In [1]:

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
ipe=pd.read_excel('Indian_Parliament_elections.xlsx')
ipe
```

Out[1]:

	Political Party	No of Candidates	Seats Won	Votes	Percentage	year	Unnamed: 6	Unnamed: 7
0	Bharatiya Lok Dal BLD	3	0	637206	7.19	1977	NaN	NaN
1	Communist Party of India CPI	4	4	919359	10.38	1977	NaN	NaN
2	Communist Party of India (Marxist) CPM	9	0	1800193	20.33	1977	NaN	NaN
3	Indian National Congress (Indira) INCI	11	11	2579745	29.13	1977	NaN	NaN
4	Others / Independents IND	23	0	214261	2.42	1977	NaN	NaN
...	...	...	...	...	...	...	...	...
186	Secular Democratic Congress SDC	2	0	804	0.00	2019	NaN	NaN
187	Social Democratic Party of India SDPI	10	0	80111	0.39	2019	NaN	NaN
188	Samajwadi Forward Block SFB	1	0	932	0.00	2019	NaN	NaN
189	Socialist Unity Centre of India (Communist) S...	9	0	11527	0.06	2019	NaN	NaN
190	Viduthalai Chirutahikal Katchi VCK	1	0	1628	0.01	2019	NaN	NaN

191 rows × 8 columns

In [2]:

```
ipe.head(10)
```

Out[2]:

	Political Party	No of Candidates	Seats Won	Votes	Percentage	year	Unnamed: 6	Unnamed: 7
0	Bharatiya Lok Dal BLD	3	0	637206	7.19	1977	NaN	NaN
1	Communist Party of India CPI	4	4	919359	10.38	1977	NaN	NaN
2	Communist Party of India (Marxist) CPM	9	0	1800193	20.33	1977	NaN	NaN
3	Indian National Congress (Indira) INCI	11	11	2579745	29.13	1977	NaN	NaN
4	Others / Independents IND	23	0	214261	2.42	1977	NaN	NaN
5	Indian Union Muslim League IUML	2	2	533726	6.03	1977	NaN	NaN
6	Kerala Congress KC	2	2	491674	5.55	1977	NaN	NaN
7	Kerala Congress (Pillai) KCB alias KCP	3	0	526937	5.95	1977	NaN	-
8	Muslim League (Opposition) MLO	2	0	319039	3.60	1977	NaN	NaN
9	Independents (Opposition Front) OF	3	0	561709	6.34	1977	NaN	NaN

In [11]:

```
#ipe.drop(['Unnamed: 6','Unnamed: 7'],axis=1,inplace=True)
#ipe
```

In [4]:

```
ipe.shape
```

Out[4]:

```
(191, 8)
```

In [12]:

```
ipe.isna()
```

Out[12]:

	Political Party	No of Candidates	Seats Won	Votes	Percentage	year
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
...	...	...	...	...	...	...
186	False	False	False	False	False	False
187	False	False	False	False	False	False
188	False	False	False	False	False	False
189	False	False	False	False	False	False
190	False	False	False	False	False	False

191 rows × 6 columns

In [6]:

```
# 1 .Find total number of Political Party
ipe['Political Party'].value_counts()
```

Out[6]:

```
Communist Party of India (Marxist) CPM                4
Indian National Congress (Indira) INCI                4
Others / Independents IND                             4
Indian Union Muslim League IUML                       4
 Bharatiya Janata Party BJP                           4
                                                     ..
  Indian National Congress (Indira) INCI              1
 Independents DLP                                     1
  Communist Party of India (Marxist-Leninist) CPML    1
 UDF supported Independents UDF                       1
 Samajwadi Forward Block SFB                          1
Name: Political Party, Length: 122, dtype: int64
```

In [8]:

```
# 2.Find Number of Political Party
ipe['Political Party'].count()
```

Out[8]:

```
191
```

In [15]:

```
# 3.Find total number of Votes
ipe['Votes'].sum()
```

Out[15]:

```
141631467
```

In [13]:

```
ipe.columns
```

Out[13]:

```
Index(['Political Party', 'No of Candidates', 'Seats Won', 'Votes',
       'Percentage', 'year'],
      dtype='object')
```

In [16]:

```
# 4.Find Average of Votes
ipe['Votes'].mean()
```

Out[16]:

```
741526.0052356021
```

In [17]:

```
# 5.Find Max of Votes
ipe['Votes'].max()
```

Out[17]:

```
7596610
```

In [18]:

```
# 6.Find Mini of Votes
ipe['Votes'].min()
```

Out[18]:

```
261
```

In [20]:

```
# 7. Find total number of year by Political Party
ipe.groupby('Political Party').count()['year']
```

Out[20]:

```
Political Party
  All Kerala MGR Dravida Munnetra Party ADMP           1
  Communist Party of India (Marxist-Leninist) CPML     1
  Communist Party of India (Marxist-Leninist) CPML     1
  Communist Party of India CPI                         1
  Independents (Janata) SJP                            1
                                                      ..
Others / Independents IND                              4
Revolutionary Socialist Party (Bolshevik) RSPB         1
Revolutionary Socialist Party RSP                      2
Social Action Party SAP                                1
Socialist Republican Party SRP                         1
Name: year, Length: 122, dtype: int64
```

In [24]:

```
# 8.Find total number of year by Votes
ipe.groupby('Votes').sum()['year']
```

```
C:\Users\91984\AppData\Local\Temp\ipykernel_1220\444001840.py:2: FutureWa
rning: The default value of numeric_only in DataFrameGroupBy.sum is depre
cated. In a future version, numeric_only will default to False. Either sp
ecify numeric_only or select only columns which should be valid for the f
unction.
  ipe.groupby('Votes').sum()['year']
```

Out[24]:

```
Votes
261        2014
320        2019
379        2019
457        2009
546        2014
           ... 
5590285    2014
6051905    1999
6217161    1986
6434486    2009
7596610    2019
Name: year, Length: 191, dtype: int64
```

In [25]:

```
# 9.8.Find total number of year by Votes and Percentage
ipe.groupby(['Votes','Percentage']).sum()['year']
```

```
C:\Users\91984\AppData\Local\Temp\ipykernel_1220\1413868240.py:2: FutureW
arning: The default value of numeric_only in DataFrameGroupBy.sum is depr
ecated. In a future version, numeric_only will default to False. Either s
pecify numeric_only or select only columns which should be valid for the
function.
  ipe.groupby(['Votes','Percentage']).sum()['year']
```

Out[25]:

```
Votes    Percentage
261      0.00          2014
320      0.00          2019
379      0.00          2019
457      0.00          2009
546      0.00          2014
                       ... 
5590285  31.10         2014
6051905  39.35         1999
6217161  41.71         1986
6434486  40.21         2009
7596610  37.27         2019
Name: year, Length: 191, dtype: int64
```

In [26]:

```
# 10.Find total of Percentage
ipe['Percentage'].sum()
```

Out[26]:

```
5058.8099999999995
```

In [27]:

```
# 11.Find Average of Percentage
ipe['Percentage'].mean()
```

Out[27]:

```
26.485916230366488
```

In [28]:

```
# 12.Find Max of Percentage
ipe['Percentage'].max()
```

Out[28]:

```
2053.0
```

In [29]:

```
# 13.Find Mini of Percentage
ipe['Percentage'].min()
```

Out[29]:

```
0.0
```

In [30]:

```
# 14.Find total number of Year
ipe['year'].value_counts()
```

Out[30]:

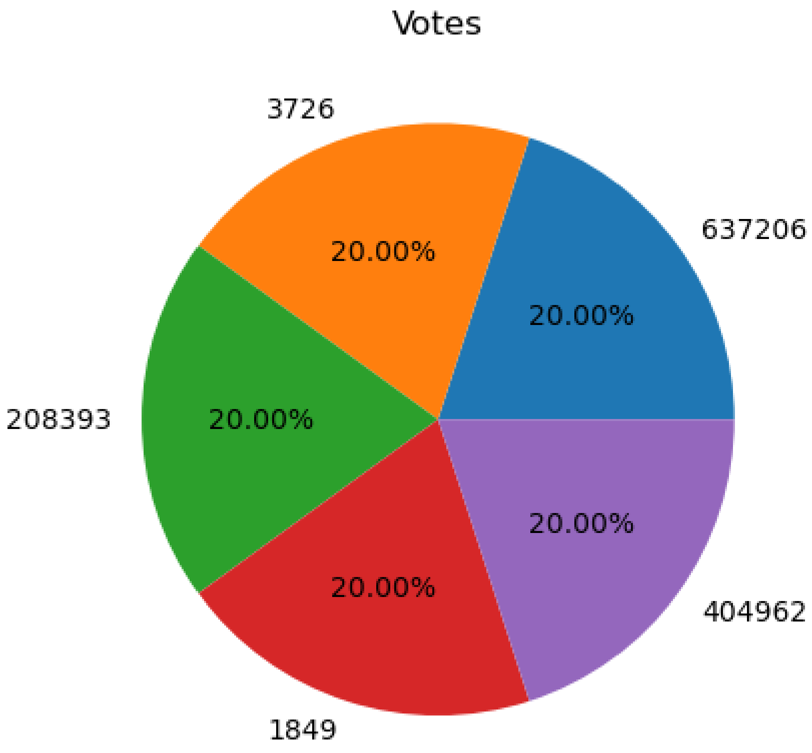
```
2014    28
2019    27
2009    25
2004    21
1999    18
1998    17
1984    16
1986    15
1980    13
1977    11
Name: year, dtype: int64
```

In [32]:

```
# 15.Create a pie chart to show most vote .
pie_label=ipe.Votes.value_counts().index
pie_val=ipe.Votes.value_counts().values
plt.pie(pie_val[:5],labels=pie_label[:5],autopct='%1.2f%%')
plt.title('Votes')
```

Out[32]:

```
Text(0.5, 1.0, 'Votes')
```



In [33]:

```
ipe.columns
```

Out[33]:

```
Index(['Political Party', 'No of Candidates', 'Seats Won', 'Votes',
       'Percentage', 'year'],
      dtype='object')
```

In [34]:

```
# 16. Find total number of Political Party by No of Candidates
ipe.groupby('No of Candidates').count()['Political Party']
```

Out[34]:

```
No of Candidates
1      67
2      36
3      12
4      17
5       7
6       2
7       2
8       3
9       3
10      4
11      2
12      1
13      2
14      4
15      4
16      3
17      4
18      1
19      3
20      4
23      1
52      1
66      1
84      1
102     1
103     1
105     1
113     1
115     1
131     1
Name: Political Party, dtype: int64
```

In [38]:

```
# 17. Find total number of Political Party by Seats Won
ipe.groupby('Political Party').count()['Seats Won']
```

Out[38]:

```
Political Party
  All Kerala MGR Dravida Munnetra Party ADMP          1
  Communist Party of India (Marxist-Leninist) CPML    1
  Communist Party of India (Marxist-Leninist) CPML    1
  Communist Party of India CPI                        1
  Independents (Janata) SJP                           1
                                                     ..
Others / Independents IND                             4
Revolutionary Socialist Party (Bolshevik) RSPB        1
Revolutionary Socialist Party RSP                     2
Social Action Party SAP                               1
Socialist Republican Party SRP                        1
Name: Seats Won, Length: 122, dtype: int64
```

In [40]:

```
# 18.Find the unique  number of Political Party.
u1=ipe['Political Party'].unique()
len(np.unique(u1))
```

Out[40]:

```
122
```

In [41]:

```
# 19.Find the unique  number of Candidates.
u2=ipe['No of Candidates'].unique()
len(np.unique(u2))
```

Out[41]:

```
30
```

In [42]:

```
# 20.Find the unique  number of Seats Won.
u3=ipe['Seats Won'].unique()
len(np.unique(u3))
```

Out[42]:

```
13
```

In [43]:

```
# 21.Find the unique  number of Votes.
u4=ipe['Votes'].unique()
len(np.unique(u4))
```

Out[43]:

```
191
```

In [44]:

```
# 22.Find the unique  number of Percentage.
u5=ipe['Percentage'].unique()
len(np.unique(u5))
```

Out[44]:

```
135
```

In [45]:

```
# 23.Find the unique  number of year.
u6=ipe['year'].unique()
len(np.unique(u6))
```

Out[45]:

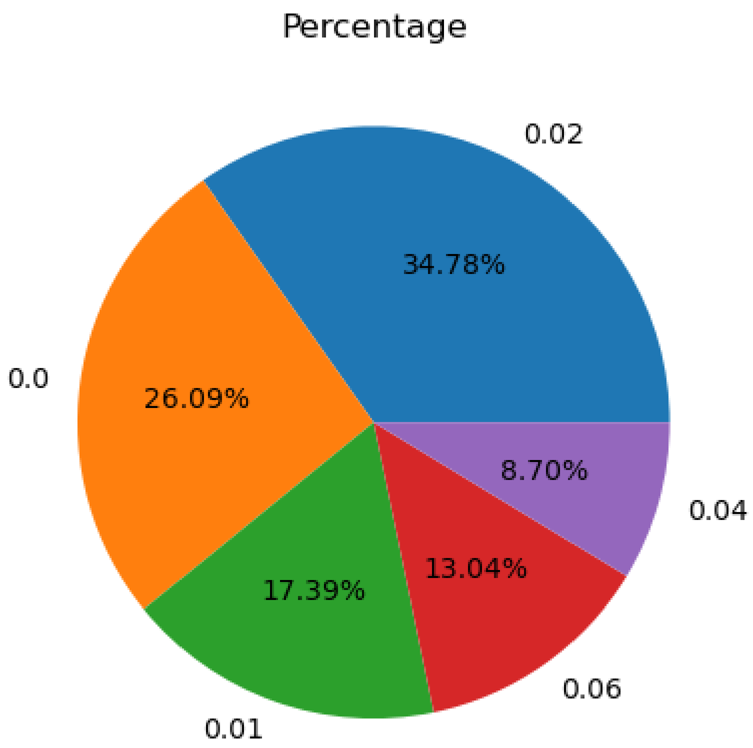
```
10
```

In [47]:

```
# 24 .Create a pie chart to show most Percentage .
pie_label=ipe.Percentage.value_counts().index
pie_val=ipe.Percentage.value_counts().values
plt.pie(pie_val[:5],labels=pie_label[:5],autopct='%1.2f%%')
plt.title('Percentage')
```

Out[47]:

```
Text(0.5, 1.0, 'Percentage')
```



In [ ]:

In [ ]: