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# # EDA

#imports

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from mpl_toolkits.basemap import Basemap

get_ipython().magic('matplotlib inline')

# Loading data into a dataframe
df= pd.read_csv('indiadata.csv')

df.head(3)

df.loc[:,('weapon Type')][df['weapon Type']=='vehicle
(not to include vehicle-borne explosives, i.e., car
or truck bombs)']= 'vechicle only'

df.info()

# ## Univariate analysis
# #### 1. Year

#Distribution of attacks in a year

plt.figure(figsize=(10,6))
sns.set_context('poster',font_scale=0.7)
sns.countplot(df['Year'])
plt.title('Attacks In a Year')

# #### 2.City

#total no of differnt cities faced terrorist attacks
len(np.unique(df['City']))

# #### 3. Attack Type

# Counts of differnt type of attacks
plt.figure(figsize=(10,6))
sns.countplot(y=df['attack type'])

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plt.title('Count of Attack Types')
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# ##### 4.Target Type
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# Counts of attacks on Differnt types of targets
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```
plt.figure(figsize=(10,6))
```

```
sns.countplot(y=df['Target Type'])
```

```
plt.title('Count of attacks on various Targets ')
```

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# ##### 5.Weapon Type
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# Counts of weapons used in attacks
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```
plt.figure(figsize=(10,6))
```

```
sns.countplot(y=df['Weapon Type'])
```

```
plt.title('Count of attacks with various Weapons ')
```

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# ##### 6.Terrorist Organisation
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# top 25 terrorist orgainsations
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```
df['Terrorist Organization'].value_counts()[:25]
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# ## Bivariate Analysis
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```
# distribution of differtent types of attacks thought  
the year
```

```
plt.figure(figsize=(15,6))
```

```
sns.countplot(df['Year'],hue=df['attack  
type'],palette='Set1')
```

```
plt.legend(loc='upper left')
```

```
plt.title('Count of different attacks types in years  
' )
```

```
# distribution of differtent types of weapons used  
throught the year
```

```
plt.figure(figsize=(15,6))
```

```
sns.countplot(df['Year'],hue=df['weapon  
Type'],palette='Set2')
```

```
plt.legend(loc='upper left')
```

```
plt.title('Count of different weapons w.r.t Years ')
```

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# # Multivariate analysis on Map

plt.figure(figsize=(10,10))
map = Basemap(projection='mill',
              resolution = 'i',
              llcrnrlon=60, llcrnrlat=6.0,
              urcrnrlon=100, urcrnrlat=36)

map.drawcoastlines()
map.drawcountries()
map.fillcontinents(color = 'white',lake_color='aqua')
map.drawmapboundary(fill_color='aqua')

lont = list(df['longitude'][df['weapon
Type']=='Explosives/Bombs/Dynamite'])
latt = list(df['latitude'][df['weapon
Type']=='Explosives/Bombs/Dynamite'])
xst,yst = map(lont, latt)
p3,=map.plot(xst, yst, 'bo', markersize=5,alpha=0.5)
lons = list(df['longitude'][df['weapon
Type']=='Firearms'])
lats = list(df['latitude'][df['weapon
Type']=='Firearms'])
x,y = map(lons, lats)
p1, =map.plot(x, y, 'yo', markersize=5,alpha=0.5)
lon = list(df['longitude'][df['weapon
Type']=='Melee'])
lat = list(df['latitude'][df['weapon
Type']=='Melee'])
xs,ys = map(lon, lat)
p2,=map.plot(xs, ys, 'ro', markersize=5,alpha=0.5)

plt.legend([p1,p2,p3],['Firearms','Melee','Explosives
/Bombs/Dynamite'],
          bbox_to_anchor=(1, 1),fontsize='xx-small')

plt.title('weapon Type Used')

plt.show()

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#Plot for Attack Type

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sns.set_context('poster', font_scale=1.2)
plt.figure(figsize=(10,10))
m =
Basemap(width=5000000,height=5000000,projection='lcc'
,

resolution=None,lat_1=20,lat_2=10,lat_0=29
,lon_0=82.5)
m.bluemarble()

lons = list(df['longitude'][df['attack
type']=='Bombing/Explosion'])
lats = list(df['latitude'][df['attack
type']=='Bombing/Explosion'])
x,y = map(lons, lats)
p0,=map.plot(x, y, 'bo', markersize=5)
lon = list(df['longitude'][df['attack
type']=='Melee'])
lat = list(df['latitude'][df['attack
type']=='Melee'])
xs,ys = map(lon, lat)
p1,=map.plot(xs, ys, 'go', markersize=5)
lons = list(df['longitude'][df['attack type']=='Armed
Assault'])
lats = list(df['latitude'][df['attack type']=='Armed
Assault'])
x,y = map(lons, lats)
p2 ,=map.plot(x, y, 'yo', markersize=5)
lons = list(df['longitude'][df['attack
type']=='Hostage Taking (Kidnapping)'])
lats = list(df['latitude'][df['attack
type']=='Hostage Taking (Kidnapping)'])
x,y = map(lons, lats)
p3 ,=map.plot(x, y, 'ro', markersize=5,alpha=0.5)


plt.legend([p2, p0,p3,p1], ['Armed Assault',
'Bombing/Explosion', "Hostage Taking
(Kidnapping)",'Melee'],
           fontsize='xx-small', bbox_to_anchor=(1.4,
1))
plt.title('TYPE OF ATTACKS')
plt.show()

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#Plot for Territory
sns.set_context('poster',font_scale=1)
plt.figure(figsize=(10,10),dpi=500)
map = Basemap(projection='mill',
               resolution = 'i',
               llcrnrlon=60, llcrnrlat=6.0,
               urcrnrlon=100, urcrnrlat=36)

map.drawcoastlines()
map.drawcountries()

map.fillcontinents(color =
'#FFFF00',lake_color='aqua')
map.drawmapboundary(fill_color='aqua')

lons = list(df['longitude'][df['Terrorist
Organization']=='Lashkar-e-Taiba (LeT)'])
lats = list(df['latitude'][df['Terrorist
Organization']=='Lashkar-e-Taiba (LeT)'])
x,y = map(lons, lats)
p3,=map.plot(x, y, 'bo', markersize=5)
lon = list(df['longitude'][df['Terrorist
Organization']=='Communist Party of India - Maoist
(CPI-Maoist)'])
lat = list(df['latitude'][df['Terrorist
Organization']=='Communist Party of India - Maoist
(CPI-Maoist)'])
xs,ys = map(lon, lat)
p2,=map.plot(xs, ys, 'go', markersize=5)

lont = list(df['longitude'][df['Terrorist
Organization']=='Indian Mujahideen'])
latt = list(df['latitude'][df['Terrorist
Organization']=='Indian Mujahideen'])
xst,yst = map(lont, latt)
p1,=map.plot(xst, yst, 'ro', markersize=8)

lont = list(df['longitude'][df['Terrorist
Organization']=='United Liberation Front of Assam
(ULFA)'])

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latt = list(df['latitude'][df['Terrorist
Organization']=='United Liberation Front of Assam
(ULFA)'])
xst,yst = map(lont, latt)
p4,=map.plot(xst, yst, 'co', markersize=5)
lont = list(df['longitude'][df['Terrorist
Organization']=='Hizbul Mujahideen (HM)'])
latt = list(df['latitude'][df['Terrorist
Organization']=='Hizbul Mujahideen (HM)'])
xst,yst = map(lont, latt)
p5,=map.plot(xst, yst, 'mo',
markersize=4.5,alpha=0.5)
plt.legend([p2, p1,p3,p4,p5],
            ['Communist Party of India - Maoist (CPI-
Maoist)', 'Indian Mujahideen', 'Lashkar-e-Taiba
(LeT)',
            'United Liberation Front of Assam
(ULFA)', 'Hizbul Mujahideen
(HM)'],bbox_to_anchor=(1.05, 1),fontsize='xx-small')
plt.title('TERRITORY of TERRORIST GROUPS')
plt.show()

```