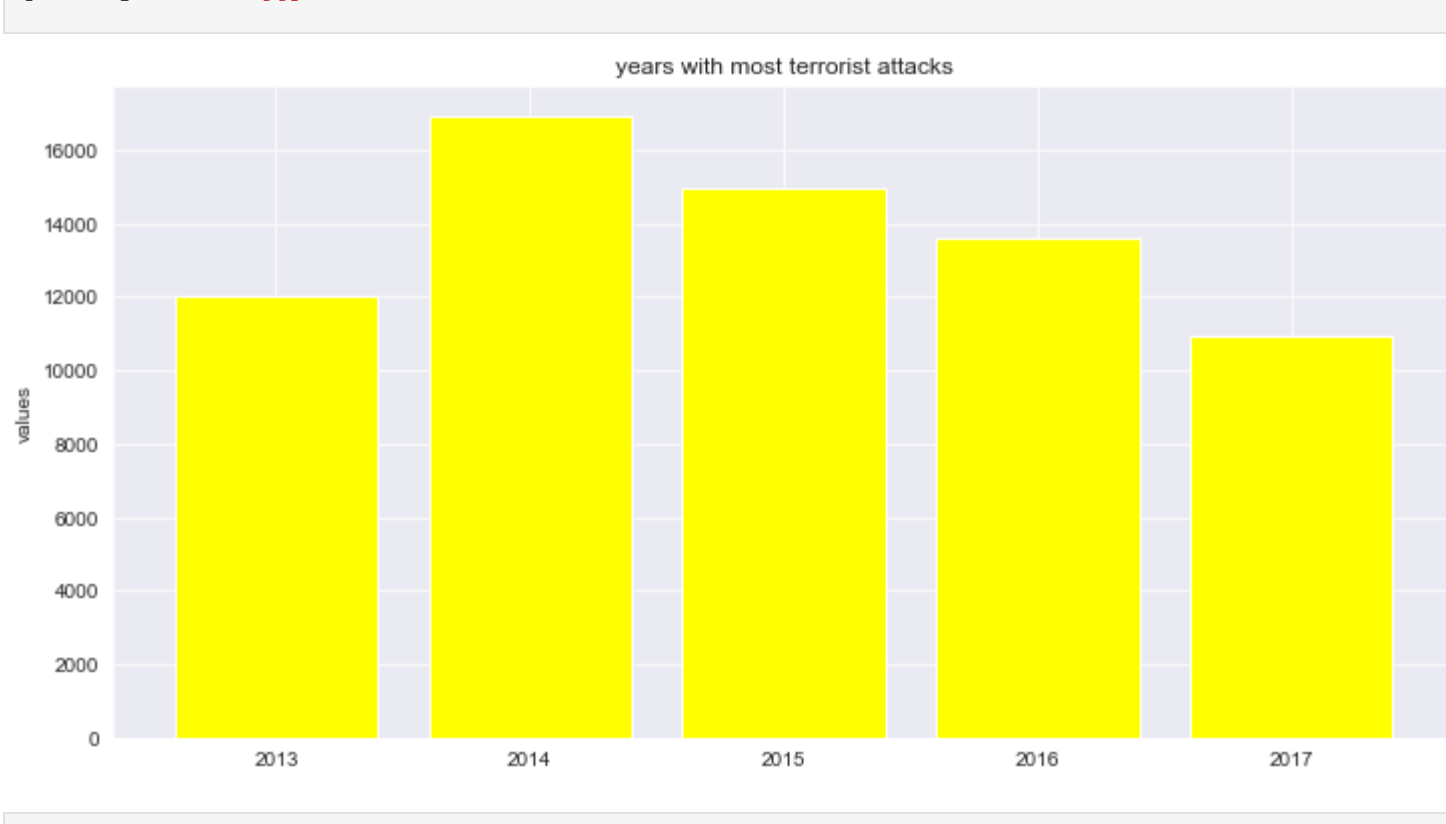
In [22]:
```python
data.iyear.value_counts().head(10)
```

Out[22]:
```
2014    16903
2015    14965
2016    13587
2013    12036
2017    10900
2012     8522
2011     5076
1992     5071
2010     4826
2008     4805
Name: iyear, dtype: int64
```

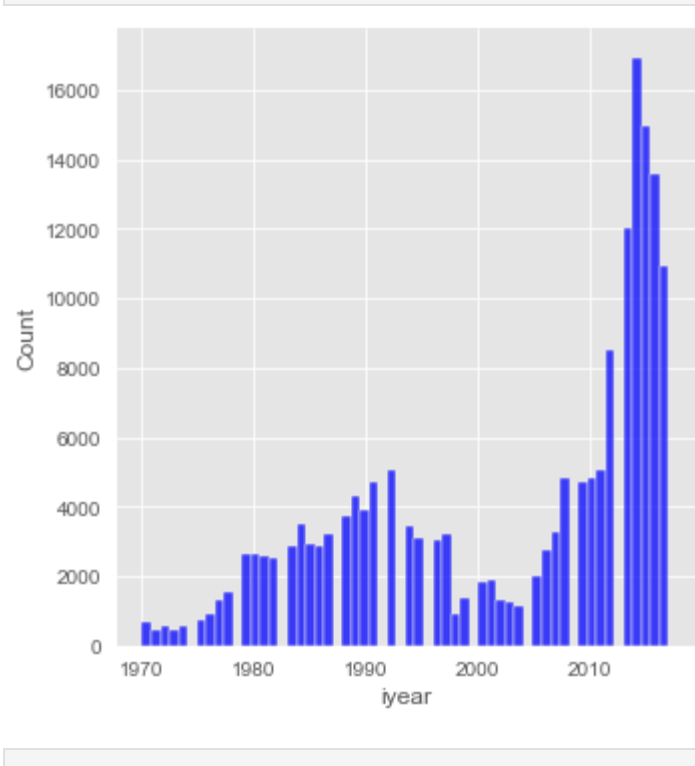
In [23]:
```python
years = list((data.iyear.value_counts().head(10)).index)
print("Years which had most terrorist attacks in decreasing order :\n",years)
```

```
Years which had most terrorist attacks in decreasing order :
 [2014, 2015, 2016, 2013, 2017, 2012, 2011, 1992, 2010, 2008]
```

In [24]:
```python
year = data.iyear.value_counts().head(5)
plt.figure(figsize=(12,6))
plt.bar(year.index,year.values,color='yellow')
plt.title("years with most terrorist attacks")
plt.xlabel("year")
plt.ylabel("values")
plt.show()
plt.style.use("ggplot")
```

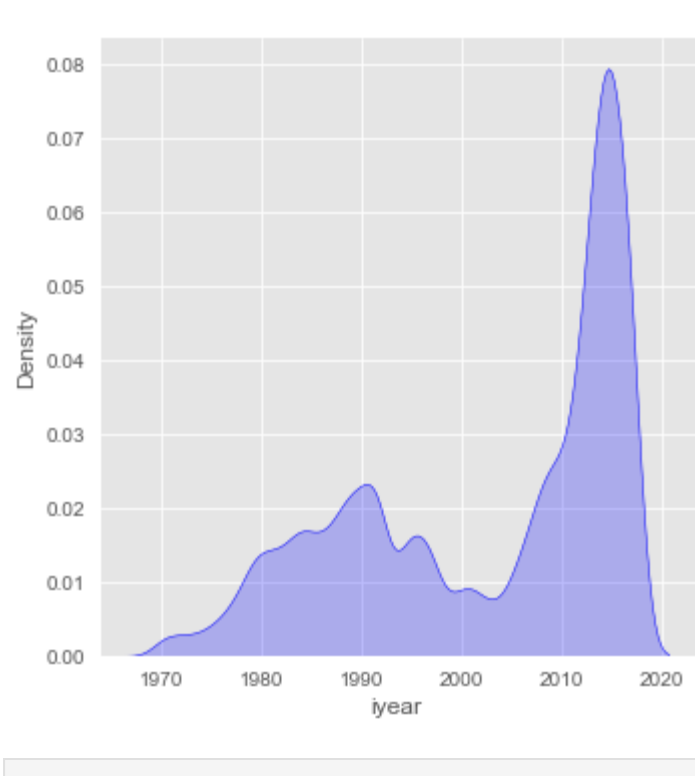


In [25]:
```python
sns.displot(data,x="iyear",kind="hist",palette="colorblind",color='b')
plt.style.use("ggplot")
```



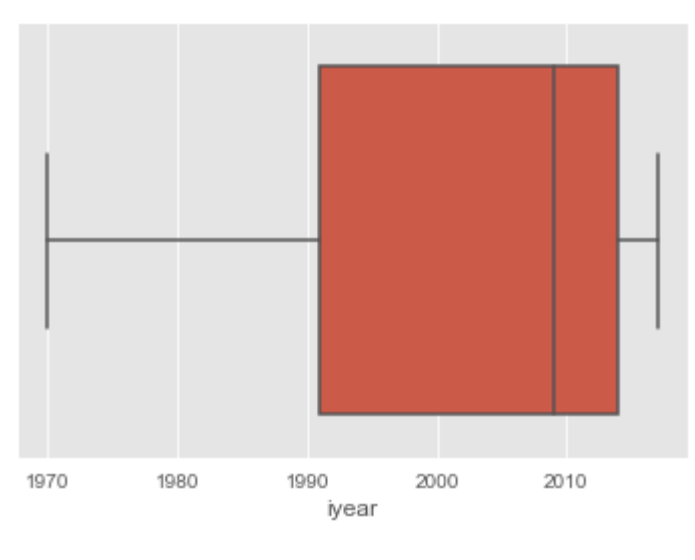
In [26]:
```python
sns.displot(data,x="iyear",kind="kde",fill = "tree" ,palette="colorblind",color='b')
```

Out[26]:
```
<seaborn.axisgrid.FacetGrid at 0x1c79e30da00>
```



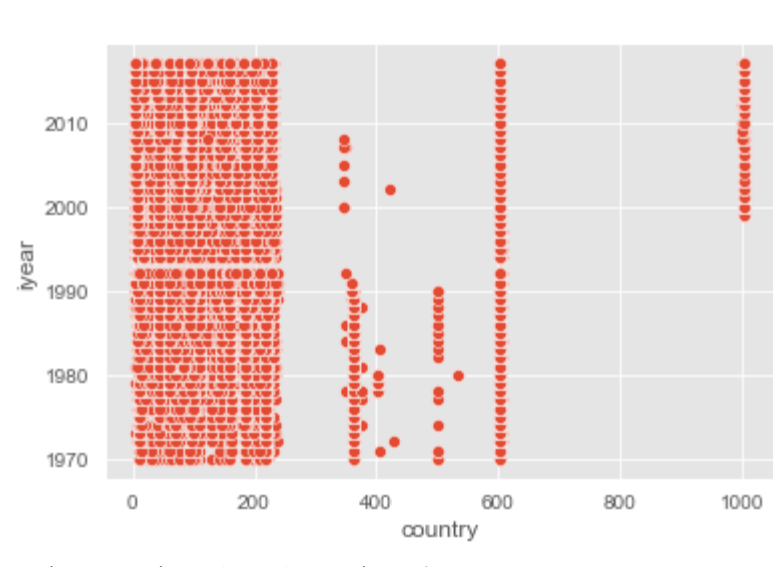
In [27]:
```python
sns.boxplot(x = data['iyear'])
```

Out[27]:
```
<AxesSubplot:xlabel='iyear'>
```



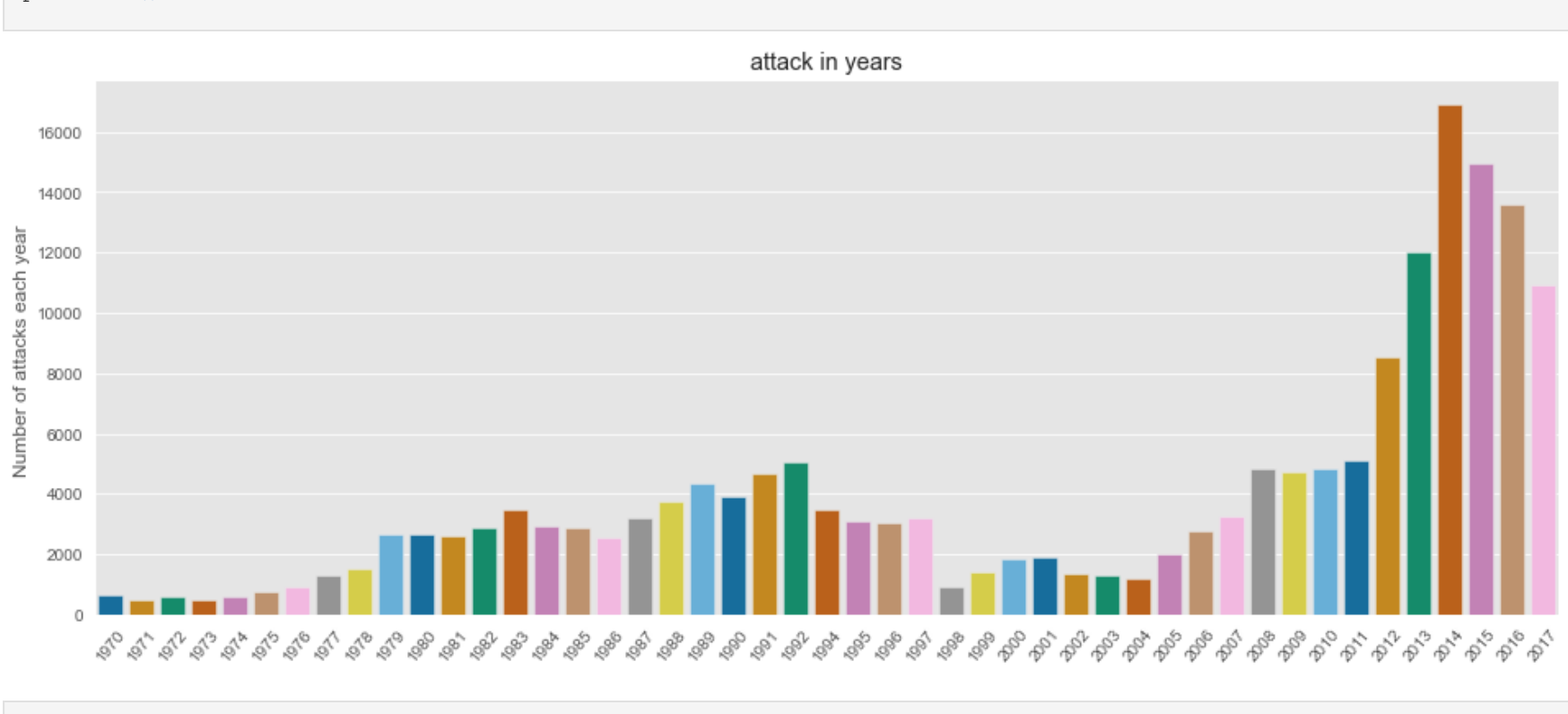
In [28]:
```python
sns.scatterplot(y=data['iyear'],x=data["country"])
plt.figure(figsize=(2,2))
```

Out[28]:
```
<Figure size 144x144 with 0 Axes>
```



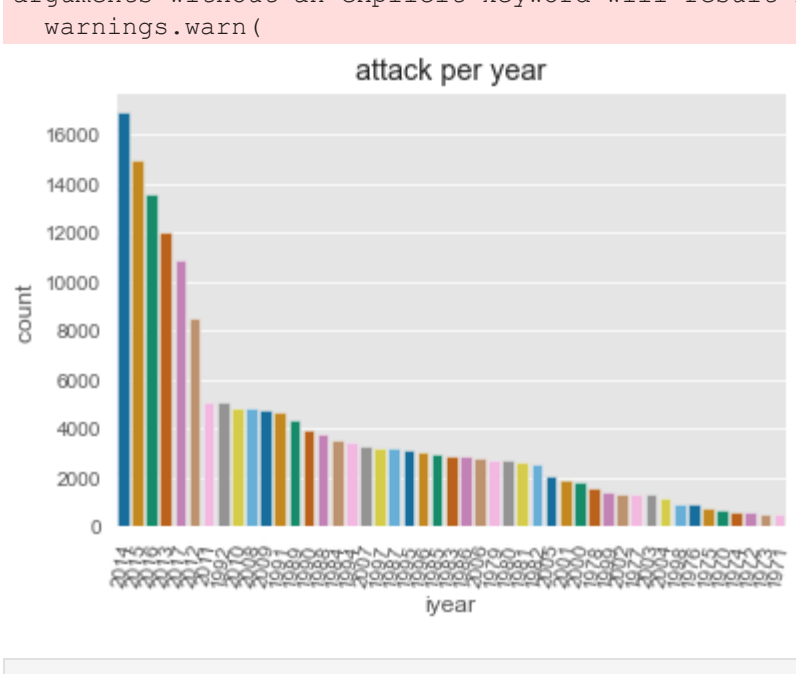
```
<Figure size 144x144 with 0 Axes>
```

In [29]:
```python
year = data['iyear'].unique()
years_count = data['iyear'].value_counts(dropna=False).sort_index()
plt.figure(figsize=(16,6))
sns.barplot(x=year , y = years_count, palette = 'colorblind')
plt.xticks(rotation=50)

plt.ylabel("Number of attacks each year ")

plt.title("attack in years")
plt.show()
```



In [30]:
```python
#plt.subplots(figsize=(18,8))
sns.countplot(data['iyear'],order=data['iyear'].value_counts().index,palette='colorblind')
plt.xticks(rotation=80)

plt.ylabel("count ")

plt.title("attack per year")
plt.show()
```

```
C:\Users\Admin\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variabl
e as a keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other
arguments without an explicit keyword will result in an error or misinterpretation.
  warnings.warn(
```



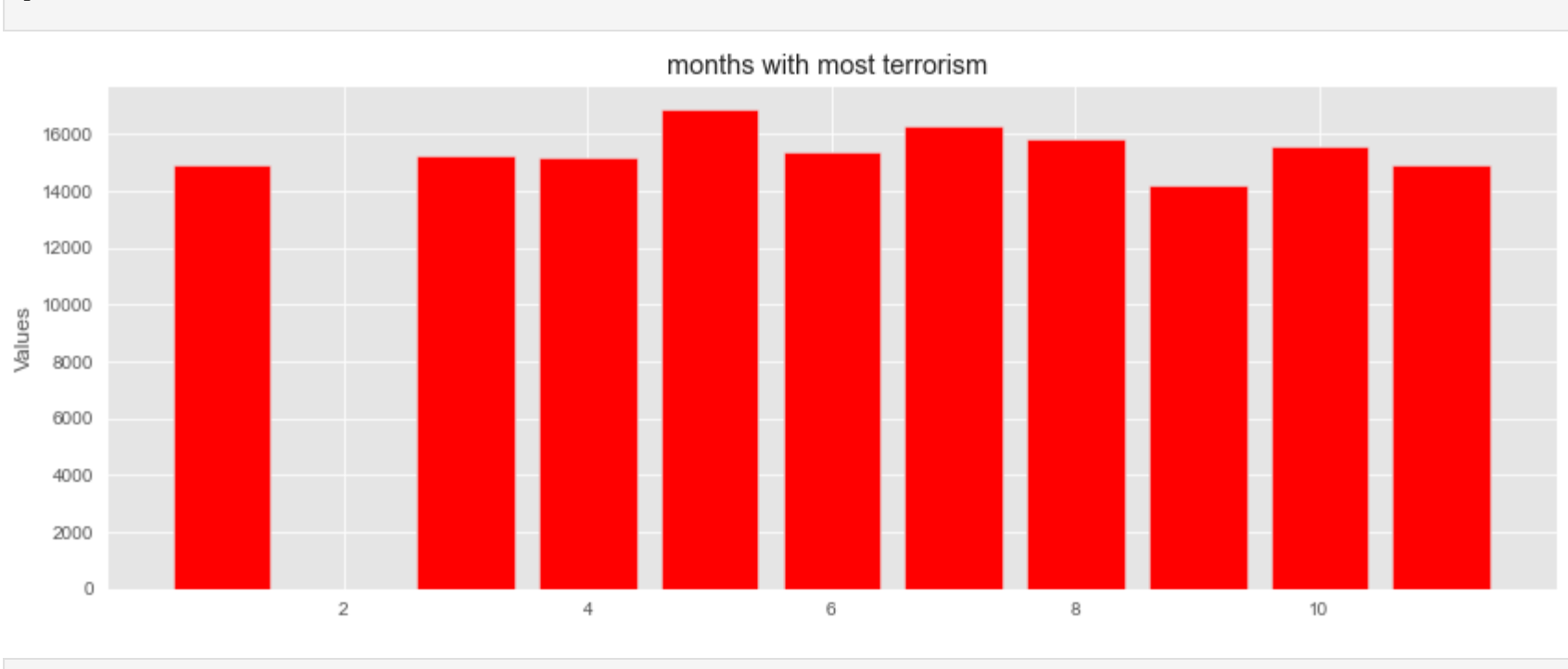
In [31]:
```python
data.imonth.value_counts().head(10)
```

Out[31]:
```
5     16875
7     16268
8     15800
10    15563
6     15359
3     15257
4     15152
1     14936
11    14906
9     14180
Name: imonth, dtype: int64
```

In [32]:
```python
month_with_most_terrorism = data.imonth.value_counts().head(10)
months=list(month_with_most_terrorism.index)
print("month recording most terrorsim:\n",months)
```

```
month recording most terrorsim:
 [5, 7, 8, 10, 6, 3, 4, 1, 11, 9]
```

In [33]:
```python
fig, ax = plt.subplots(figsize=(14,5))
ax.bar(month_with_most_terrorism.index,month_with_most_terrorism.values,color='r')
plt.title("months with most terrorism ")
#plt.xlabel('month no')
plt.ylabel('Values')
plt.show()
```



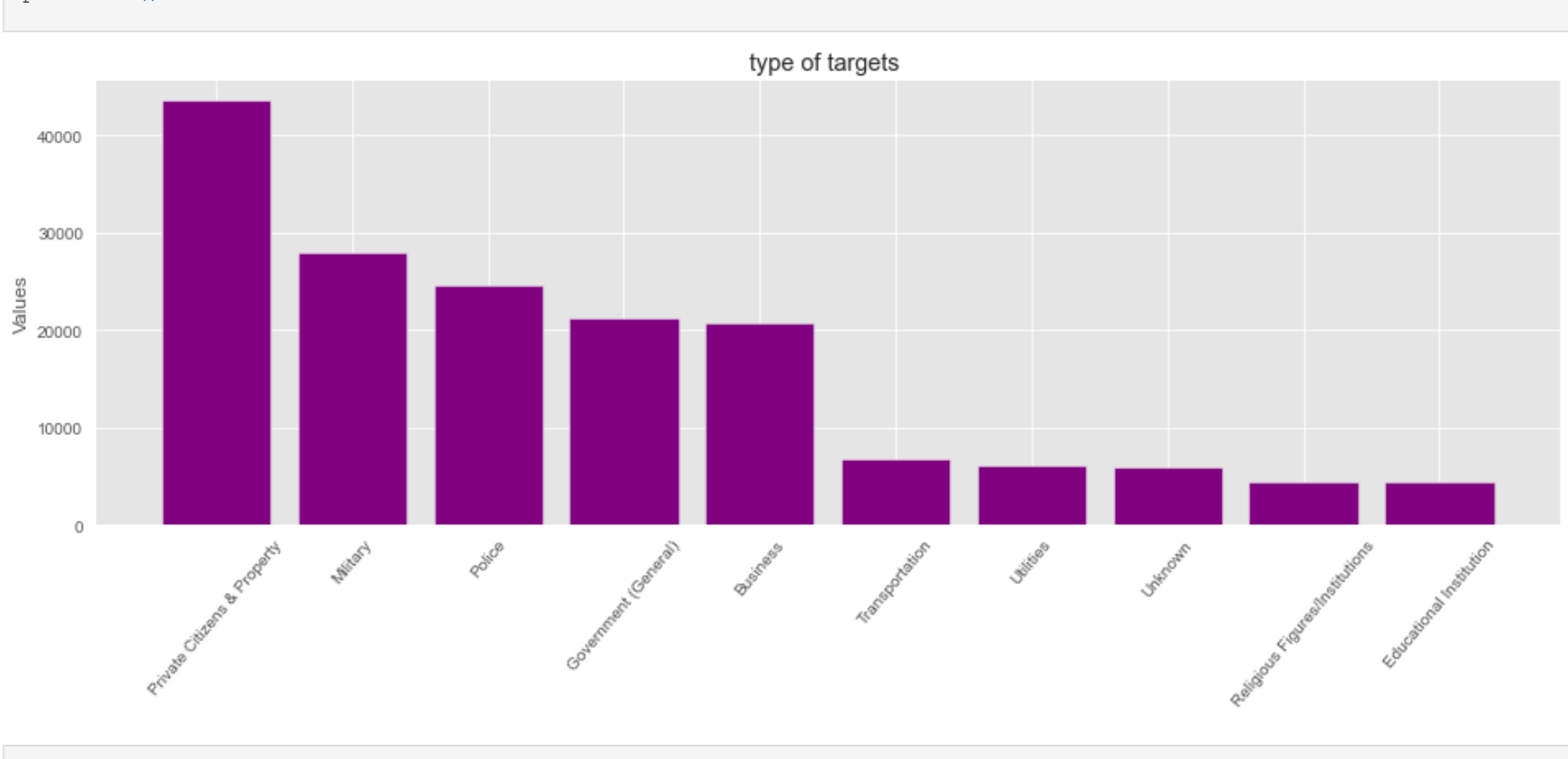
In [34]:
```python
data.targtype1_txt.value_counts().head(10)
```

Out[34]:
```
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
Name: targtype1_txt, dtype: int64
```

In [35]:
```python
targets_with_max_attacks = data.targtype1_txt.value_counts().head(10)
targetset = list(targets_with_max_attacks.index)
print("targets with max attacks:\n",targetset)
```

```
targets with max attacks:
 ['Private Citizens & Property', 'Military', 'Police', 'Government (General)', 'Business', 'Transportation', 'U
tilities', 'Unknown', 'Religious Figures/Institutions', 'Educational Institution']
```

In [36]:
```python
target = data['targtype1_txt'].value_counts().head(10)
fig, ax = plt.subplots(figsize=(16,5))
ax.bar(target.index,target.values,color='purple')
plt.xticks(rotation=50)
plt.title("type of targets ")
#plt.xlabel('targets')
plt.ylabel('Values')
plt.show()
```



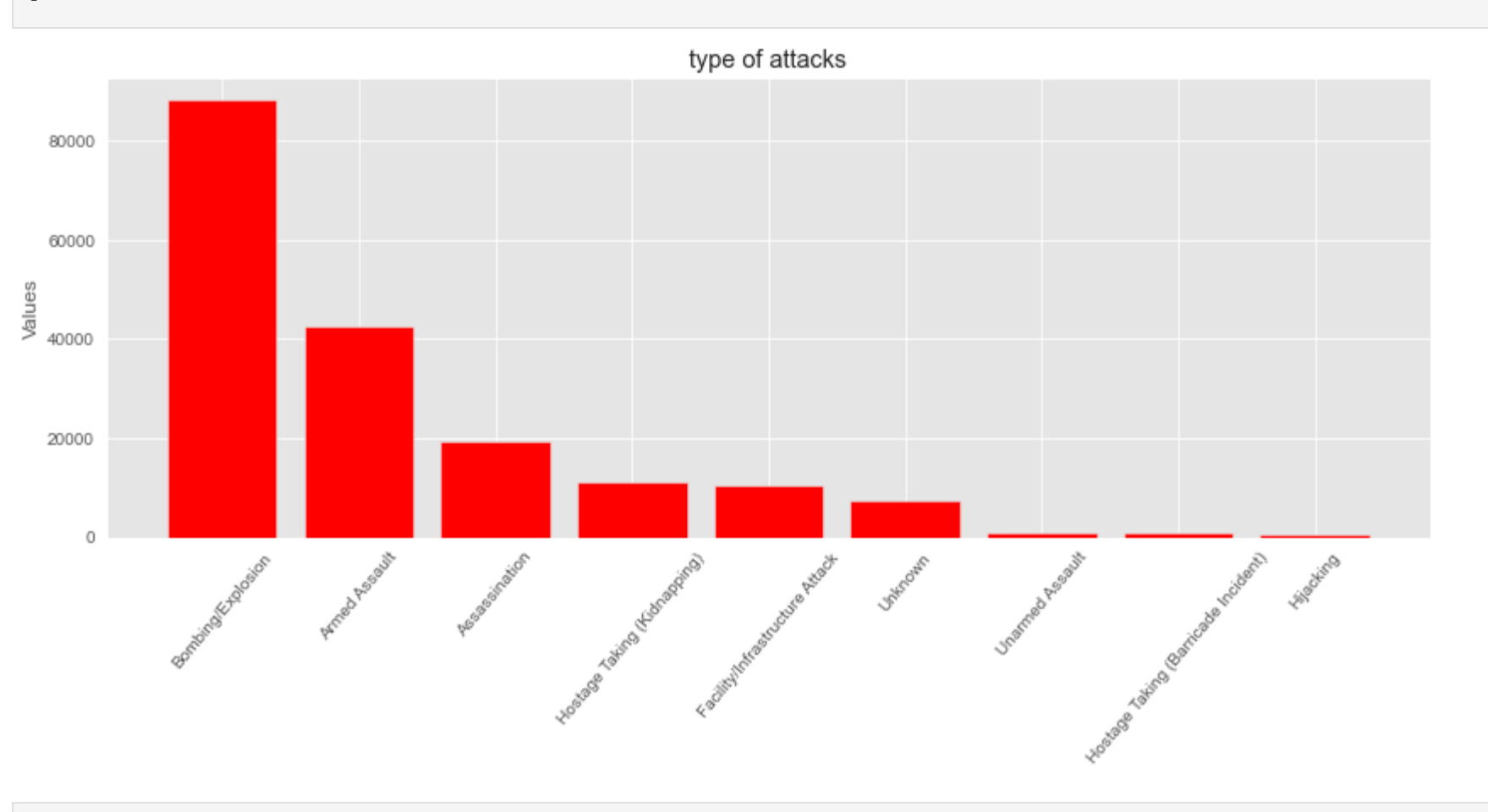
In [37]:
```python
data['attacktype1_txt'].value_counts().head(10)
```

Out[37]:
```
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 [38]:
```
attack_types=data.attacktype1_txt.value_counts().head(10)
attack_type = list(attack_types.index)
print("types of attacks:\n",attack_type)
```

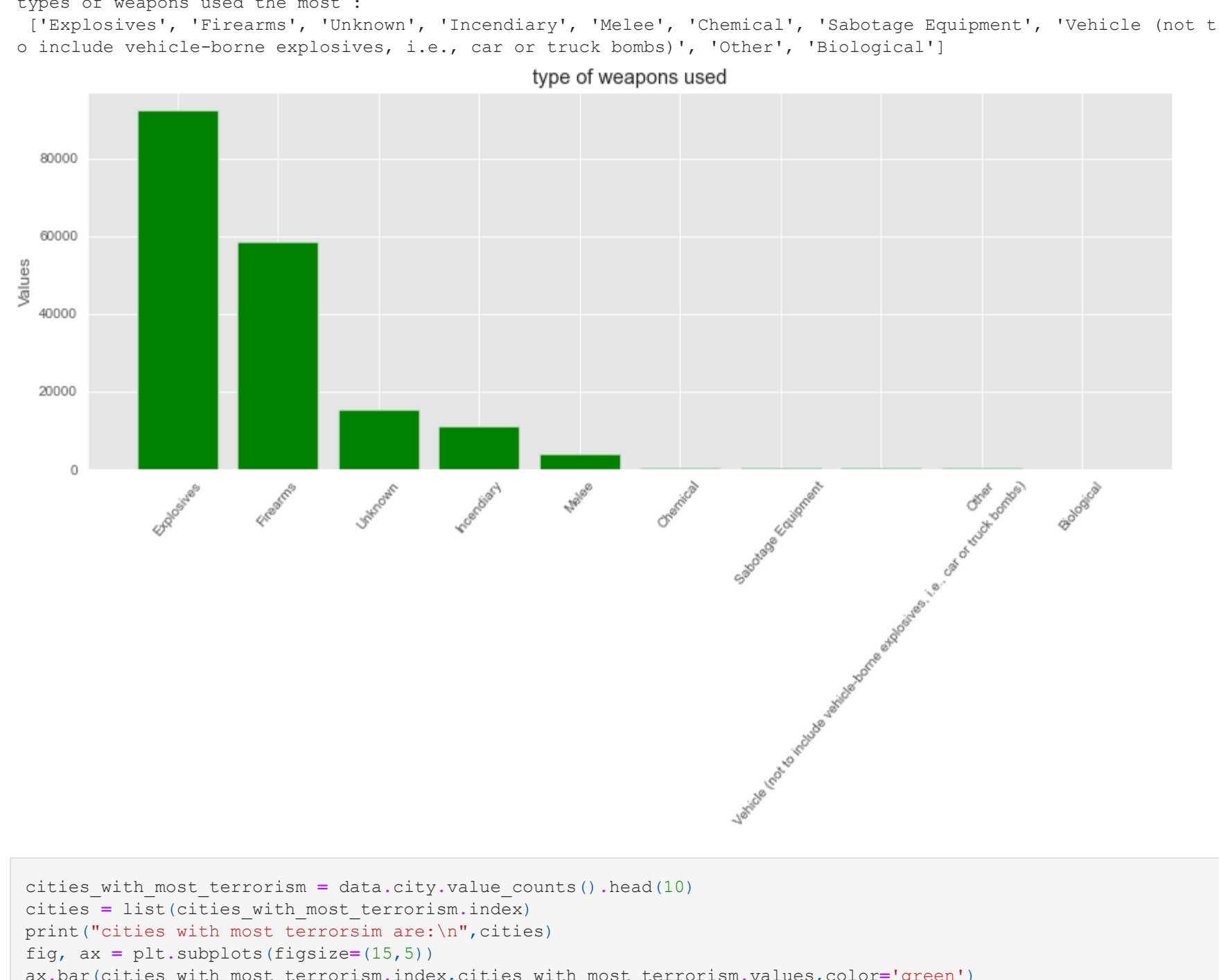
```
types of attacks:
 ['Bombing/Explosion', 'Armed Assault', 'Assassination', 'Hostage Taking (Kidnapping)', 'Facility/Infrastructur
e Attack', 'Unknown', 'Unarmed Assault', 'Hostage Taking (Barricade Incident)', 'Hijacking']
```

In [39]:
```
fig, ax = plt.subplots(figsize=(14,5))
ax.bar(attack_types.index,attack_types.values,color='r')
plt.xticks(rotation=50)
plt.title("type of attacks")
#plt.xlabel('attacks')
plt.ylabel('Values')
plt.show()
```



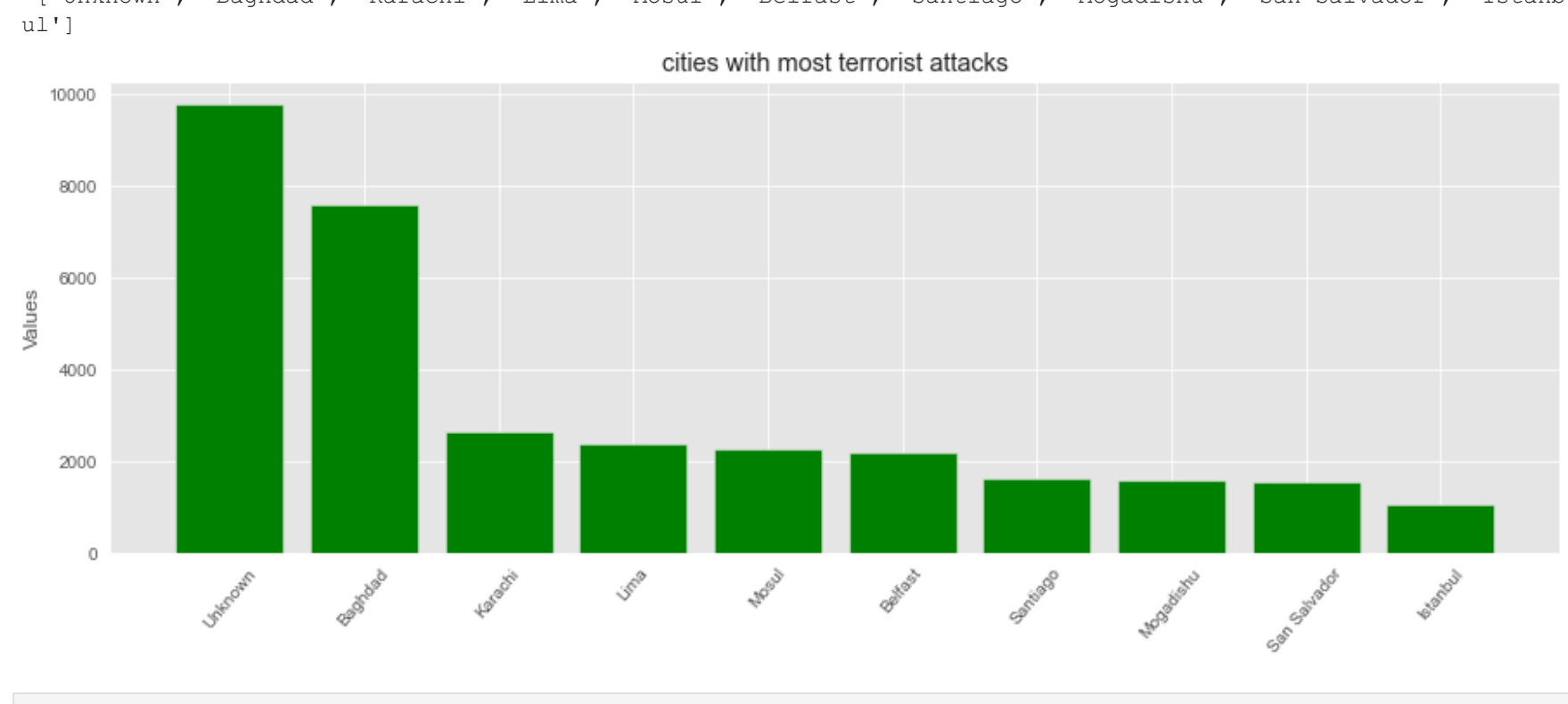
In [40]:
```
weapon_type=data['weaptype1_txt'].value_counts().head(10)
weapon = list(weapon_type.index)
print("types of weapons used the most :\n",weapon)
fig, ax = plt.subplots(figsize=(14,5))
ax.bar(weapon_type.index,weapon_type.values,color='green')
plt.xticks(rotation=50)
plt.title("type of weapons used")
#plt.xlabel('weapons')
plt.ylabel('Values')
plt.show()
```

```
types of weapons used the most :
 ['Explosives', 'Firearms', 'Unknown', 'Incendiary', 'Melee', 'Chemical', 'Sabotage Equipment', 'Vehicle (not t
o include vehicle-borne explosives, i.e., car or truck bombs)', 'Other', 'Biological']
```



In [41]:
```
cities_with_most_terrorism = data.city.value_counts().head(10)
cities = list(cities_with_most_terrorism.index)
print("cities with most terrorsim are:\n",cities)
fig, ax = plt.subplots(figsize=(15,5))
ax.bar(cities_with_most_terrorism.index,cities_with_most_terrorism.values,color='green')
plt.xticks(rotation=50)
plt.title("cities with most terrorist attacks")
#plt.xlabel('cities')
plt.ylabel('Values')
plt.show()
```

```
cities with most terrorsim are:
 ['Unknown', 'Baghdad', 'Karachi', 'Lima', 'Mosul', 'Belfast', 'Santiago', 'Mogadishu', 'San Salvador', 'Istanb
ul']
```



In [ ]:

conclusions

1. Country with most attacks : iraq 2.year with most attacks : 2014 3.month with most attacks:5 4.mostly targeted section: private citizes and prop 5.mostly used attack type : bomb/exploxion 6.weapon mostly use: explosive 7.city with most terrorism