Covid Data Analysis using Plotly

In [21]:

```
import plotly.graph_objs as go
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

day2day = pd.read_csv('day2day.csv')
df_day2day = day2day.apply(pd.to_numeric, errors="ignore")
df_day2day
```

Out[21]:

	Date	Unnamed: 1	Cases	Deaths	Recoveries	Active	New Cases
0	30-01-2020	NaN	1	0	0	1	1
1	02-02-2020	NaN	2	0	0	2	1
2	03-02-2020	NaN	3	0	0	3	1
3	02-03-2020	NaN	6	0	1	5	3
4	03-03-2020	NaN	9	0	1	8	1
5	04-03-2020	NaN	32	0	1	31	22
6	05-03-2020	NaN	33	0	2	31	1
7	06-03-2020	NaN	34	0	2	33	1
8	07-03-2020	NaN	37	0	2	35	3
9	08-03-2020	NaN	43	0	5	38	5
10	09-03-2020	NaN	50	0	5	45	5
11	10-03-2020	NaN	60	0	5	55	6
12	12-03-2020	NaN	73	1	5	67	13
13	13-03-2020	NaN	81	1	5	75	8
14	14-03-2020	NaN	97	2	8	87	16
15	15-03-2020	NaN	107	2	17	88	10
16	16-03-2020	NaN	118	2	17	99	11
17	17-03-2020	NaN	137	3	17	117	23
18	18-03-2020	NaN	151	3	18	130	14
19	19-03-2020	NaN	173	4	20	149	22
20	20-03-2020	NaN	227	4	23	200	50
21	21-03-2020	NaN	283	4	23	256	60
22	22-03-2020	NaN	360	7	24	329	77
23	23-03-2020	NaN	445	9	30	406	74
24	24-03-2020	NaN	519	9	40	469	85
25	25-03-2020	NaN	606	12	43	553	87
26	26-03-2020	NaN	694	16	45	633	88
27	27-03-2020	NaN	834	18	67	749	140
28	28-03-2020	NaN	918	20	79	820	84
29	29-03-2020	NaN	1024	27	96	901	106

In [11]:

```
trace_cases = go.Scatter(
    x=df_day2day['Date'],
    y=df_day2day['Cases'],
    name="Total",
    mode="lines+markers",
    marker=dict(size=10, opacity=0.5),
    line=dict(color='#17BECF'),
    opacity=0.9
)
trace_active = go.Scatter(
    x=df_day2day['Date'],
    y=df_day2day['Active'],
    name="Active",
    mode="lines+markers",
    marker=dict(size=10, opacity=0.5),
    line=dict(color='#FFA500'),
    opacity=0.9
)
trace_deaths = go.Scatter(
    x=df_day2day['Date'],
    y=df_day2day['Deaths'],
    name="Deaths",
    mode="lines+markers",
    marker=dict(size=10, opacity=0.5),
    line=dict(color='#FF0000'),
    opacity=0.9
)
trace_recoveries = go.Scatter(
    x=df_day2day['Date'],
    y=df_day2day['Recoveries'],
    name="Recoveries",
    mode="lines+markers",
    marker=dict(size=10, opacity=0.5),
    line=dict(color='#00FF00'),
    opacity=0.9
)
trace_new = go.Scatter(
    x=df_day2day['Date'],
    y=df_day2day['New Cases'],
    name="Cases",
    mode="lines+markers",
    marker=dict(size=10, opacity=0.5),
    line=dict(color='#000000'),
    opacity=0.9
)
```

In [12]:

```
data1 = [trace_cases, trace_active, trace_deaths, trace_recoveries]
layout1 = dict(title="Date-wise statistics of COVID-19, India")
fig1 = dict(data=data1, layout=layout1)

data_new = [trace_new]
layout_new = dict(title="Day to Day comparison of New Cases")
fig_new = dict(data=data_new, layout=layout_new)
```

In [15]:
```
cvirus = pd.read_csv('covid19-india.csv')
df_new_cvirus = cvirus.apply(pd.to_numeric, errors="ignore")
df_new_cvirus
```

Out[15]:

	S. No.	state_name	active_cases	total_cured	total_deaths
0	1	Andhra Pradesh	18	1	0
1	2	Delhi	41	6	2
2	3	Haryana	16	17	0
3	4	Karnataka	68	5	3
4	5	Kerala	166	15	1
5	6	Maharashtra	155	25	6
6	7	Odisha	3	0	0
7	8	Pondicherry	1	0	0
8	9	Punjab	36	1	1
9	10	Rajasthan	52	3	0
10	11	Tamil Nadu	44	4	1
11	12	Telengana	64	1	1
12	13	Chandigarh	8	0	0
13	14	J&K	28	1	2
14	15	Ladakh	10	3	0
15	16	Uttar Pradesh	54	11	0
16	17	Uttarakhand	5	0	0
17	18	West Bengal	17	0	1
18	19	Chhattisgarh	7	0	0
19	20	Madhya Pradesh	28	0	2
20	21	Himachal Pradesh	2	0	1
21	22	Gujarat	52	1	5
22	23	Bihar	10	0	1
23	24	Manipur	1	0	0
24	25	Mizoram	1	0	0
25	26	Andaman & Nicobar Islands	9	0	0
26	27	Goa	5	0	0

In [16]:

```
trace1 = go.Bar(
    x=df_new_cvirus['state_name'],
    y=df_new_cvirus['active_cases'],
    name="Active",
    marker=dict(color="#FFA500"),
    opacity=0.7,
    marker_line_width=0.5,
    marker_line_color='rgb(0, 0, 0, 0.6)',
)
trace2 = go.Bar(
    x=df_new_cvirus['state_name'],
    y=df_new_cvirus['total_cured'],
    name="Recovered",
    marker=dict(color="#00FF00"),
    marker_line_width=0.5,
    marker_line_color='rgb(0, 0, 0, 0.6)',
)
trace3 = go.Bar(
    x=df_new_cvirus['state_name'],
    y=df_new_cvirus['total_deaths'],
    name="Deaths",
    marker=dict(color="#FF0000"),
    marker_line_width=0.5,
    marker_line_color='rgb(0, 0, 0, 0.6)',
)
```

In [17]:

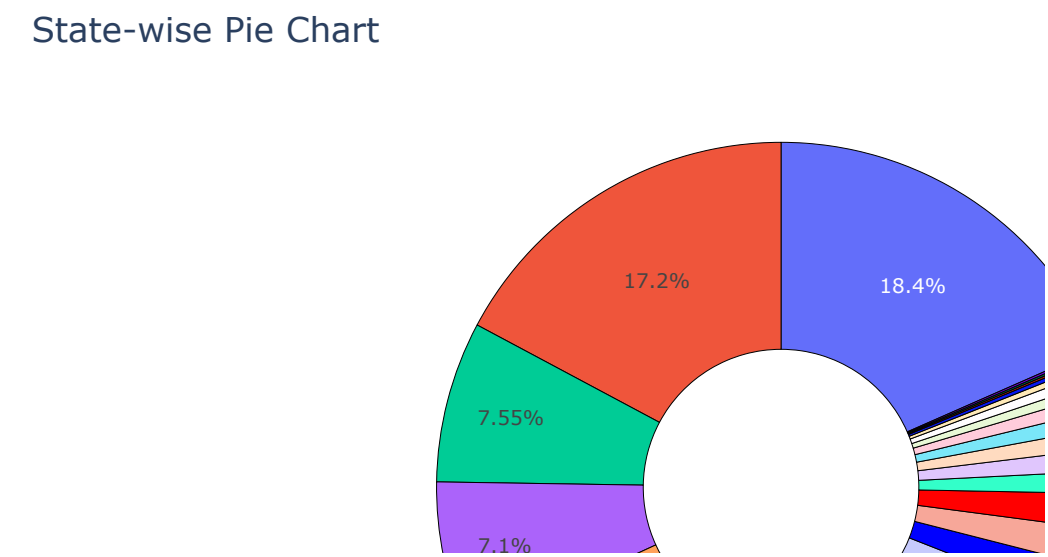
```

data2 = [trace1, trace2, trace3]
colors = ["blue", "green", "red"]
layout2 = dict(
    title="State-wise statistics of COVID-19",
    barmode="stack",
)
```

In [18]:

```
donutLabels = df_new_cvirus['state_name']
donutValues = df_new_cvirus['active_cases']
donutData = go.Pie(
    labels=donutLabels,
    values=donutValues,
    hole=0.4
)
donutLayout = dict(title="State-wise Pie Chart")
```

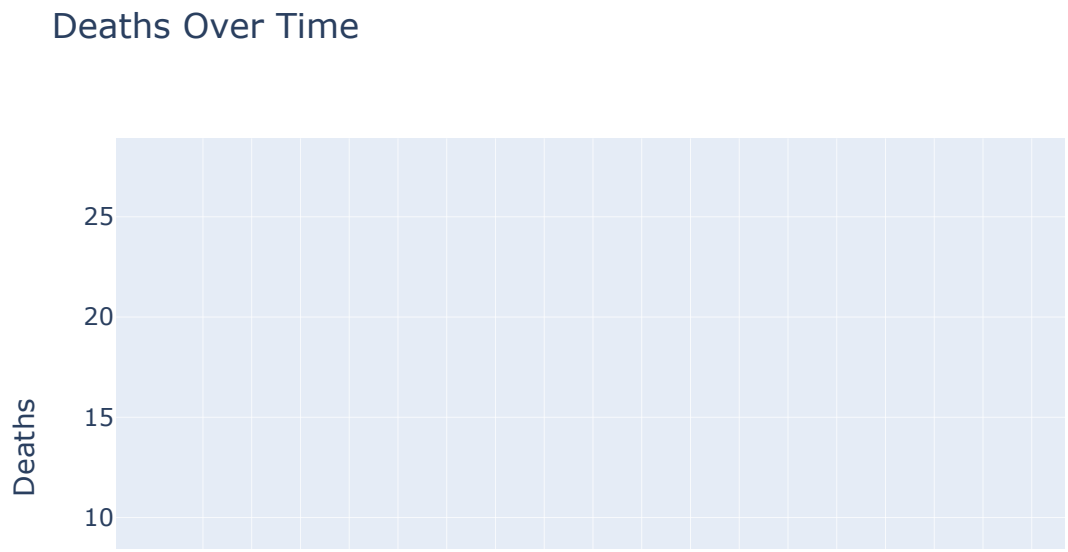
In [19]:

```
fig2 = dict(data=data2, layout=layout2)
fig3 = go.Figure(data=donutData, layout=donutLayout)
fig3.update_traces(hoverinfo='label+percent', textinfo='percent', textfon
                   marker=dict(colors=colors, line=dict(color='#000000',
```



In [22]:

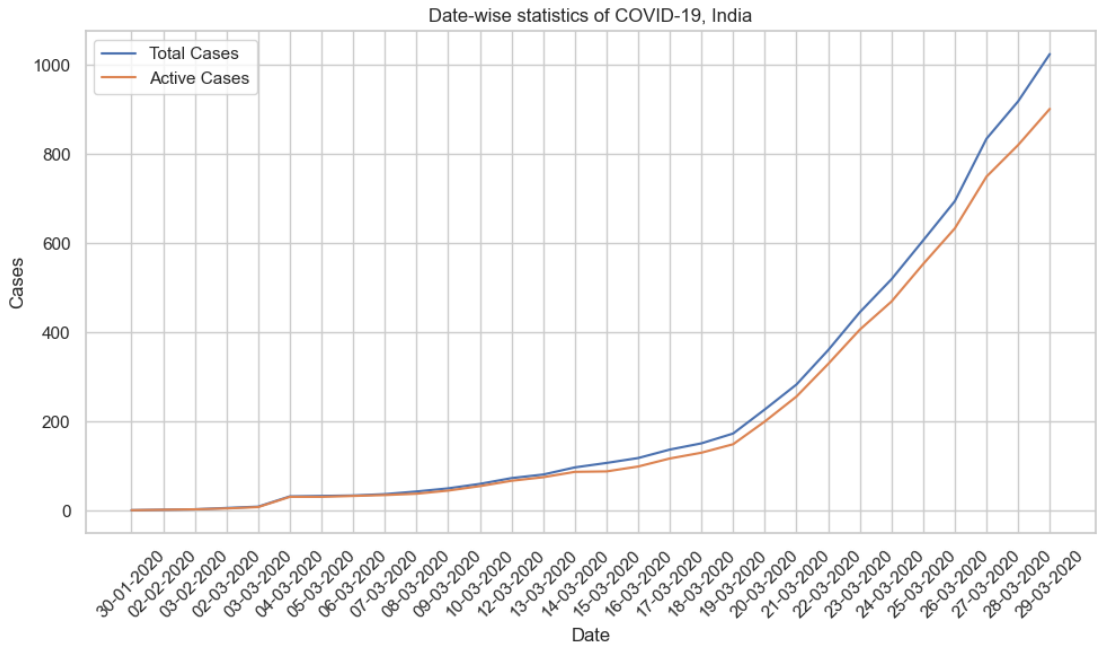
```
fig4 = go.Figure()
fig4.add_trace(go.Scatter(x=df_day2day['Date'], y=df_day2day['Deaths'], m
fig4.update_layout(title='Deaths Over Time', xaxis_title='Date', yaxis_ti

fig5 = go.Figure()
fig5.add_trace(go.Scatter(x=df_day2day['Date'], y=df_day2day['Recoveries'
fig5.update_layout(title='Recovered Over Time', xaxis_title='Date', yaxis

fig4.show()
fig5.show()
```




Recovered Over Time
Recoveries
100
80
60
40

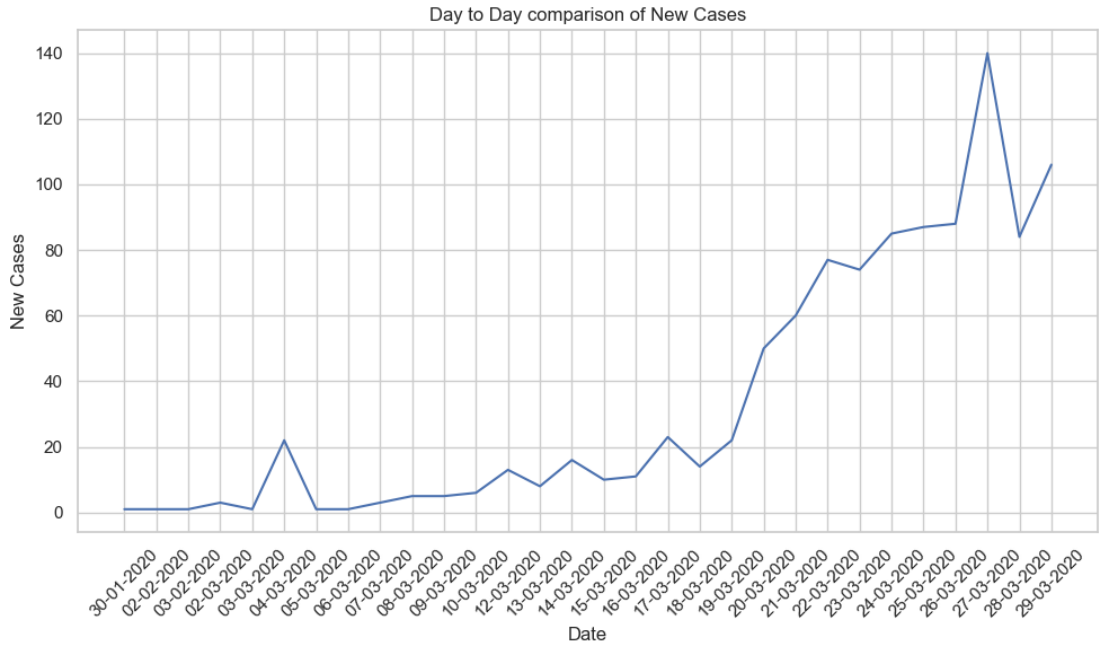
In [28]:

```
# Display plots using matplotlib/seaborn or any other preferred library
sns.set(style="whitegrid")

plt.figure(figsize=(10, 6))
sns.lineplot(data=df_day2day, x='Date', y='Cases', label='Total Cases')
sns.lineplot(data=df_day2day, x='Date', y='Active', label='Active Cases')
plt.title('Date-wise statistics of COVID-19, India')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



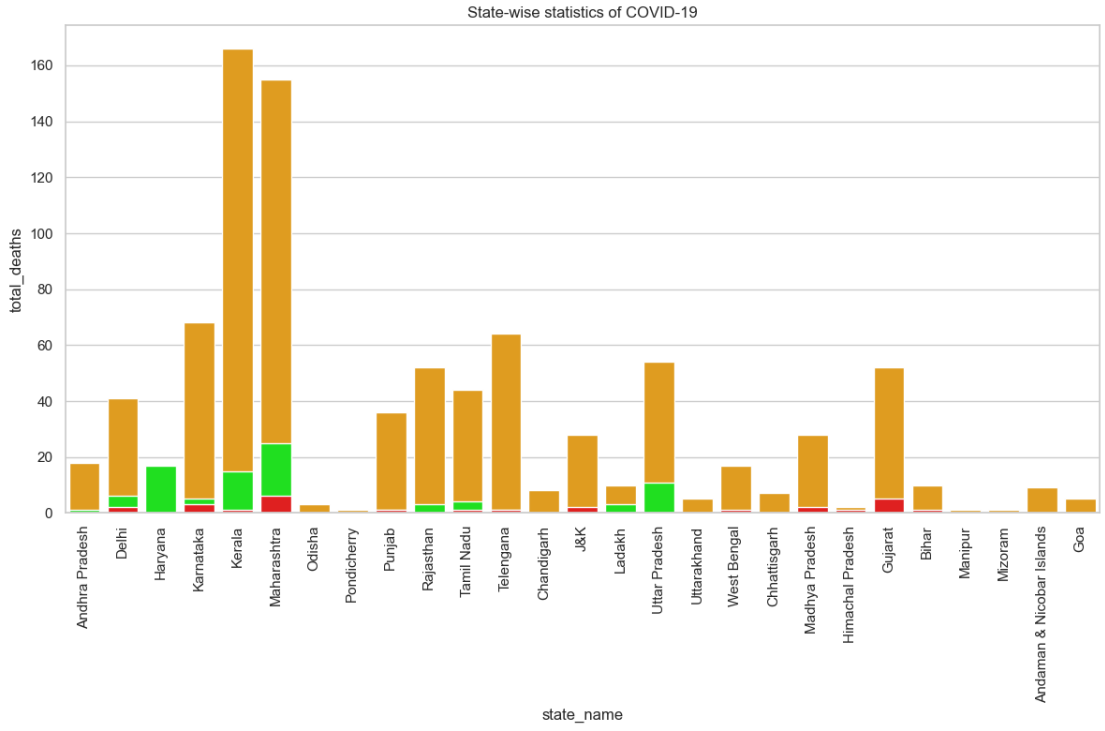
In [29]:

```
plt.figure(figsize=(10, 6))
sns.lineplot(data=df_day2day, x='Date', y='New Cases')
plt.title('Day to Day comparison of New Cases')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



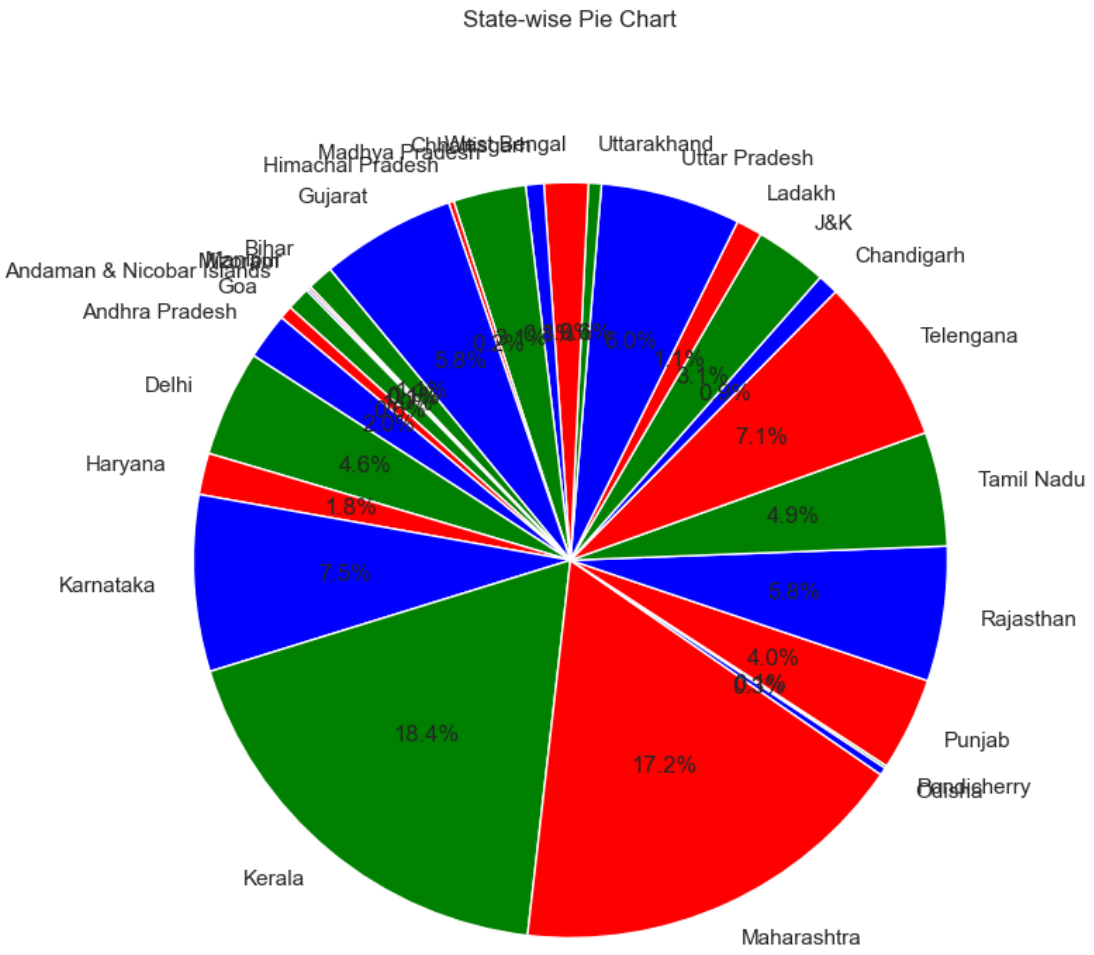
In [30]:

```
plt.figure(figsize=(12, 8))
sns.barplot(data=df_new_cvirus, x='state_name', y='active_cases', color="
sns.barplot(data=df_new_cvirus, x='state_name', y='total_cured', color="#
sns.barplot(data=df_new_cvirus, x='state_name', y='total_deaths', color="
plt.title('State-wise statistics of COVID-19')
plt.xticks(rotation=90)
plt.tight_layout()
plt.show()
```



In [31]:

```
plt.figure(figsize=(8, 8))
plt.pie(donutValues, labels=donutLabels, colors=colors, autopct='%1.1f%%'
plt.title('State-wise Pie Chart')
plt.axis('equal')
plt.tight_layout()
plt.show()
```



In [ ]: