```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

```
from google.colab import files
uploaded = files.upload()
```

Choose Files covid_vacci…tatewise.csv

- **covid_vaccine_statewise.csv**(text/csv) - 1108819 bytes, last modified: 5/2/2023 - 100% done

```
Saving covid_vaccine_statewise.csv to covid_vaccine_statewise (1).csv
```

```
df = pd.read_csv('covid_vaccine_statewise.csv')
```

```
df.describe()
```

	Total Doses Administered	Sessions	Sites	First Dose Administered	Second Dose Administered	Male (Doses Administered)	Female (Doses Administered)	Transgender (Doses Administered)	Covaxin (Doses Administered)	Covi Adminis
count	7.621000e+03	7.621000e+03	7621.000000	7.621000e+03	7.621000e+03	7.461000e+03	7.461000e+03	7461.000000	7.621000e+03	7.6210
mean	9.188171e+06	4.792358e+05	2282.872064	7.414415e+06	1.773755e+06	3.620156e+06	3.168416e+06	1162.978019	1.044669e+06	8.1265
std	3.746180e+07	1.911511e+06	7275.973730	2.995209e+07	7.570382e+06	1.737938e+07	1.515310e+07	5931.353995	4.452259e+06	3.2984
min	7.000000e+00	0.000000e+00	0.000000	7.000000e+00	0.000000e+00	0.000000e+00	2.000000e+00	0.000000	0.000000e+00	7.0000
25%	1.356570e+05	6.004000e+03	69.000000	1.166320e+05	1.283100e+04	5.655500e+04	5.210700e+04	8.000000	0.000000e+00	1.3313
50%	8.182020e+05	4.547000e+04	597.000000	6.614590e+05	1.388180e+05	3.897850e+05	3.342380e+05	113.000000	1.185100e+04	7.5673
75%	6.625243e+06	3.428690e+05	1708.000000	5.387805e+06	1.166434e+06	2.735777e+06	2.561513e+06	800.000000	7.579300e+05	6.0078
max	5.132284e+08	3.501031e+07	73933.000000	4.001504e+08	1.130780e+08	2.701636e+08	2.395186e+08	98275.000000	6.236742e+07	4.4682

8 rows × 22 columns

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7845 entries, 0 to 7844
Data columns (total 24 columns):
 #   Column                                Non-Null Count  Dtype  
---  ------                                --------------  -----  
 0   Updated On                            7845 non-null   object 
 1   State                                 7845 non-null   object 
 2   Total Doses Administered              7621 non-null   float64
 3   Sessions                              7621 non-null   float64
 4    Sites                                7621 non-null   float64
 5   First Dose Administered               7621 non-null   float64
 6   Second Dose Administered              7621 non-null   float64
 7   Male (Doses Administered)             7461 non-null   float64
 8   Female (Doses Administered)           7461 non-null   float64
 9   Transgender (Doses Administered)      7461 non-null   float64
 10   Covaxin (Doses Administered)         7621 non-null   float64
 11  CoviShield (Doses Administered)       7621 non-null   float64
 12  Sputnik V (Doses Administered)        2995 non-null   float64
 13  AEFI                                  5438 non-null   float64
 14  18-44 Years (Doses Administered)      1702 non-null   float64
 15  45-60 Years (Doses Administered)      1702 non-null   float64
 16  60+ Years (Doses Administered)        1702 non-null   float64
 17  18-44 Years(Individuals Vaccinated)   3733 non-null   float64
 18  45-60 Years(Individuals Vaccinated)   3734 non-null   float64
 19  60+ Years(Individuals Vaccinated)     3734 non-null   float64
 20  Male(Individuals Vaccinated)          160 non-null    float64
 21  Female(Individuals Vaccinated)        160 non-null    float64
 22  Transgender(Individuals Vaccinated)   160 non-null    float64
 23  Total Individuals Vaccinated          5919 non-null   float64
dtypes: float64(22), object(2)
memory usage: 1.4+ MB
```

```
doses = df.groupby("State")[["First Dose Administered","Second Dose Administered"]].max()
```

```
doses
```

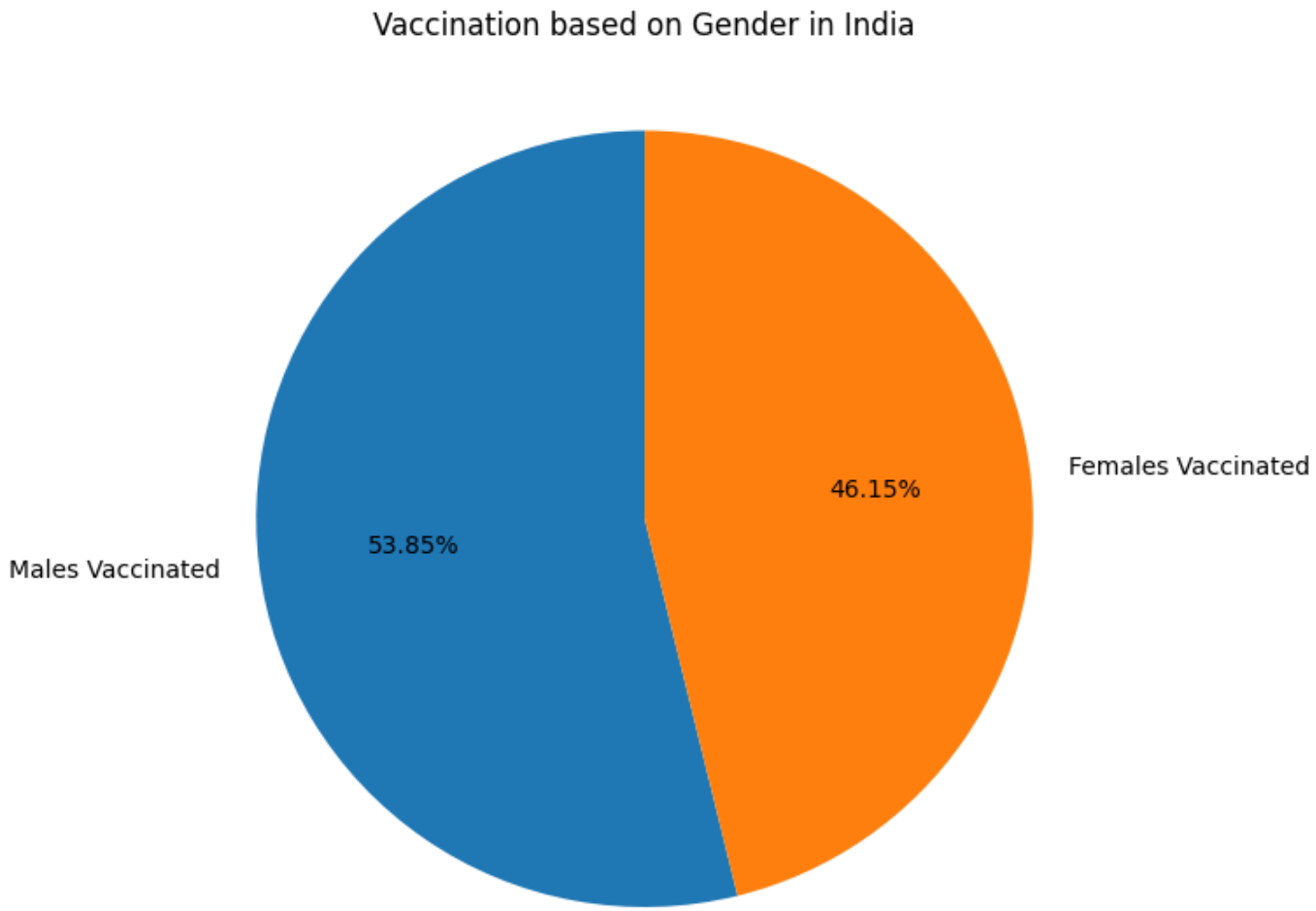
State	First Dose Administered	Second Dose Administered
Andaman and Nicobar Islands	216046.0	94597.0
Andhra Pradesh	17628583.0	6214312.0
Arunachal Pradesh	692475.0	186619.0
Assam	10495293.0	2208577.0
Bihar	23350171.0	4484768.0
Chandigarh	700285.0	223534.0
Chhattisgarh	9181482.0	2587695.0
Dadra and Nagar Haveli and Daman and Diu	584370.0	80851.0
Delhi	7835546.0	3000536.0
Goa	1094392.0	302519.0
Gujarat	28101222.0	9051153.0
Haryana	10086831.0	2923550.0
Himachal Pradesh	4249849.0	1382592.0
India	400150406.0	113077994.0
Jammu and Kashmir	5318516.0	1489826.0
Jharkhand	8382280.0	1996014.0
Karnataka	25847691.0	7432852.0
Kerala	15670747.0	6426984.0
Ladakh	188699.0	70337.0
Lakshadweep	51156.0	17139.0
Madhya Pradesh	29723036.0	5733640.0
Maharashtra	35040812.0	12112554.0
Manipur	1159424.0	246694.0

Meghalaya	938572.0	231982.0

```
male = df.groupby("State")[["Male(Individuals Vaccinated)"]].max().sum()
female = df.groupby("State")[["Female(Individuals Vaccinated)"]].max().sum()
```

Nagaland	632120.0	159388.0

```
plt.axis("equal")
plt.title("Vaccination based on Gender in India\n\n\n\n")
plt.pie([male[0],female[0]],
        labels=["Males Vaccinated","Females Vaccinated"],
        autopct="%0.2f%%",
        startangle=90,
        radius=1.5);
```



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