EXPLORATORY DATA ANALYSIS ON DATASET TERRORISM

By

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In [52]:
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

Importing the dataset

In [53]:
```python
data=pd.read_csv("C:\\Users\\kevan\\Desktop\\globalterrorismdb_0718dist.csv")
```

```
C:\Users\kevan\anaconda3\lib\site-packages\IPython\core\interactiveshell.py:3165: DtypeWarning: Columns (4,6,31,33,61,62,63,76,79,90,92,94,96,114,115,121) have mixed types.Specify dtype op
tion on import or set low_memory=False.
  has_raised = await self.run_ast_nodes(code_ast.body, cell_name,
```

Printing the first five rows of the dataset

In [54]:
```python
data.head()
```

Out[54]:

	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
0	197000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN	NaN	PGIS	0	0	0	0	NaN
1	197000000002	1970	0	0	NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN	NaN	PGIS	0	1	1	1	NaN
2	197001000001	1970	1	0	NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN
3	197001000002	1970	1	0	NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN
4	197001000003	1970	1	0	NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN

5 rows × 135 columns

Number of rows and columns in the dataset

In [55]:
```python
data.shape
```

Out[55]:
```
(181691, 135)
```

Checking if any null values are present

In [56]:
```python
data.isnull().sum()
```

Out[56]:
```
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
```

To check any duplicate values

In [57]:
```python
ndf=data.drop_duplicates()
ndf
```

Out[57]:

	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
0	197000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN	NaN	PGIS	0	0	0	0	NaN
1	197000000002	1970	0	0	NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN	NaN	PGIS	0	1	1	1	NaN
2	197001000001	1970	1	0	NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN
3	197001000002	1970	1	0	NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN
4	197001000003	1970	1	0	NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN	NaN	PGIS	-9	-9	1	1	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181686	201712310022	2017	12	31	NaN	0	NaN	182	Somalia	11	...	NaN	"Somalia: Al-Shabaab Militants Attack Army Che...	"Highlights: Somalia Daily Media Highlights 2 ...	"Highlights: Somalia Daily Media Highlights 1 ...	START Primary Collection	0	0	0	0	NaN
181687	201712310029	2017	12	31	NaN	0	NaN	200	Syria	10	...	NaN	"Putin's 'victory' in Syria has turned into a ...	"Two Russian soldiers killed at Hmeymim base i...	"Two Russian servicemen killed in Syria mortar...	START Primary Collection	-9	-9	1	1	NaN
181688	201712310030	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Maguindanao clashes trap tribe members," Phil...	NaN	NaN	START Primary Collection	0	0	0	0	NaN
181689	201712310031	2017	12	31	NaN	0	NaN	92	India	6	...	NaN	"Trader escapes grenade attack in Imphal," Bus...	NaN	NaN	START Primary Collection	-9	-9	0	-9	NaN
181690	201712310032	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Security tightened in Cotabato following IED ...	"Security tightened in Cotabato City," Manila ...	NaN	START Primary Collection	-9	-9	0	-9	NaN

181691 rows × 135 columns

Rename the columns

In [58]:
```python
ndf.rename(columns={'eventid':'id','iyear':'year','imonth':'month','iday':'day','approxdate':'date','nkill':'killed','nwound':'wounded','weaptype1_txt':'weapon','provstate':'state','targty
```

In [59]:
```python
ndf.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 181691 entries, 0 to 181690
Columns: 135 entries, id to related
dtypes: float64(55), int64(22), object(58)
memory usage: 188.5+ MB
```

To get the required columns

In [60]:
```python
rdf=ndf.reindex(columns=['year','month','day','country_txt','region','killed','wounded','weapon','state','target','attack'])
rdf.head()
```

Out[60]:

	year	month	day	country_txt	region	killed	wounded	weapon	state	target	attack
0	1970	7	2	Dominican Republic	2	1.0	0.0	Unknown	NaN	Private Citizens & Property	Assassination
1	1970	0	0	Mexico	1	0.0	0.0	Unknown	Federal	Government (Diplomatic)	Hostage Taking (Kidnapping)
2	1970	1	0	Philippines	5	1.0	0.0	Unknown	Tarlac	Journalists & Media	Assassination
3	1970	1	0	Greece	8	NaN	NaN	Explosives	Attica	Government (Diplomatic)	Bombing/Explosion
4	1970	1	0	Japan	4	NaN	NaN	Incendiary	Fukouka	Government (Diplomatic)	Facility/Infrastructure Attack

Top 15 countries affected

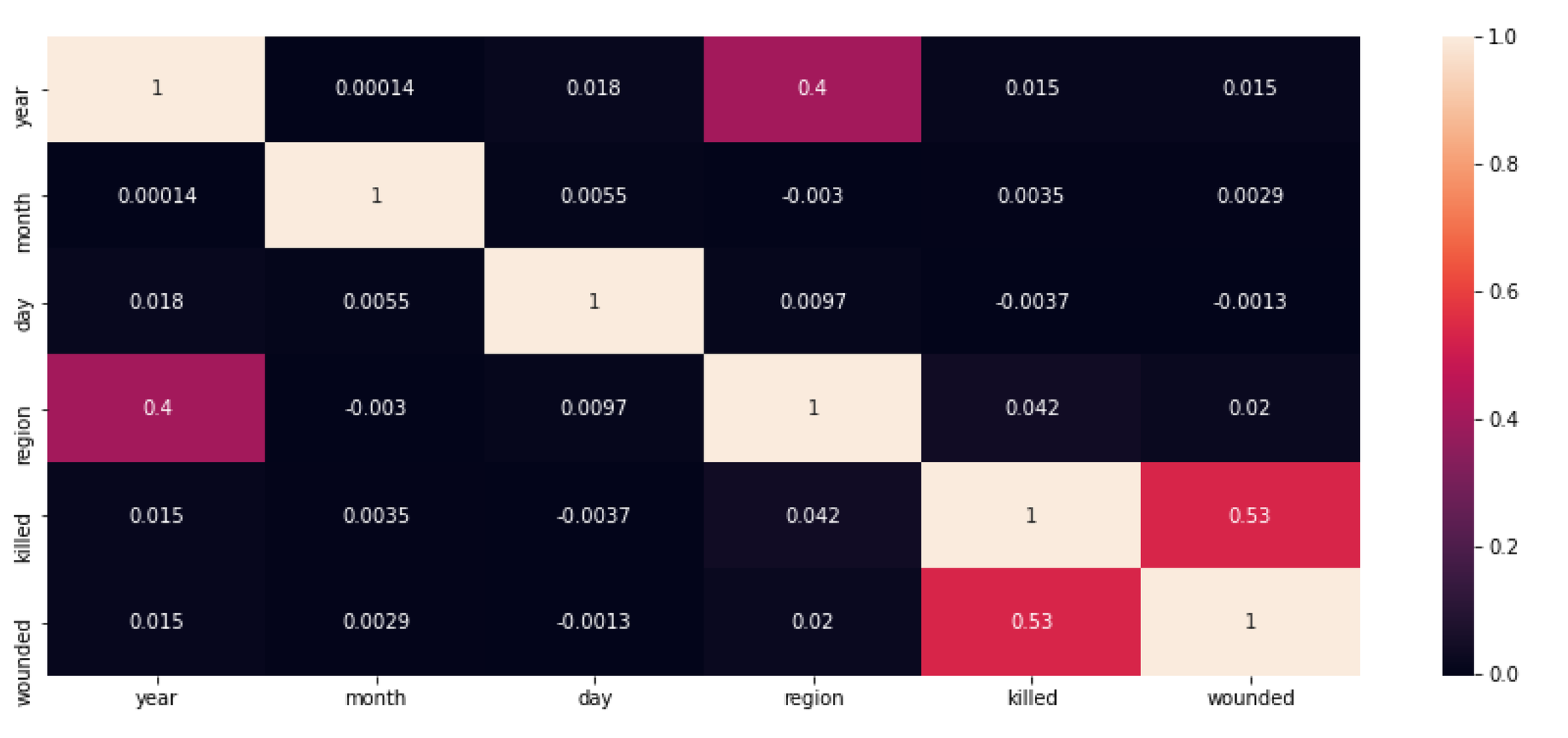
In [61]:
```python
c_count=ndf['country_txt'].value_counts()
c_count10=c_count[:15]
print(c_count10)
```

```
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
Name: country_txt, dtype: int64
```

Heatmap

In [62]:
```python
fig=plt.figure(figsize=(15,6))
sns.heatmap(rdf.corr(),annot= True)
```

Out[62]:
```
<AxesSubplot:>
```



To print Most affected states

In [63]:
```python
rdf['state'].value_counts().head()
```

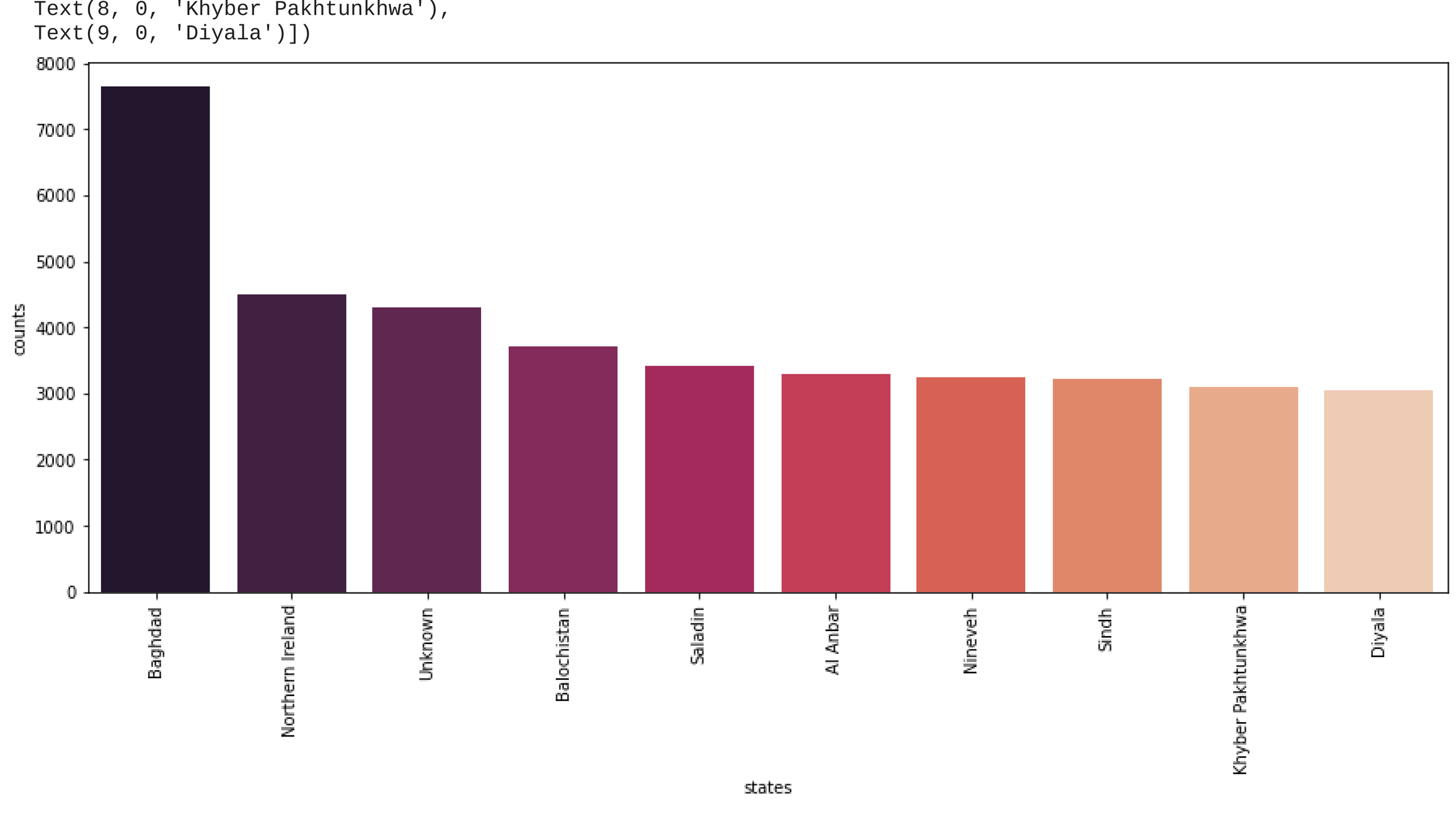
Out[63]:
```
Baghdad             7645
Northern Ireland    4498
Unknown             4290
Balochistan         3710
Saladin             3411
Name: state, dtype: int64
```

Countplot to show the most affected states

In [64]:
```python
fig=plt.figure(figsize=(15,6))
sns.barplot(rdf['state'].value_counts()[:10].index,rdf['state'].value_counts()[:10].values,palette='rocket')
plt.xlabel('states')
plt.ylabel('counts')
plt.xticks(rotation=90)
```

```
C:\Users\kevan\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variables as keyword args: x, y. From version 0.12, the only valid positional argume
nt will be `data`, and passing other arguments without an explicit keyword will result in an error or misinterpretation.
  warnings.warn(
```

Out[64]:
```
(array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9]),
 [Text(0, 0, 'Baghdad'),
  Text(1, 0, 'Northern Ireland'),
  Text(2, 0, 'Unknown'),
  Text(3, 0, 'Balochistan'),
  Text(4, 0, 'Saladin'),
  Text(5, 0, 'Al Anbar'),
  Text(6, 0, 'Nineveh'),
  Text(7, 0, 'Sindh'),
  Text(8, 0, 'Khyber Pakhtunkhwa'),
  Text(9, 0, 'Diyala')])
```

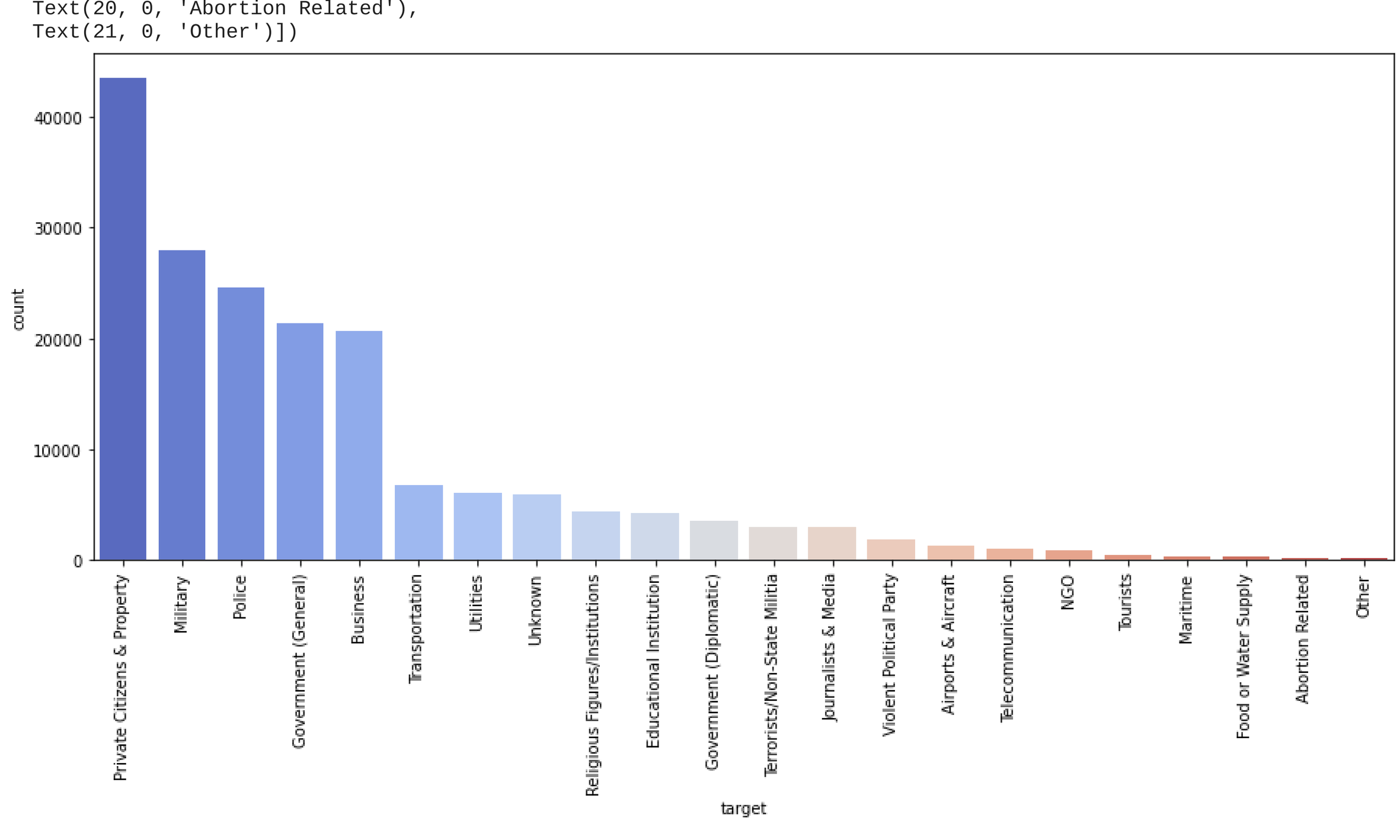


Type of the target

In [65]:
```python
fig=plt.figure(figsize=(15,6))
sns.countplot('target',data=rdf,order=rdf['target'].value_counts().index,palette='coolwarm')
plt.xticks(rotation=90)
```

```
C:\Users\kevan\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable 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(
```

Out[65]:
```
(array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16,
        17, 18, 19, 20, 21]),
 [Text(0, 0, 'Private Citizens & Property'),
  Text(1, 0, 'Military'),
  Text(2, 0, 'Police'),
  Text(3, 0, 'Government (General)'),
  Text(4, 0, 'Business'),
  Text(5, 0, 'Transportation'),
  Text(6, 0, 'Utilities'),
  Text(7, 0, 'Unknown'),
  Text(8, 0, 'Religious Figures/Institutions'),
  Text(9, 0, 'Educational Institution'),
  Text(10, 0, 'Government (Diplomatic)'),
  Text(11, 0, 'Terrorists/Non-State Militia'),
  Text(12, 0, 'Journalists & Media'),
  Text(13, 0, 'Violent Political Party'),
  Text(14, 0, 'Airports & Aircraft'),
  Text(15, 0, 'Telecommunication'),
  Text(16, 0, 'NGO'),
  Text(17, 0, 'Tourists'),
  Text(18, 0, 'Maritime'),
  Text(19, 0, 'Food or Water Supply'),
  Text(20, 0, 'Abortion Related'),
  Text(21, 0, 'Other')])
```

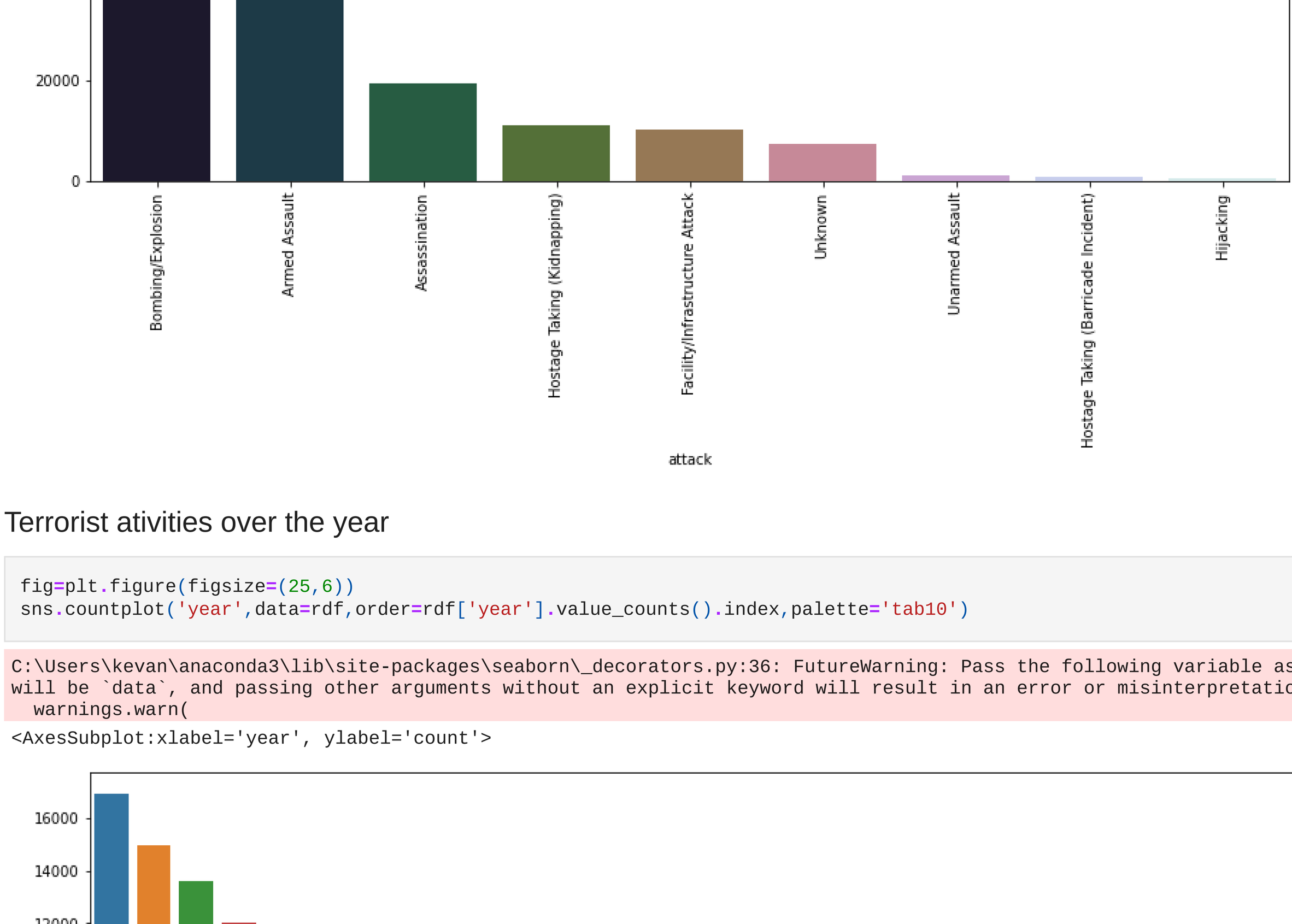


Most type of attack used

In [66]:
```python
fig=plt.figure(figsize=(15,6))
sns.countplot('attack',data=rdf,order=rdf['attack'].value_counts().index,palette='cubehelix')
plt.xticks(rotation=90)
```

```
C:\Users\kevan\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable 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(
```

Out[66]:
```
(array([0, 1, 2, 3, 4, 5, 6, 7, 8]),
 [Text(0, 0, 'Bombing/Explosion'),
  Text(1, 0, 'Armed Assault'),
  Text(2, 0, 'Assassination'),
  Text(3, 0, 'Hostage Taking (Kidnapping)'),
  Text(4, 0, 'Facility/Infrastructure Attack'),
  Text(5, 0, 'Unknown'),
  Text(6, 0, 'Unarmed Assault'),
  Text(7, 0, 'Hostage Taking (Barricade Incident)'),
  Text(8, 0, 'Hijacking')])
```

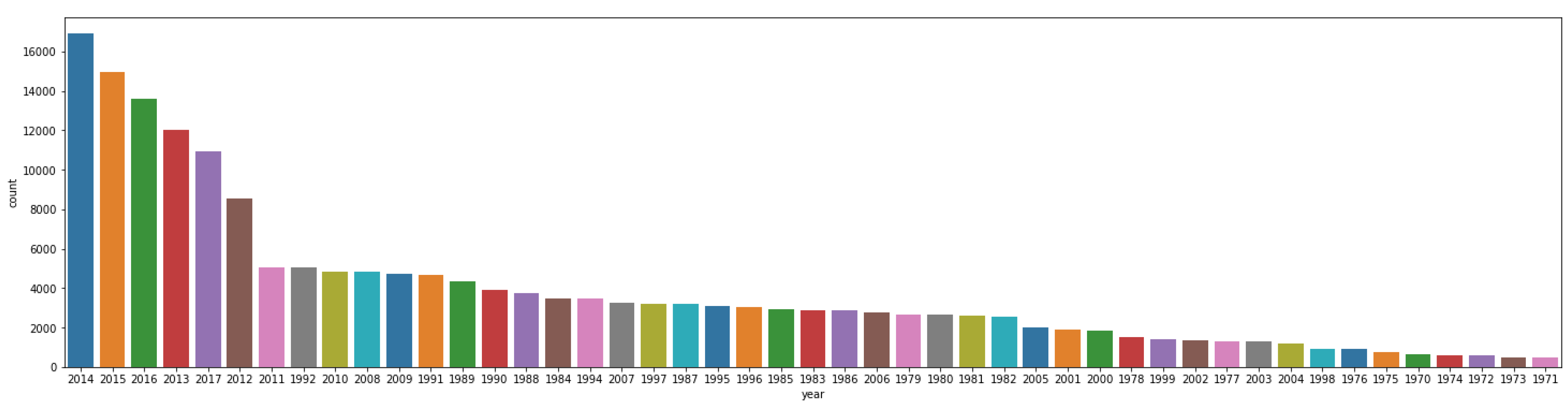


Terrorist ativities over the year

In [67]:
```python
fig=plt.figure(figsize=(25,6))
sns.countplot('year',data=rdf,order=rdf['year'].value_counts().index,palette='tab10')
```

```
C:\Users\kevan\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable 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(
```

Out[67]:
```
<AxesSubplot:xlabel='year', ylabel='count'>
```



In [ ]: