Fatalities in the Israeli-Palestinian

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The Israeli-Palestinian conflict dates back to the end of the 19th century. The conflict began with the 1947 United Nations Partition Plan, which sought to divide the British Mandate of Palestine into Arab and Jewish states. The plan was never implemented and provoked the 1947–1949 Palestine War.

The current Israeli-Palestinian status quo began after the 1967 Six-Day War, when Israel militarily occupied the West Bank and Gaza. Israel has launched four military assaults on Gaza: in 2008, 2012, 2014, and 2021.

Renewed violence in the region started on May 6, 2021, when Palestinians protested against an anticipated decision of the Israeli Supreme Court to evict six Palestinian families from Sheikh Jarrah in occupied East Jerusalem.

I had divided this analysis report into 5 diffrent chapters to make it clear to understand.

- Chapter 1: Geospatial Analysis
- Chapter 2: Demographic Analysis
- Chapter 3: Hostilities Participation Analysis
- Chapter 4: Injury Analysis
- Chapter 5: Weapons Used

About Dataset

- This dataset records fatalities in the Israeli-Palestinian conflict from 2000 to 2023.
- This data is Available at Kaggle.com, named Fatalities in the Israeli-Palestinian which is last Updated on 10-10-2023. https://www.kaggle.com/datasets/willianoliveiragibin/fatalities-in-the-israeli-palestinian (https://www.kaggle.com/datasets/willianoliveiragibin/fatalities-in-the-israeli-palestinian)

In [1]:
```
# importing necessary libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
df = pd.read_csv(r"D:\DATA_ANALYSIS\fatalities_isr_pse_conflict_2000_to_2023.csv"
df
```

Out[2]:

	name	date_of_event	age	citizenship	event_location	event_location_district	event_
0	'Abd a-Rahman Suleiman Muhammad Abu Daghash	2023-09-24	32.0	Palestinian	Nur Shams R.C.	Tulkarm	
1	Usayed Farhan Muhammad 'Ali Abu 'Ali	2023-09-24	21.0	Palestinian	Nur Shams R.C.	Tulkarm	
2	'Abdallah 'Imad Sa'ed Abu Hassan	2023-09-22	16.0	Palestinian	Kfar Dan	Jenin	
3	Durgham Muhammad	2023-09-20	19.0	Palestinian	'Aqbat Jaber	Jericho	

In [3]:
```
df.shape
```

Out[3]:
```
(11124, 16)
```

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

Out[4]:
```
Index(['name', 'date_of_event', 'age', 'citizenship', 'event_location',
       'event_location_district', 'event_location_region', 'date_of_death',
       'gender', 'took_part_in_the_hostilities', 'place_of_residence',
       'place_of_residence_district', 'type_of_injury', 'ammunition',
       'killed_by', 'notes'],
      dtype='object')
```

This data have 11124 entries in it with 16 diffrent information about the fatalities in the Israeli-Palestinian conflict.

In [5]:
```
df.nunique()
```

Out[5]:
```
name                             11083
date_of_event                     2405
age                                 95
citizenship                          4
event_location                     494
event_location_district             20
event_location_region                3
date_of_death                     2593
gender                               2
took_part_in_the_hostilities         5
place_of_residence                 580
place_of_residence_district         20
type_of_injury                      13
ammunition                          21
killed_by                            3
notes                             6744
dtype: int64
```

In this data we are having 11,083 people who are killed in conflicts between Isreal-Palestine in last 22 years.

In [6]:
```
from datetime import datetime as dt
df["date_of_event"]=pd.to_datetime(df["date_of_event"], dayfirst= True)
df["year"]=df["date_of_event"].dt.year
df["month"]=df["date_of_event"].dt.month
df["day"]=df["date_of_event"].dt.day
df["day_of_week"]=df["date_of_event"].dt.dayofweek
df['day_of_week'] = df['day_of_week'].map({
    0: 'Monday',
    1: 'Tuesday',
    2: 'Wednesday',
    3: 'Thursday',
    4: 'Friday',
    5: 'Saturday',
    6: 'Sunday'
})
df.columns[16:]
```

Out[6]:
```
Index(['year', 'month', 'day', 'day_of_week'], dtype='object')
```

Here i just made dates and days more clear which will help us get better understanding about the frequency of killings in the conflict.

Chapter 1: Geospatial Analysis

In [7]:
```
df["citizenship"].unique()
```

Out[7]:
```
array(['Palestinian', 'Israeli', 'Jordanian', 'American'], dtype=object)
```

This data consits of 4 diffrent Class of Citizens:-

- Palestinian
- Israeli
- Jordanian
- American

In [8]:
```
df[["event_location_district"]].value_counts()
```

Out[8]:
```
event_location_district
Gaza                        2435
North Gaza                  1910
Khan Yunis                  1394
Rafah                       1066
Deir al-Balah                854
Israel                       679
Nablus                       647
Jenin                        512
Ramallah and al-Bira         350
Hebron                       347
Tulkarm                      254
Bethlehem                    186
East Jerusalem               130
al-Quds                       85
Gush Katif                    70
Qalqiliya                     65
Tubas                         52
Jericho                       48
Salfit                        36
Gaza Strip                     4
dtype: int64
```

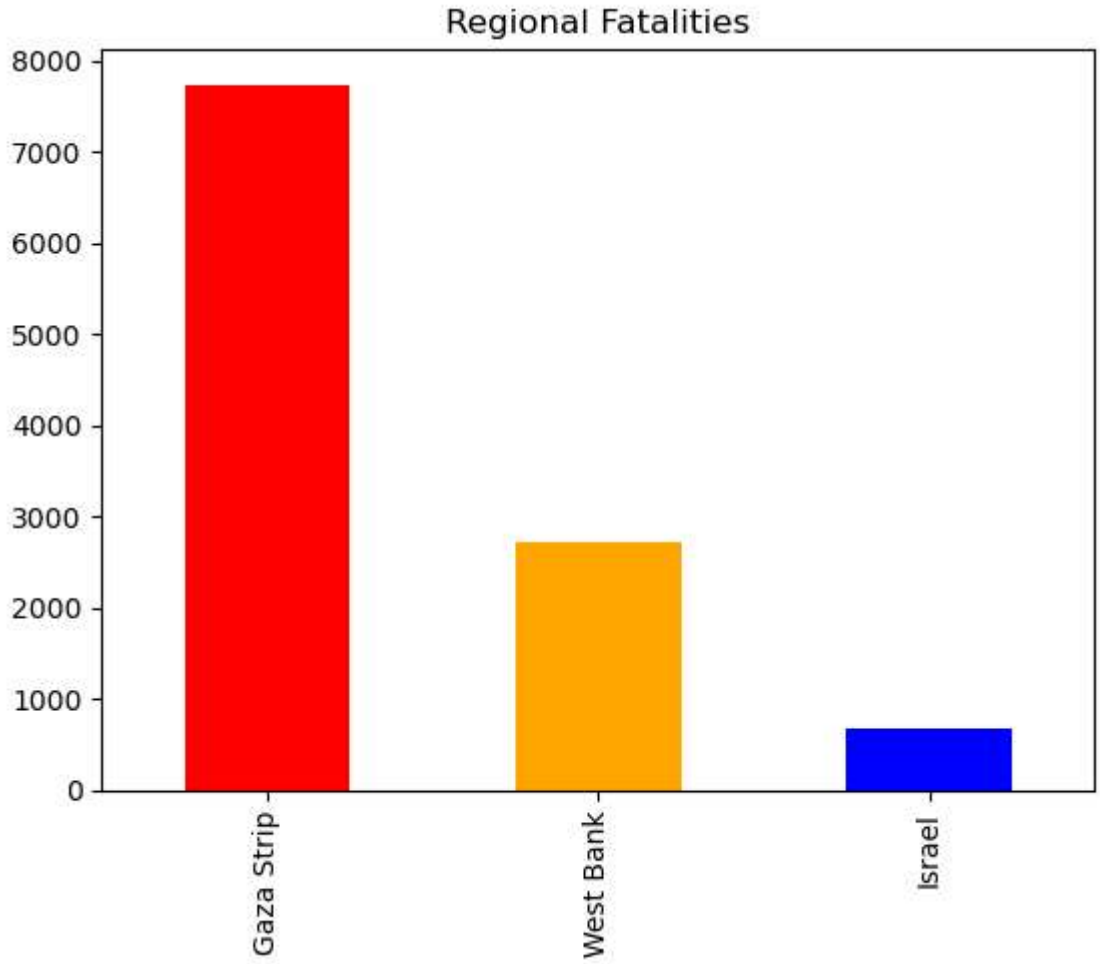
In this entrire fatalities data, It is found that maximum incident occured was of GAZA area.

Including:-

- CENTRAL Gaza.
- NORTHERN Gaza.
- Khan Yunis, SOUTHERN Gaza Strip.
- Rafah, located in SOUTH-WEST of Gaza City.
- Deir al-Balah, central Gaza Strip.

In the top 5 positions before ISREAL

In [9]:
```
lr=df["event_location_region"].value_counts()
lr.plot(kind="bar", color=["r","orange","b"])
plt.title("Regional Fatalities")
plt.show()
```



Here, maximum people fatalities happend in Gaza Strip(7733) & West Bank(2712)

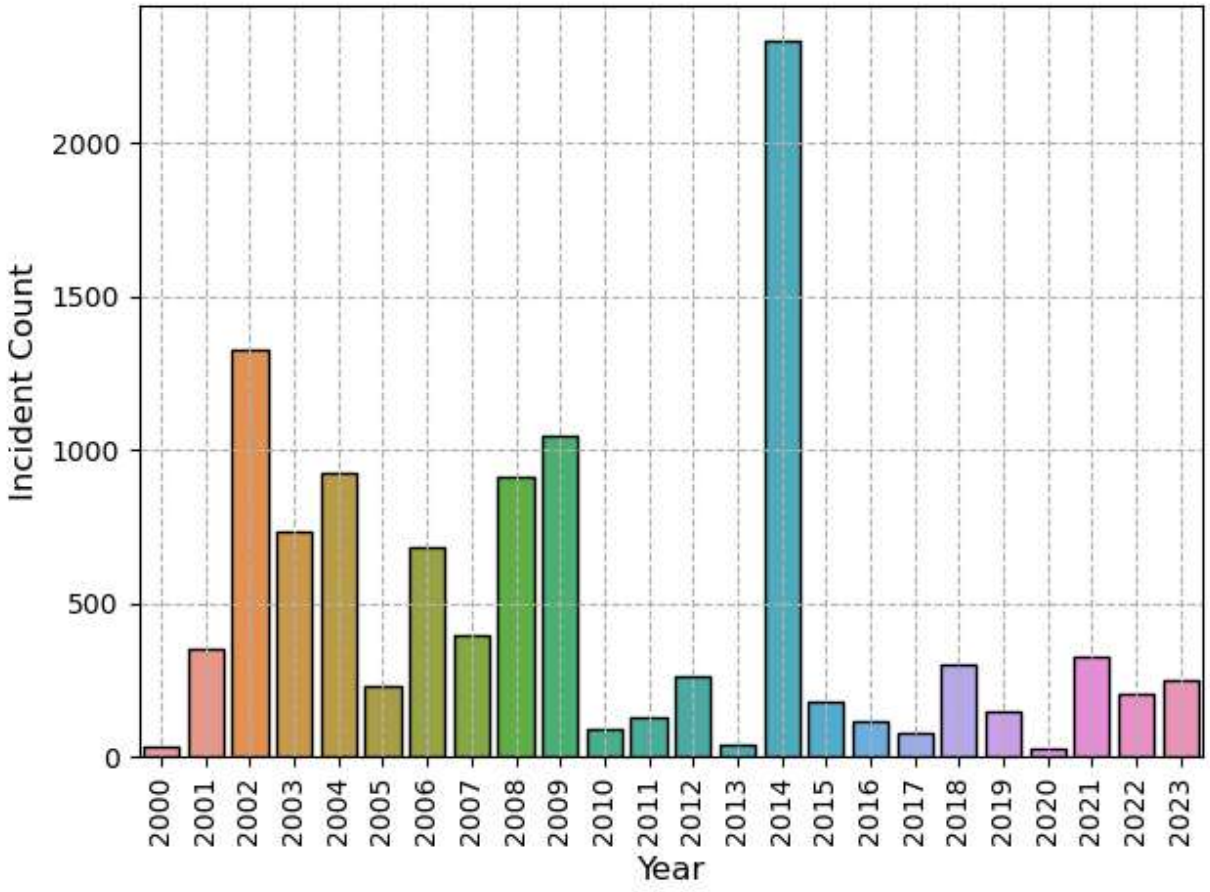
Chapter 2: Demographic Analysis

In [10]:
```
df[["year"]].value_counts()
```

Out[10]:
```
year
2014    2332
2002    1325
2009    1045
2004     928
2008     915
2003     733
2006     684
2007     395
2001     353
2021     325
2018     302
2012     261
2023     249
2005     234
2022     205
2015     177
2019     145
2011     129
2016     116
2010      89
2017      76
2013      41
2000      35
2020      30
dtype: int64
```

Here we can see that the maximum incidents of Fatalities are counted in year 2014. then 2002 and then 2009. These are the datas at the time of Military Assaults of Isreal on Gaza.

In [11]:
```
y= df["year"].value_counts( sort= False).tolist()
x= df["year"].unique()
sns.barplot(x = x,y= y, data = df, edgecolor="black")
plt.xlabel("Year", fontsize=12)
plt.ylabel("Incident Count",fontsize=12)
plt.xticks(rotation = 90)
plt.grid(linestyle="dashed")
plt.tight_layout()
plt.show()
```



2014 have maximum Incident count due to Gaza War.

while 2020 have the lowest, most probably due to COVID pandamic i believe.

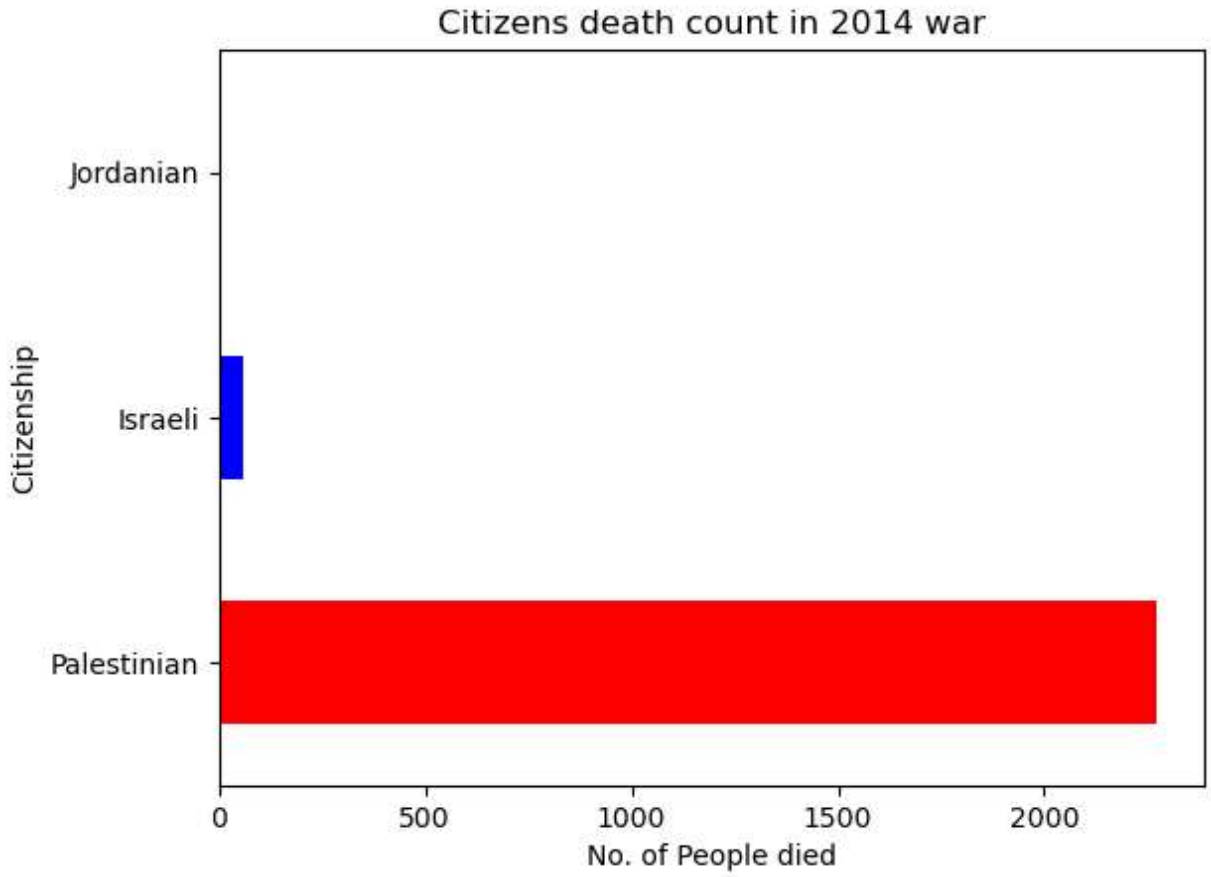
Gaza war 2014

*** Here, maximum people are died in the year 2014. in 2014 there's a huge confict happend called "Gaza War 2014"betwen Isreal and Palestine. It continued for over 50 days.**

*** During the 50 days of hostilities lasting from 8 July until 26 August 2014, 2,251 Palestinians were killed; 1,462 of them are believed to be civilians, including 551 children and 299 women.**

In [12]:
```
war=df.loc[df["year"]==2014]
war["citizenship"].value_counts().plot(kind= "barh", color=["r","b","y"])
print(war["citizenship"].value_counts())
plt.title("Citizens death count in 2014 war")
plt.xlabel("No. of People died")
plt.ylabel("Citizenship")
plt.show()
```

```
Palestinian    2272
Israeli          59
Jordanian         1
Name: citizenship, dtype: int64
```



In [13]:
```
print(war["gender"].value_counts())
war[["name", "age","gender", "date_of_death", "citizenship", "killed_by","notes"]
```

```
M    1837
F     495
Name: gender, dtype: int64
```

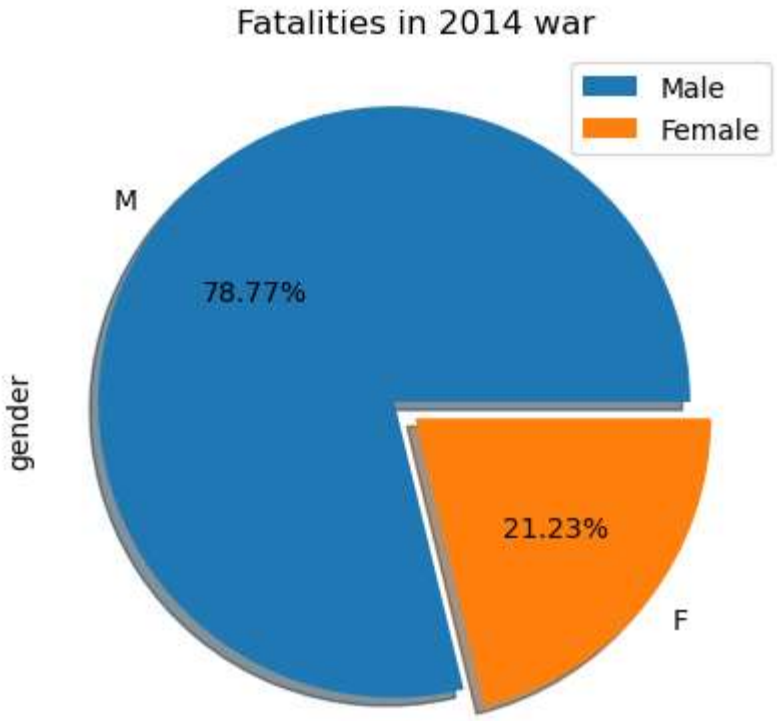
Out[13]:

	name	age	gender	date_of_death	citizenship	killed_by	notes
1625	Imam Jamil Ahmad Dweikat	16.0	M	2014-12-29	Palestinian	Israeli security forces	Shot in the back by a soldier stationed in an ...
1626	Taysir Yusef Muslem a-Smeiri	34.0	M	2014-12-24	Palestinian	Israeli security forces	Killed outside his home, located approximately...
1627	Mahmoud 'Abdallah Muhammad Dar 'Udwan	21.0	M	2014-12-16	Palestinian	Israeli security forces	Shot in the head by soldiers from an undercove...
1628	Fadel Muhammad Muhammad Halawah	32.0	M	2014-11-23	Palestinian	Israeli security forces	Shot in the back by soldiers while he and anot...
1629	Haim Yehiel Rotman	55.0	M	2015-10-24	Israeli	Palestinian civilians	Fatally wounded by gunfire and stab wounds inf...
...	...	...	...	...	...	...	...
3952	Muhammad Mahmoud 'Abd al-'Aziz Mubarak	20.0	M	2014-01-29	Palestinian	Israeli security forces	Shot by soldiers. According to the military, t...
3953	Bilal Samir Ahmad 'Aweidah	19.0	M	2014-01-24	Palestinian	Israeli security forces	Shot several meters away from the Gaza perimet...
3954	Muhammad Yusef Ahmad a-Z'anin	23.0	M	2014-01-22	Palestinian	Israeli security forces	Killed sitting outside the home of Ahmad a-Z'a...
3955	Ahmad Muhammad Jum'ah Khalil a-Z'anin	21.0	M	2014-01-22	Palestinian	Israeli security forces	Killed while sitting outside his home with ano...
3956	'Adnan Jamil Shehdeh Abu Khater	16.0	M	2014-01-03	Palestinian	Israeli security forces	Shot near the Gaza perimeter fence. Military o...

2332 rows × 7 columns

In 2014 war, Total 2332 people died from which 1837 are males and 495 are females, including childrens.

In [14]:
```
war["gender"].value_counts().plot(kind = "pie", autopct= "%1.2f%%", shadow= True,
plt.legend(["Male","Female"])
plt.title("Fatalities in 2014 war")
plt.show()
```



In [15]:
```
war_child= war["age"].loc[war["age"]<=15]
war_child.value_counts().sum()
```

Out[15]: 439

Here, we found that in 2014, 439 childrens below 15 years of age died.

Now lets talk about Overall data, from 2000 to 2023

OLDEST

In [16]:
```
max=df.loc[df["age"]==df["age"].max()]
max[["name", "age","gender", "date_of_death", "citizenship", "killed_by","notes"]
```

Out[16]:

	name	age	gender	date_of_death	citizenship	killed_by	notes
2597	'Aliyyah Hussein Muhammad Qanan	112.0	F	2014-08-02	Palestinian	Israeli security forces	Injured while searching for his brother how ha...

The oldest person died was a Female citizen of Palestine whose age is 112 years and she was killed by "Israeli security forces" according to data.

YOUNGEST

In [17]:
```
min=df.loc[df["age"]==df["age"].min()]
print("Total no. of Infants died:",min["name"].count(),"\n",min["gender"].value_c
min[["name", "age","gender", "date_of_death", "citizenship", "killed_by", "notes"
```

```
Total no. of Infants died: 59
 M    30
F    29
Name: gender, dtype: int64
```

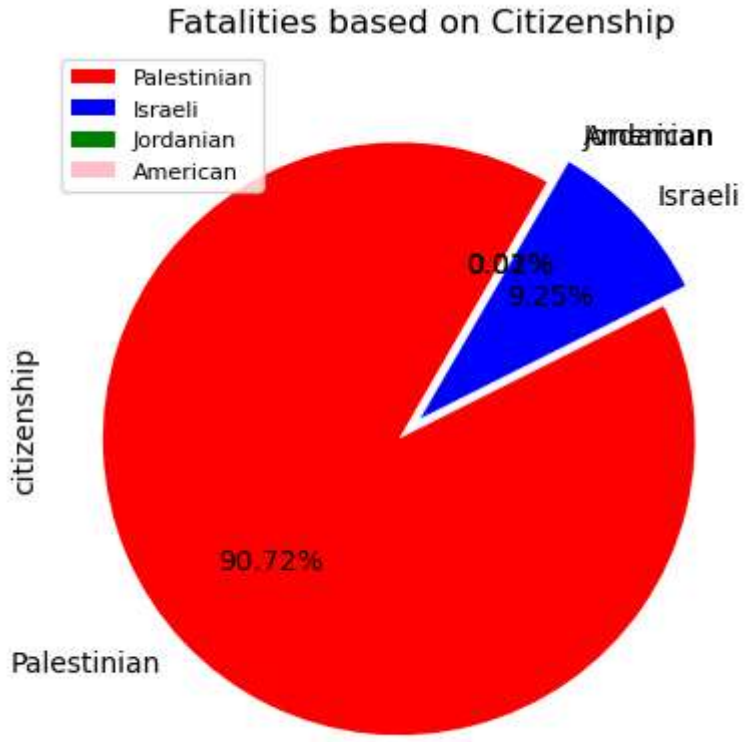
Out[17]:

	name	age	gender	date_of_death	citizenship	killed_by	notes
815	Firas Rasmi Salem a-Sawarkah	1.0	M	2019-11-14	Palestinian	Israeli security forces	Killed along with his parents and two of his m...
1053	Bayan Muhammad Kamel Abu Khamash	1.0	F	2018-08-09	Palestinian	Israeli security forces	Killed with her mother, who was in advanced st...
1600	'Ali Sa'ed Muhammad Dawabsheh	1.0	M	2015-07-31	Palestinian	Israeli civilians	Killed when his house was torched. His parents...
	Zeinah Bilal					Israeli	Killed seated in a

The youngest who died are 30 males and 29 female (total 59) Infants with age upto 1 years old, Maximum amoung them are Palestinians who got killed by "Israeli security forces".

In [18]:
```
df["citizenship"].value_counts().plot(kind="pie", colors=["r","b","g","pink"], au
, startangle=60)
plt.title("Fatalities based on Citizenship")
plt.legend(df["citizenship"].unique(), fontsize=8, loc= "upper left")
print(df[["citizenship"]].value_counts())
plt.show()
```

```
citizenship
Palestinian    10092
Israeli         1029
Jordanian          2
American           1
dtype: int64
```



Here,we can see that:-

*** Maximum people died are Palestinians which counts 10092.**

*** Then Israelis which counts 1029**

*** 2 Jordanian and 1 American also died.**

Chapter 3: Hostilities Participation Analysis

In [19]:
```
df[["took_part_in_the_hostilities"]].value_counts()
```

Out[19]:
```
took_part_in_the_hostilities
No                             4653
Yes                            3467
Israelis                        771
Unknown                         603
Object of targeted killing      200
dtype: int64
```

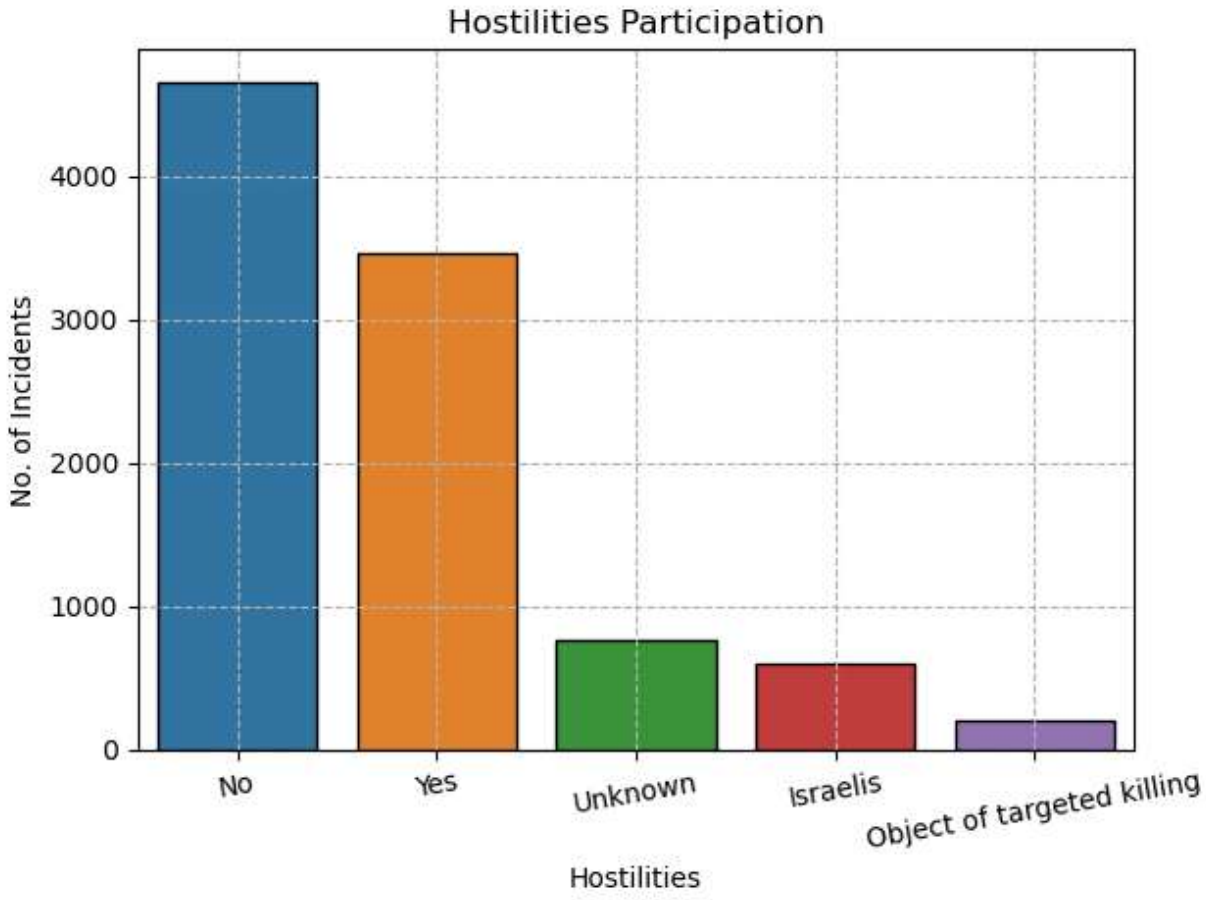
*** Here it is noticed that at maximum time, the victim is killed without any Hostilities Participation.**

*** But in many cases there is a large involvement of victims in Hostilities before Dying.**

*** Also there are 771 incidents where Israelis are involved in Hostilities .**

*** There are 200 incidents of Target Killings who are hostiled too.**

In [20]:
```
d=df["took_part_in_the_hostilities"].value_counts().tolist()
v=df["took_part_in_the_hostilities"].dropna().unique().tolist()
sns.barplot(x=v,y=d, edgecolor="black")
plt.title("Hostilities Participation")
plt.xlabel("Hostilities")
plt.ylabel("No. of Incidents")
plt.xticks(rotation = 10)
plt.grid(linestyle="dashed")
plt.tight_layout()
plt.show()
```



In [21]:
```
hstg=df.loc[df["took_part_in_the_hostilities"]!="No"].dropna()
hstd=hstg[["name","age","gender","date_of_event","date_of_death","took_part_in_th
hstd
```

Out[21]:

	name	age	gender	date_of_event	date_of_death	took_part_in_the_hostilities	event_loc
94	Iyad al-'Abed al-Hasani	51.0	M	2023-05-12	2023-05-12	Yes	
95	Muhammad Walid Muhammad 'Abd al-'Aal	33.0	M	2023-05-12	2023-05-12	Yes	
96	'Ali Hassan Muhammad Ghali	49.0	M	2023-05-11	2023-05-11	Yes	
98	Mahmoud Walid Mahmoud 'Abd al-Jawad	25.0	M	2023-05-11	2023-05-11	Yes	
100	Ahmad Mahmoud Hamdan Abu Daqah	43.0	M	2023-05-11	2023-05-11	Yes	
...	...	...	...	...	...	...	
11115	Hanan Levy	33.0	M	2000-11-02	2000-11-02	Israelis	
11116	Eish Kodesh Gilmor	25.0	M	2000-10-30	2000-10-30	Israelis	
11118	Marik Gavrilov	25.0	M	2000-10-27	2000-10-27	Israelis	
11119	Binyamin Herling	64.0	M	2000-10-19	2000-10-19	Israelis	
11121	Hillel Lieberman	36.0	M	2000-10-07	2000-10-07	Israelis	

2331 rows × 7 columns

Here is the filtred data of people who took part in the hostilities.

In [22]:
```
hstd[["event_location_region"]].value_counts()
```

Out[22]:
```
event_location_region
Gaza Strip               1798
Israel                    391
West Bank                 142
dtype: int64
```

Maximum of Hostilities Participation incidents are from Gaza Strp which is 1798.

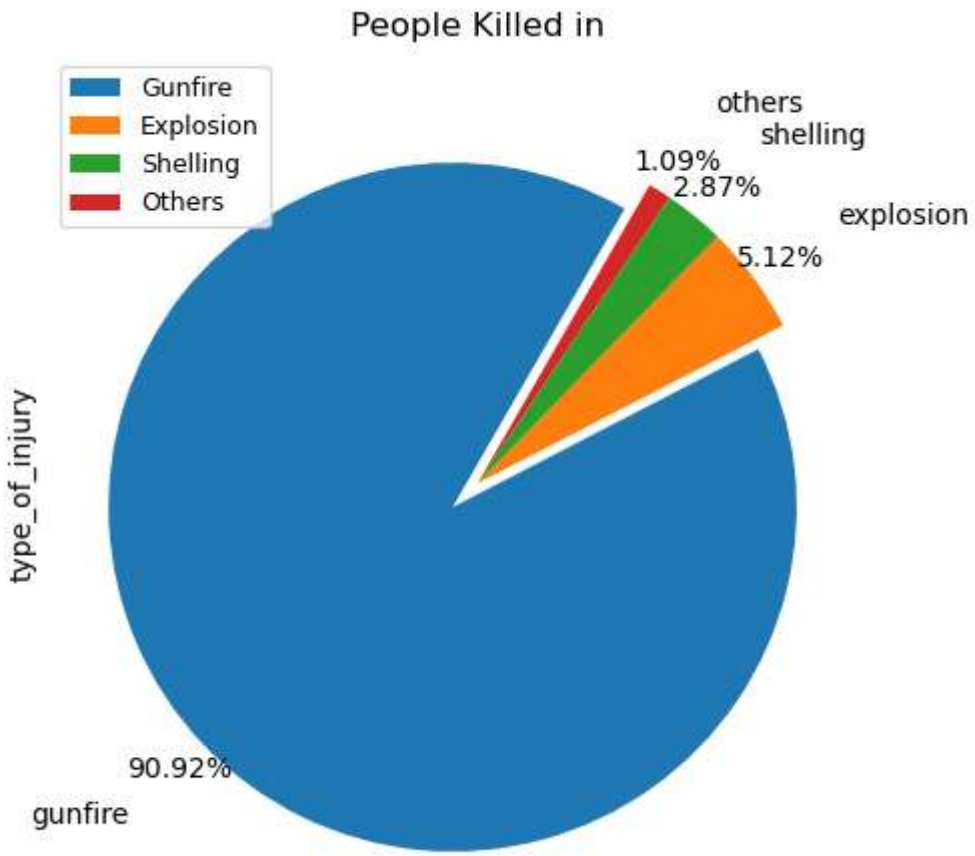
Chapter 4: Injury Analysis

In [23]:
```
df["type_of_injury"].value_counts()
```

Out[23]:
```
gunfire                          9849
explosion                         555
shelling                          311
stabbing                           48
house demolition                   25
hit by a vehicle                   18
beating                             9
stones throwing                     6
being bludgeoned with an axe        4
fire                                4
physically assaulted                2
physical assault                    1
Strangulation                       1
Name: type_of_injury, dtype: int64
```

There are 13 diffrent type of injury noticed in killed people. But maximum of them are killed in Gunfire and Explosions.

In [24]:
```
maj=df["type_of_injury"].value_counts().head(3)
l=df["type_of_injury"].value_counts().tail(10).sum()
maj.loc['others']=l
maj.plot(kind="pie", explode=[0.1,0,0,0], startangle=60, fontsize=10, autopct="%1
plt.legend( )
plt.title("People Killed in")
plt.tight_layout()
plt.legend(["Gunfire","Explosion","Shelling","Others"], fontsize=9)
plt.show()
```



With this pie chart we can see that more than 90% people died in Gunfires and 5% in Explosions.

Chapter 5: Weapons Used

In [25]:
```
df["ammunition"].value_counts()
```

Out[25]:
```
missile                        2877
live ammunition                1514
shell                           675
explosive belt                  326
bomb                            249
mortar fire                      51
knife                            37
flechette shells                 22
rubber-coated metal bullets      19
0.22-caliber bullets             16
phosphorus shell                 16
Qassam rocket                    15
car bomb                         15
teargas canister                 13
rocket                           12
grad rocket                       7
sponge rounds                     2
grenade                           2
flare bomb                        1
stun grenade                      1
rock                              1
Name: ammunition, dtype: int64
```

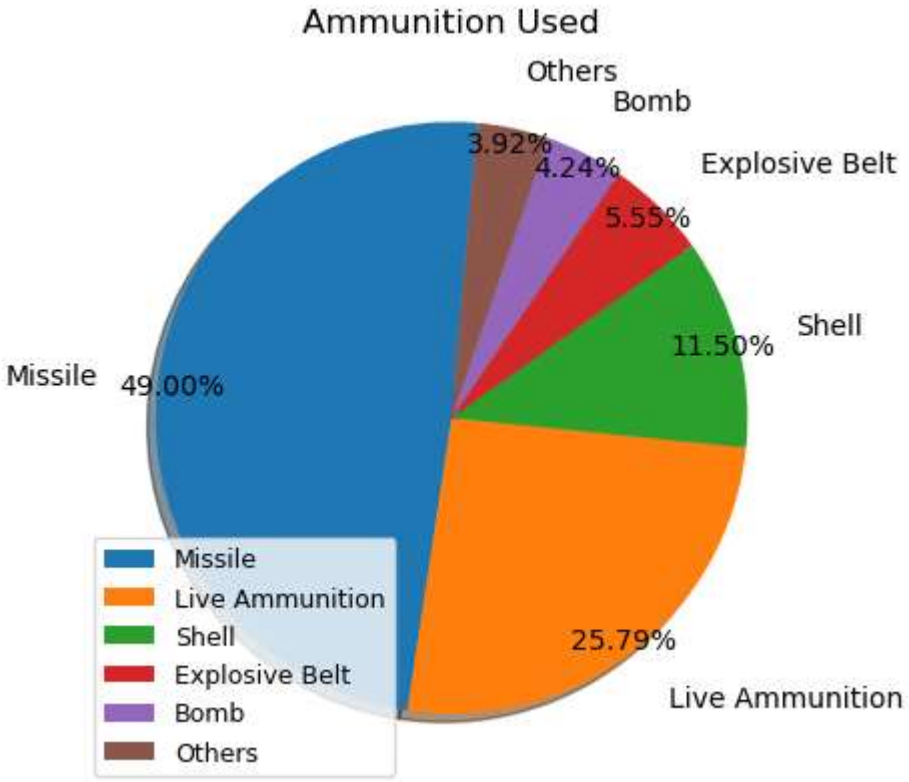
When it comes to data of Weapons used, we found that the data have maximum incidents of using Missiles which counts 2877.

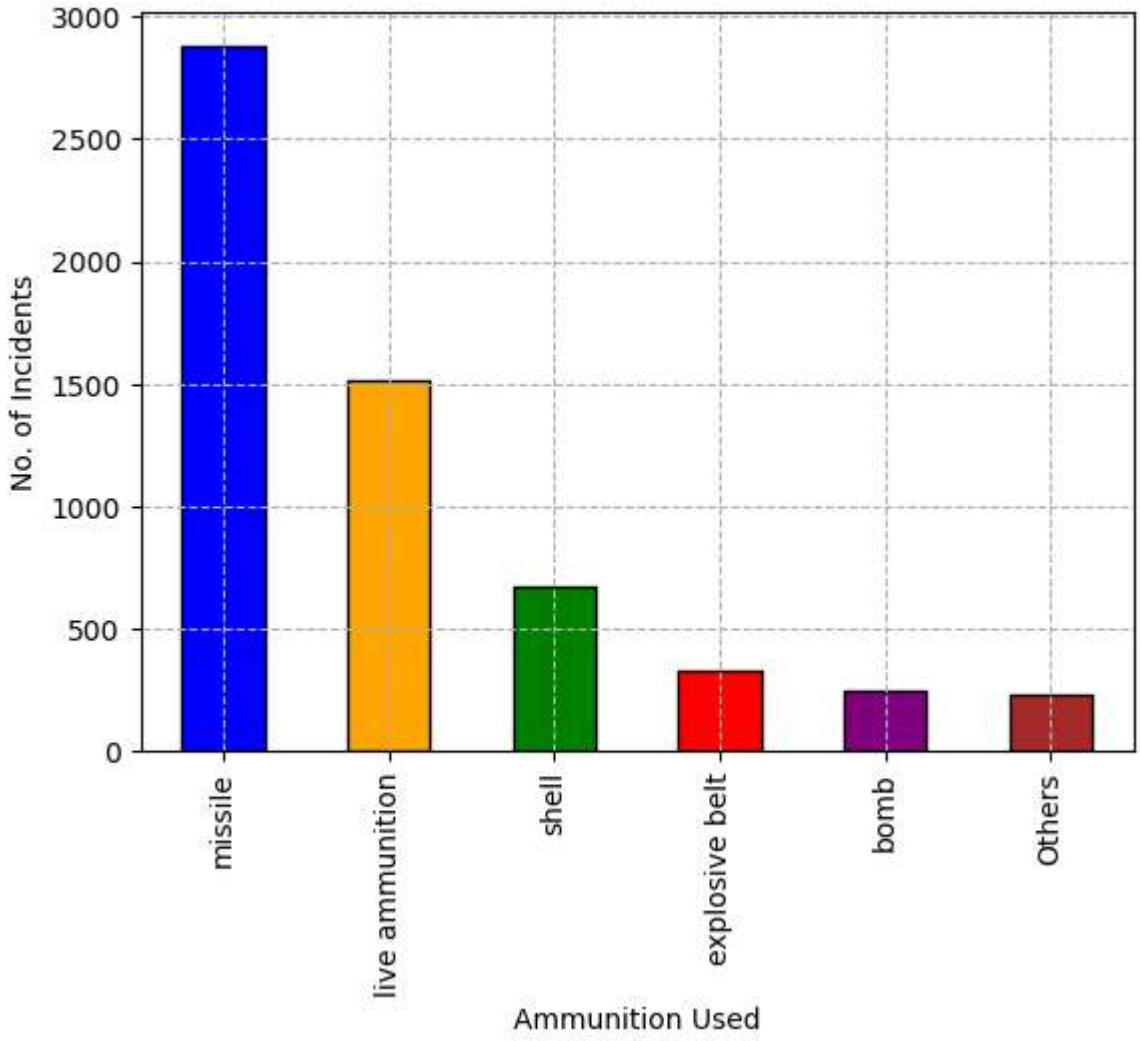
But previously we noticed that 90% maximum people are died due to gunfire and here we get to see that Count of using is maximum individually.

It is due to the classification of Gunfire data, into Live Ammunitions, shells, rubber-coated metal bullets , 0.22-caliber bullets and flechette shells.

In [26]:
```
plt.figure(1)
wu=df["ammunition"].value_counts().head(5)
ot=df["ammunition"].value_counts().tail(16).sum()
wu.loc["Others"]=ot
labe=["Missile","Live Ammunition","Shell","Explosive Belt","Bomb", "Others"]
plt.pie(wu, labels=labe, startangle=85, autopct="%1.2f%%", pctdistance=0.95, labe
plt.legend(labe, loc="lower left", fontsize=9)
plt.title("Ammunition Used")

plt.figure(2)
wu.plot(kind="bar", color=["b","orange","g","red","purple","brown"],edgecolor="bl
plt.grid(linestyle="dashed")
plt.xlabel("Ammunition Used")
plt.ylabel("No. of Incidents")
plt.show()
```





Here is the Graphical representation of the Ammunition Data.