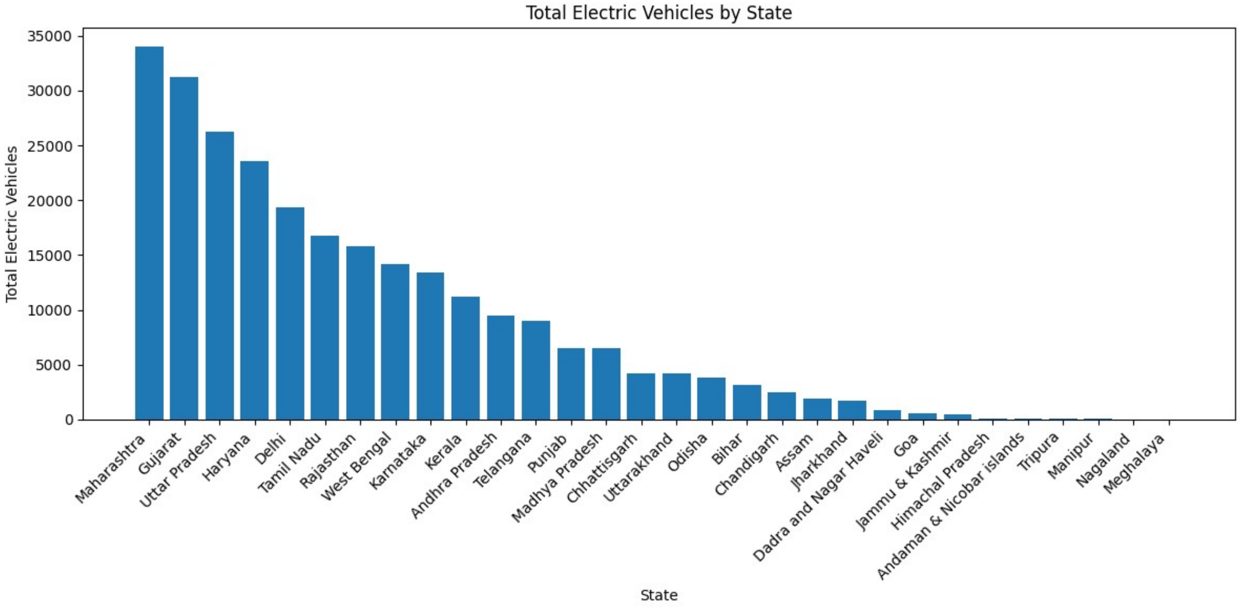
```
import pandas as pd

# Provided data
data = [
    [1, 'Andhra Pradesh', 431, 692, 4689, 0, 0, 3680, 0, 9492],
    [2, 'Assam', 463, 138, 1006, 0, 117, 151, 0, 1875],
    [3, 'Bihar', 252, 430, 2148, 6, 64, 271, 0, 3171],
    [4, 'Chhattisgarh', 613, 382, 2078, 58, 106, 997, 0, 4234],
    [5, 'Delhi', 1395, 251, 5018, 0, 1, 12695, 21, 19381],
    [6, 'Goa', 0, 0, 0, 0, 0, 513, 1, 514],
    [7, 'Gujarat', 7182, 217, 8476, 0, 4, 15388, 0, 31267],
    [8, 'Haryana', 3162, 1504, 13908, 113, 24, 4878, 0, 23589],
    [9, 'Himachal Pradesh', 0, 0, 0, 0, 0, 98, 0, 98],
    [10, 'Jammu & Kashmir', 2, 76, 152, 0, 0, 208, 0, 438],
    [11, 'Jharkhand', 75, 228, 736, 9, 7, 655, 0, 1710],
    [12, 'Karnataka', 784, 1104, 3252, 2, 0, 8242, 2, 13386],
    [13, 'Kerala', 432, 78, 4961, 1, 0, 5729, 1, 11202],
    [14, 'Madhya Pradesh', 503, 378, 2904, 8, 106, 2562, 0, 6461],
    [15, 'Maharashtra', 2630, 2097, 10146, 6, 3, 19129, 2, 34013],
    [16, 'Manipur', 16, 8, 11, 0, 5, 12, 0, 52],
    [17, 'Meghalaya', 0, 0, 0, 0, 0, 6, 0, 6],
    [18, 'Nagaland', 0, 20, 3, 0, 0, 1, 0, 24],
    [19, 'Odisha', 377, 824, 2031, 0, 37, 594, 0, 3863],
    [20, 'Punjab', 698, 300, 1968, 0, 5, 3567, 0, 6538],
    [21, 'Rajasthan', 2036, 1153, 8375, 19, 64, 4116, 0, 15763],
    [22, 'Tamil Nadu', 491, 863, 8260, 0, 0, 7132, 0, 16746],
    [23, 'Telangana', 535, 711, 2256, 2, 0, 5530, 0, 9034],
    [24, 'Tripura', 28, 9, 36, 0, 0, 8, 0, 81],
    [25, 'Uttar Pradesh', 2954, 2355, 15199, 117, 139, 5445, 0,
26209],
    [26, 'Uttarakhand', 423, 168, 3239, 45, 38, 265, 0, 4178],
    [27, 'West Bengal', 1451, 65, 10781, 3, 0, 1840, 0, 14140],
    [28, 'Andaman & Nicobar islands', 0, 0, 0, 0, 0, 82, 0, 82],
    [29, 'Chandigarh', 612, 18, 896, 0, 0, 974, 0, 2500],
    [30, 'Dadra and Nagar Haveli', 4, 0, 9, 0, 0, 803, 0, 816],
    [31, 'Total', 27549, 14069, 112538, 389, 720, 105571, 27, 260863]
]

# Column names
columns = ['Sl. No', 'State', 'Two Wheelers (Category L1 & L2 as per
Central Motor Vehicles Rules)',
           'Two Wheelers (Category L2 (CMVR))', 'Two Wheelers (Max
power not exceeding 250 Watts)',
           'Three Wheelers (Category L5 slow speed as per CMVR)',
'Three Wheelers (Category L5 as per CMVR)',
           'Passenger Cars (Category M1 as per CMVR)', 'Buses', 'Total
in state']

# Create a DataFrame
df = pd.DataFrame(data, columns=columns)
```

```
# Display the DataFrame
print(df.head())
```

```
   Sl. No           State  \
0       1  Andhra Pradesh   
1       2           Assam   
2       3           Bihar   
3       4    Chhattisgarh   
4       5           Delhi   

   Two Wheelers (Category L1 & L2 as per Central Motor Vehicles Rules)  
\
0                                                431                     

1                                                463                     

2                                                252                     

3                                                613                     

4                                               1395                     


   Two Wheelers (Category L2 (CMVR))  \
0                                692   
1                                138   
2                                430   
3                                382   
4                                251   

   Two Wheelers (Max power not exceeding 250 Watts)  \
0                                              4689   
1                                              1006   
2                                              2148   
3                                              2078   
4                                              5018   

   Three Wheelers (Category L5 slow speed as per CMVR)  \
0                                                  0    
1                                                  0    
2                                                  6    
3                                                 58    
4                                                  0    

   Three Wheelers (Category L5 as per CMVR)  \
0                                         0   
```

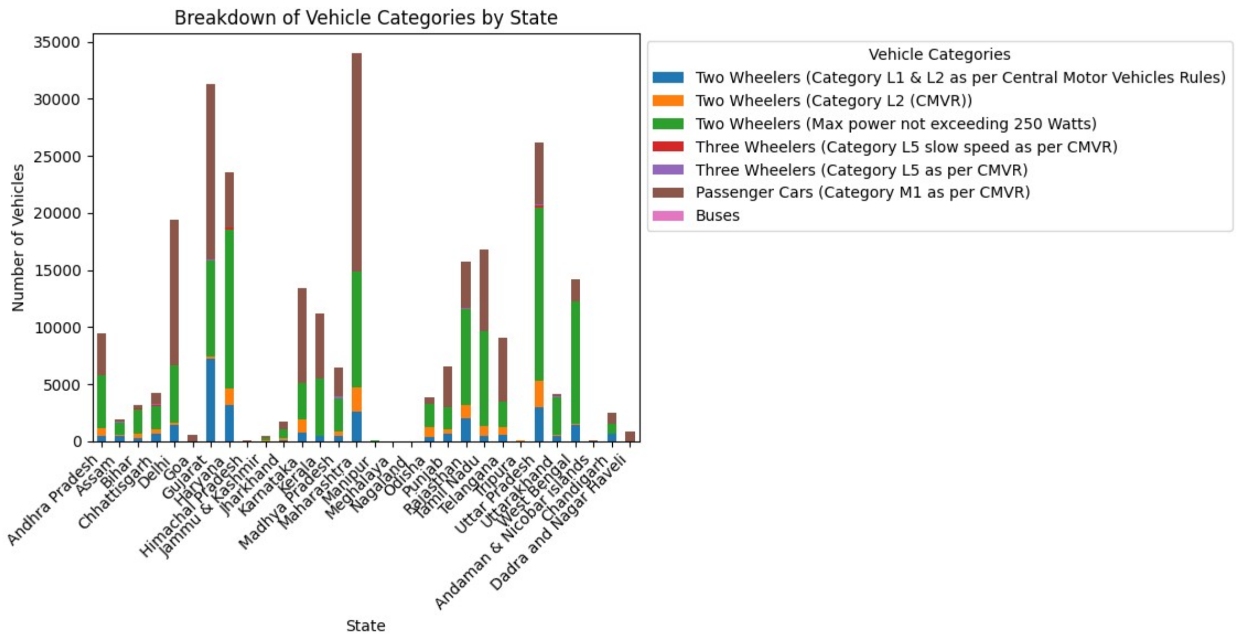
```
1                                             117
2                                              64
3                                             106
4                                               1

   Passenger Cars (Category M1 as per CMVR)  Buses  Total in state
0                                      3680      0            9492
1                                       151      0            1875
2                                       271      0            3171
3                                       997      0            4234
4                                     12695     21           19381
```

```python
import matplotlib.pyplot as plt


df_subset = df.head(30)

# Sort the states in decreasing order based on the total number of EVs
df_subset = df_subset.sort_values('Total in state', ascending=False)

# Plot the bar graph
plt.figure(figsize=(12, 6))
plt.bar(df_subset['State'], df_subset['Total in state'])
plt.title('Total Electric Vehicles by State')
plt.xlabel('State')
plt.ylabel('Total Electric Vehicles')
plt.xticks(rotation=45, ha='right')
plt.tight_layout()
plt.show()
```

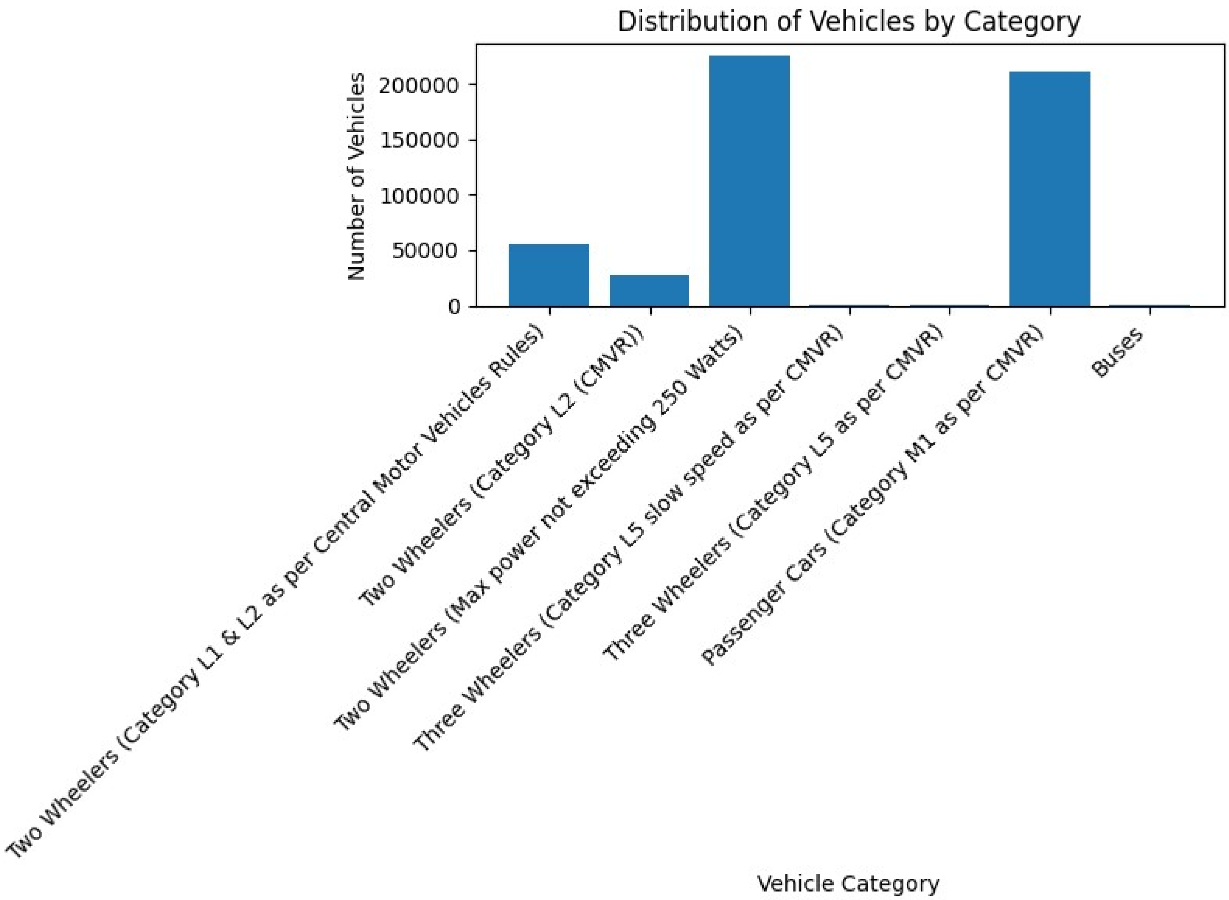


```
import matplotlib.pyplot as plt


df_subset = df.head(30)

# Select the relevant columns for the stacked bar chart
categories = ['Two Wheelers (Category L1 & L2 as per Central Motor
Vehicles Rules)',
              'Two Wheelers (Category L2 (CMVR))',
              'Two Wheelers (Max power not exceeding 250 Watts)',
              'Three Wheelers (Category L5 slow speed as per CMVR)',
              'Three Wheelers (Category L5 as per CMVR)',
              'Passenger Cars (Category M1 as per CMVR)',
              'Buses']

# Create a stacked bar chart
plt.figure(figsize=(12, 6))
ax = df_subset.set_index('State')[categories].plot(kind='bar',
stacked=True)

# Add a legend
ax.legend(bbox_to_anchor=(1, 1), loc='upper left', title='Vehicle
Categories')

plt.title('Breakdown of Vehicle Categories by State')
plt.xlabel('State')
plt.ylabel('Number of Vehicles')
plt.xticks(rotation=45, ha='right')
plt.tight_layout()
plt.show()
```

```
<ipython-input-8-bd51c33173a9>:50: UserWarning: Tight layout not
applied. The left and right margins cannot be made large enough to
accommodate all axes decorations.
  plt.tight_layout()

<Figure size 1200x600 with 0 Axes>
```



```python
import matplotlib.pyplot as plt

# Calculate the total number of vehicles in each category
category_totals = df.iloc[:, 2:-1].sum()

# Plot the bar chart
plt.figure(figsize=(8, 6))
plt.bar(category_totals.index, category_totals)
plt.title('Distribution of Vehicles by Category')
plt.xlabel('Vehicle Category')
plt.ylabel('Number of Vehicles')
plt.xticks(rotation=45, ha='right')
plt.tight_layout()
plt.show()

# Create a table for percentage distribution
percentage_distribution = (category_totals / category_totals.sum()) *
100
percentage_table = pd.DataFrame({'Vehicle Category':
category_totals.index, 'Percentage': percentage_distribution})
percentage_table = percentage_table.round(1)

print("Percentage Distribution:")
print(percentage_table)
```



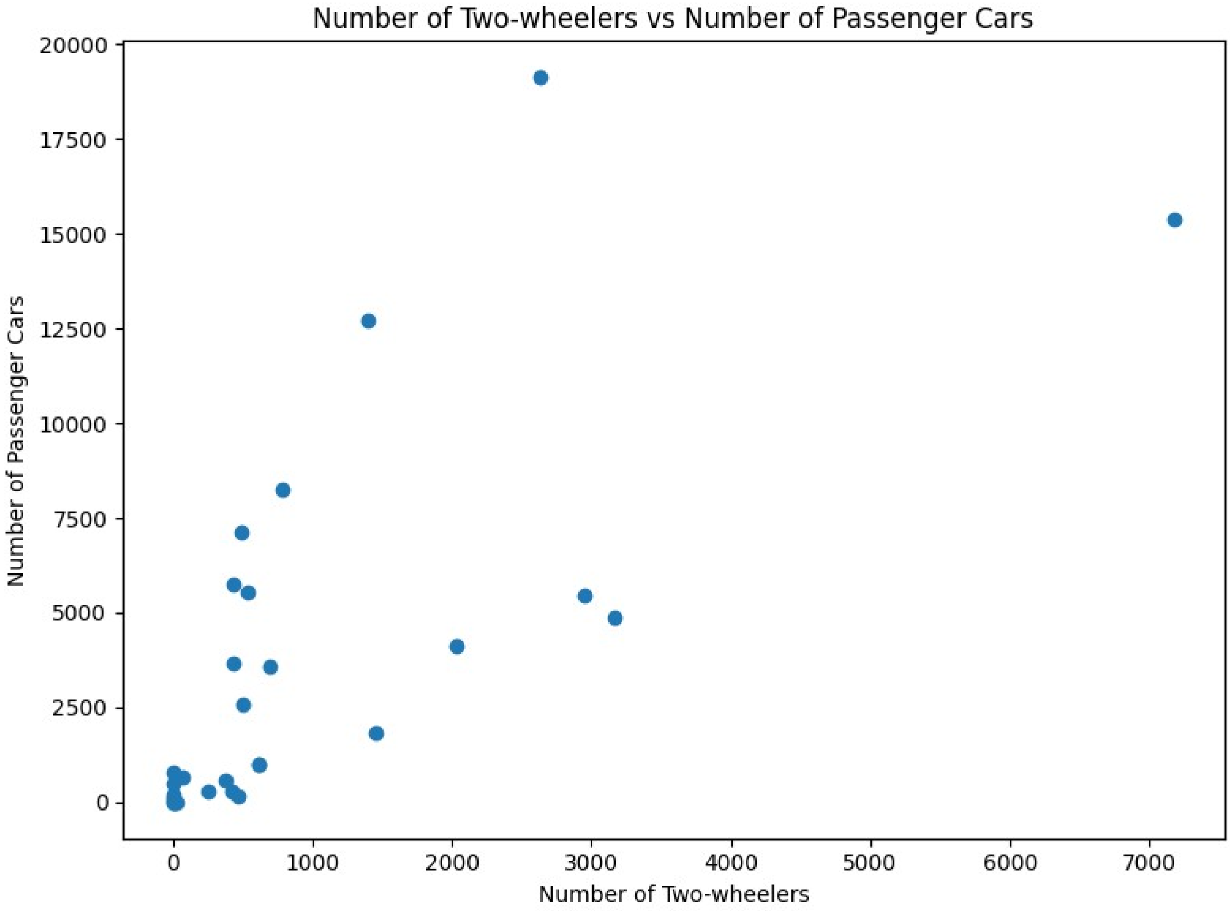
```
Percentage Distribution:

Vehicle Category  \
Two Wheelers (Category L1 & L2 as per Central M...  Two Wheelers
(Category L1 & L2 as per Central ...
Two Wheelers (Category L2 (CMVR))
Two Wheelers (Category L2 (CMVR))
Two Wheelers (Max power not exceeding 250 Watts)     Two Wheelers (Max
power not exceeding 250 Watts)
Three Wheelers (Category L5 slow speed as per C...  Three Wheelers
(Category L5 slow speed as per ...
Three Wheelers (Category L5 as per CMVR)                     Three
Wheelers (Category L5 as per CMVR)
Passenger Cars (Category M1 as per CMVR)                     Passenger
Cars (Category M1 as per CMVR)
Buses
Buses

                                                    Percentage
Two Wheelers (Category L1 & L2 as per Central M...        10.6
Two Wheelers (Category L2 (CMVR))                          5.4
Two Wheelers (Max power not exceeding 250 Watts)          43.1
```

```
Three Wheelers (Category L5 slow speed as per C...         0.1
Three Wheelers (Category L5 as per CMVR)                   0.3
Passenger Cars (Category M1 as per CMVR)                  40.5
Buses                                                      0.0
```

```python
import pandas as pd

# Calculate the total number of vehicles in each category
category_totals = df.iloc[:, 2:-1].sum()

# Calculate the percentage distribution
percentage_distribution = (category_totals / category_totals.sum()) *
100

# Create a DataFrame for percentage distribution
percentage_table = pd.DataFrame({'Vehicle Category':
category_totals.index, 'Percentage': percentage_distribution})
percentage_table = percentage_table.round(1)

# Display the percentage distribution table
print("Percentage Distribution:")
print(percentage_table)
```

```
Percentage Distribution:

Vehicle Category  \
Two Wheelers (Category L1 & L2 as per Central M...  Two Wheelers
(Category L1 & L2 as per Central ...
Two Wheelers (Category L2 (CMVR))
Two Wheelers (Category L2 (CMVR))
Two Wheelers (Max power not exceeding 250 Watts)     Two Wheelers (Max
power not exceeding 250 Watts)
Three Wheelers (Category L5 slow speed as per C...  Three Wheelers
(Category L5 slow speed as per ...
Three Wheelers (Category L5 as per CMVR)                     Three
Wheelers (Category L5 as per CMVR)
Passenger Cars (Category M1 as per CMVR)                     Passenger
Cars (Category M1 as per CMVR)
Buses
Buses

                                                    Percentage
Two Wheelers (Category L1 & L2 as per Central M...        10.6
Two Wheelers (Category L2 (CMVR))                          5.4
Two Wheelers (Max power not exceeding 250 Watts)          43.1
Three Wheelers (Category L5 slow speed as per C...         0.1
Three Wheelers (Category L5 as per CMVR)                   0.3
Passenger Cars (Category M1 as per CMVR)                  40.5
Buses                                                      0.0
```

```python
import matplotlib.pyplot as plt


df_subset = df.head(30)

# Select the relevant columns for the scatter plot
variables = ['Two Wheelers (Category L1 & L2 as per Central Motor
Vehicles Rules)',
             'Passenger Cars (Category M1 as per CMVR)']

# Plot the scatter plot
plt.figure(figsize=(8, 6))
plt.scatter(df_subset[variables[0]], df_subset[variables[1]])
plt.title('Number of Two-wheelers vs Number of Passenger Cars')
plt.xlabel('Number of Two-wheelers')
plt.ylabel('Number of Passenger Cars')
plt.tight_layout()
plt.show()
```


Number of Two-wheelers vs Number of Passenger Cars
Number of Passenger Cars
Number of Two-wheelers