Covid-19 Vaccination Analysis

DSBDA Mini Project by:

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Importing required libraries:

import numpy as np import pandas as pd

import matplotlib.pyplot as plt

%matplotlib inline

import seaborn as sns

# Reading the dataset:

df= pd.read\_csv('covid\_vaccine\_statewise.csv') df.head()

**Updated**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **On** | **Administered** |  | **Administered** | **Administered** | **Ad** |
| **0** 16/01/2021 | India 48276.0 | 3455.0 | 2957.0 48276.0 | 0.0 |  |
| **1** 17/01/2021 | India 58604.0 | 8532.0 | 4954.0 58604.0 | 0.0 |  |
| **2** 18/01/2021 | India 99449.0 | 13611.0 | 6583.0 99449.0 | 0.0 |  |
| **3** 19/01/2021 | India 195525.0 | 17855.0 | 7951.0 195525.0 | 0.0 |  |
| **4** 20/01/2021 | India 251280.0 | 25472.0 | 10504.0 251280.0 | 0.0 |  |

**State Total Doses**

**Sessions Sites First Dose**

**Second Dose**

5 rows × 24 columns

# a. Describing the dataset:

df.describe()

**Total Doses Administered**

**Sessions Sites First Dose Administered**

**Second Dose Administered**

**Male ( Administ**

**count** 7.621000e+03 7.621000e+03 7621.000000 7.621000e+03 7.621000e+03 7.46100 **mean** 9.188171e+06 4.792358e+05 2282.872064 7.414415e+06 1.773755e+06 3.62015 **std** 3.746180e+07 1.911511e+06 7275.973730 2.995209e+07 7.570382e+06 1.73793 **min** 7.000000e+00 0.000000e+00 0.000000 7.000000e+00 0.000000e+00 0.00000 **25%** 1.356570e+05 6.004000e+03 69.000000 1.166320e+05 1.283100e+04 5.65550

**75%** 6.625243e+06 3.428690e+05 1708.000000 5.387805e+06 1.166434e+06 2.73577

**50%** 8.182020e+05 4.547000e+04

597.000000 6.614590e+05 1.388180e+05 3.89785

b. Number of persons state wise vaccinated for first dose in India:



State Vaccinations

0 India 400150406.0

1. Andaman and Nicobar Islands 216046.0
2. Andhra Pradesh 17628583.0
3. Arunachal Pradesh 692475.0

4 Assam 10495293.0

5 Bihar 23350171.0

1. Chandigarh 700285.0
2. Chhattisgarh 9181482.0
3. Dadra and Nagar Haveli and Daman and Diu 584370.0

9 Delhi 7835546.0

10 Goa 1094392.0

11 Gujarat 28101222.0

12 Haryana 10086831.0

1. Himachal Pradesh 4249849.0
2. Jammu and Kashmir 5318516.0

15 Jharkhand 8382280.0

16 Karnataka 25847691.0

17 Kerala 15670747.0

18 Ladakh 188699.0

1. Lakshadweep 51156.0
2. Madhya Pradesh 29723036.0
3. Maharashtra 35040812.0

22 Manipur 1159424.0

23 Meghalaya 938572.0

24 Mizoram 654946.0

25 Nagaland 632120.0

26 Odisha 13954592.0

27 Puducherry 601591.0

28 Punjab 8005636.0

data={

'State': [],

'Vaccinations': []

}

for state in df['State'].unique(): data['State'].append(state)

data['Vaccinations'].append(df[df['State']==state]['First Dose Administered'].max())

df2 = pd.DataFrame(data) print(df2)

|  |  |  |
| --- | --- | --- |
| 29 | Rajasthan | 27008606.0 |
| 30 | Sikkim | 497851.0 |
| 31 | Tamil Nadu | 20836674.0 |
| 32 | Telangana | 11649268.0 |
| 33 | Tripura | 2411195.0 |
| 34 | Uttar Pradesh | 45932488.0 |
| 35 | Uttarakhand | 5070544.0 |
| 36 | West Bengal | 23257417.0 |

# Number of persons state wise vaccinated for second dose in India:

data={

'State': [],

'Vaccinations': []

}

for state in df['State'].unique(): data['State'].append(state)

data['Vaccinations'].append(df[df['State']==state]['Second Dose Administered'].max())

df3 = pd.DataFrame(data) print(df3)

State Vaccinations

0 India 113077994.0

* 1. Andaman and Nicobar Islands 94597.0
  2. Andhra Pradesh 6214312.0
  3. Arunachal Pradesh 186619.0

4 Assam 2208577.0

5 Bihar 4484768.0

1. Chandigarh 223534.0
2. Chhattisgarh 2587695.0
3. Dadra and Nagar Haveli and Daman and Diu 80851.0

9 Delhi 3000536.0

10 Goa 302519.0

11 Gujarat 9051153.0

12 Haryana 2923550.0

1. Himachal Pradesh 1382592.0
2. Jammu and Kashmir 1489826.0

15 Jharkhand 1996014.0

16 Karnataka 7432852.0

17 Kerala 6426984.0

18 Ladakh 70337.0

1. Lakshadweep 17139.0
2. Madhya Pradesh 5733640.0
3. Maharashtra 12112554.0

22 Manipur 246694.0

23 Meghalaya 231982.0

24 Mizoram 206773.0

25 Nagaland 159388.0

26 Odisha 4200094.0

27 Puducherry 151771.0

28 Punjab 2285629.0

29 Rajasthan 8375056.0

30 Sikkim 151538.0

31 Tamil Nadu 4686034.0

32 Telangana 3965624.0

33 Tripura 804099.0

|  |  |
| --- | --- |
| 34 Uttar Pradesh | 8515236.0 |
| 35 Uttarakhand | 1596572.0 |
| 36 West Bengal | 9132961.0 |

# Number of Males vaccinated:

male\_vaccinations= df['Male(Individuals Vaccinated)'].max() print('Number of Males vaccinated: ', male\_vaccinations)

Number of Males vaccinated: 134941971.0

# Number of Females vaccinated:

female\_vaccinations= df['Female(Individuals Vaccinated)'].max() print('Number of Females vaccinated: ', female\_vaccinations)

Number of Females vaccinated: 115668447.0

# Male and Female Vaccinated ratio for Covid19:

plt.pie([male\_vaccinations, female\_vaccinations], labels=['Male','Female'], autopct='%1.1f

([<matplotlib.patches.Wedge at 0x1d3ad0424c0>,

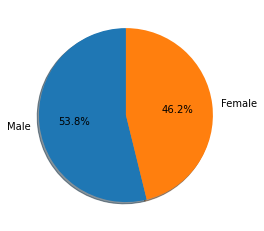
<matplotlib.patches.Wedge at 0x1d3ad042e20>],

[Text(-1.0919832504198743, -0.13256161134523936, 'Male'),

Text(1.0919832504198743, 0.13256161134523922, 'Female')],

[Text(-0.5956272275017496, -0.07230633346103965, '53.8%'),

Text(0.5956272275017496, 0.07230633346103957, '46.2%')])



Conclusion:

Thus, we have analyzed and visualized Covid-19 Vaccination data state-wise and gender-wise.