

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import matplotlib.ticker as tic
```

```
In [2]: df=pd.read_csv("cleaned_rainfall")
df
```

Out[2]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	388.5
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	197.2
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	181.2
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	222.2
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	260.7
...
4111	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	117.4
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	145.9
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	72.8
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	169.2
4115	4115	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4	165.4

4116 rows × 20 columns



```
In [3]: df["SUBDIVISION"].value_counts()
```

```
Out[3]: ASSAM & MEGHALAYA      115
        UTTARAKHAND            115
        EAST UTTAR PRADESH      115
        EAST RAJASTHAN          115
        JAMMU & KASHMIR         115
        WEST RAJASTHAN          115
        KONKAN & GOA            115
        PUNJAB                  115
        COASTAL ANDHRA PRADESH  115
        MADHYA MAHARASHTRA      115
        TAMIL NADU              115
        VIDARBHA                115
        RAYALSEEMA              115
        SUB HIMALAYAN WEST BENGAL & SIKKIM 115
        COASTAL KARNATAKA       115
        HARYANA DELHI & CHANDIGARH      115
        NORTH INTERIOR KARNATAKA 115
        JHARKHAND               115
        WEST MADHYA PRADESH      115
        GUJARAT REGION          115
        WEST UTTAR PRADESH      115
        SOUTH INTERIOR KARNATAKA 115
        EAST MADHYA PRADESH      115
        GANGETIC WEST BENGAL     115
        TELANGANA               115
        KERALA                  115
        ORISSA                  115
        CHHATTISGARH           115
        BIHAR                   115
        SAURASHTRA & KUTCH       115
        MATATHWADA              115
        HIMACHAL PRADESH        115
        NAGA MANI MIZO TRIPURA 115
        LAKSHADWEEP             114
        ANDAMAN & NICOBAR ISLANDS 110
        ARUNACHAL PRADESH       97
        Name: SUBDIVISION, dtype: int64
```

COASTAL KARNATAKA

```
In [4]: dat1=df[df["SUBDIVISION"]=="COASTAL KARNATAKA"]
dat1
```

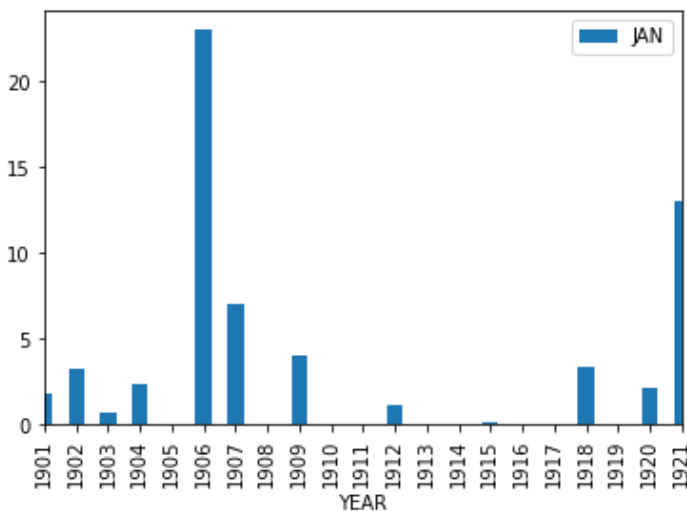
Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3542	3542	COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0	120.5
3543	3543	COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4	180.4
3544	3544	COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4	185.0
3545	3545	COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3	127.2
3546	3546	COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9	222.2
...
3652	3652	COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2	178.8
3653	3653	COASTAL KARNATAKA	2012	6.0	11.4	5.1	77.0	22.9	650.9	754.6	1027.6	382.0	115.1
3654	3654	COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1	265.1
3655	3655	COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3	226.4
3656	3656	COASTAL KARNATAKA	2015	1.4	1.0	32.3	72.2	150.3	735.3	930.9	575.2	260.3	208.5

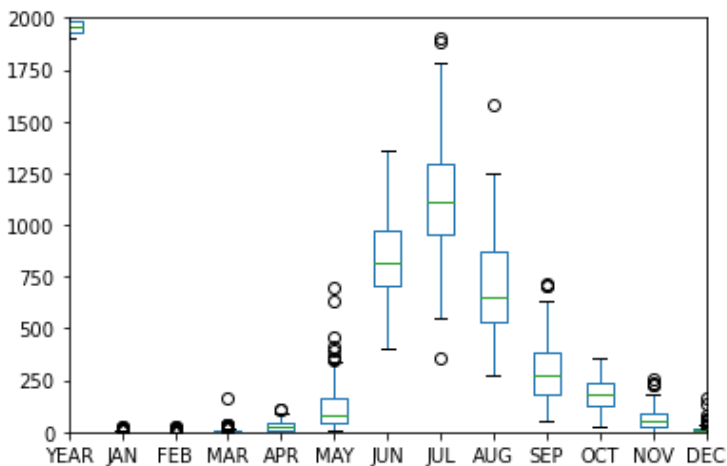
115 rows × 20 columns

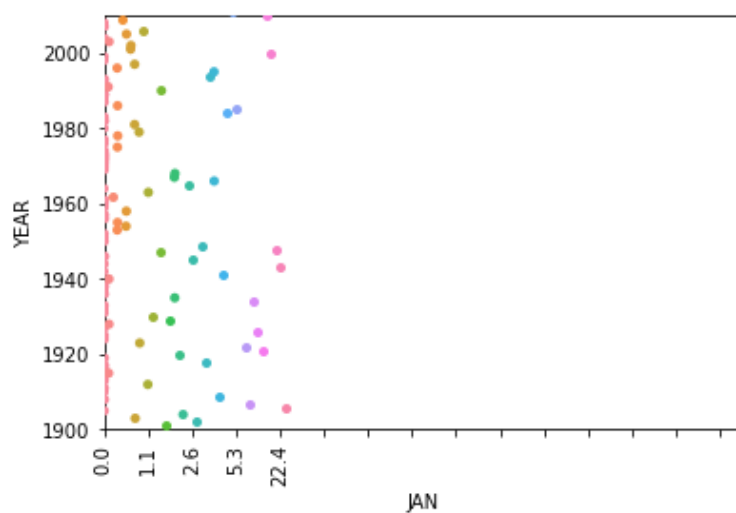
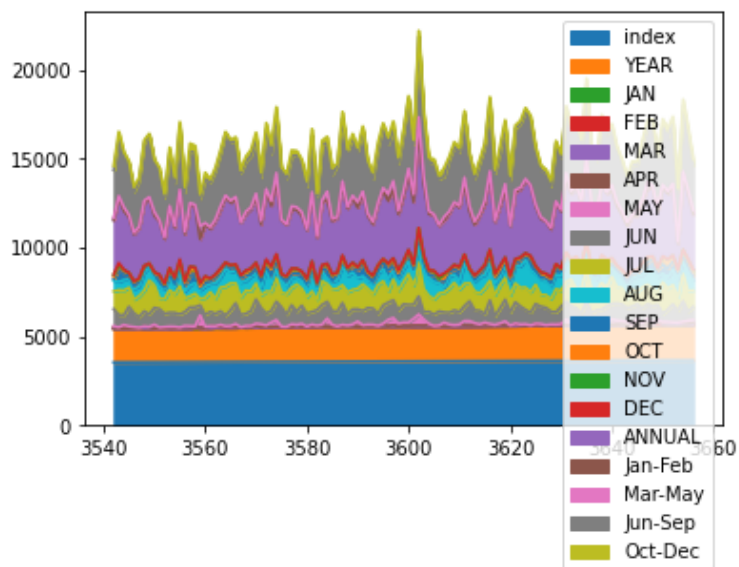


```
In [5]: dat1.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat1.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat1.plot.area()
dat1.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat1["JAN"],y=dat1["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat1["JAN"],rotation="vertical")
plt.gca().xaxis.set_major_locator(tic.MultipleLocator(base=10))
plt.show()
dat1.plot.hist()
```

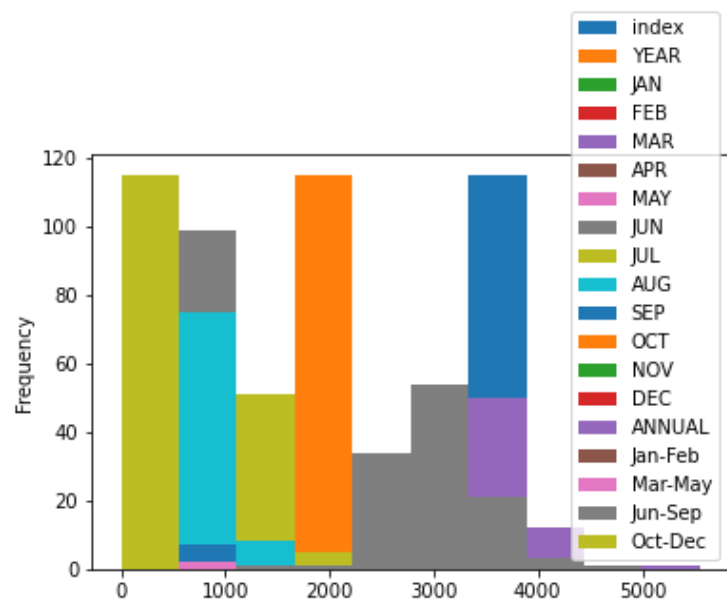


<Figure size 4320x2160 with 0 Axes>

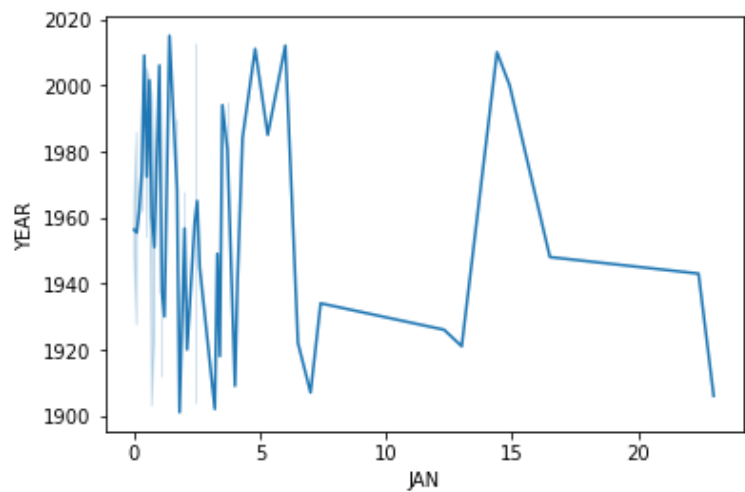




Out[5]: <AxesSubplot:ylabel='Frequency'>



```
In [6]: sns.lineplot(x=dat1["JAN"],y=dat1["YEAR"])
plt.show()
```



MADHYA MAHARASHTRA

```
In [7]: dat2=df[df["SUBDIVISION"]=="MADHYA MAHARASHTRA"]
dat2
```

Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2622	2622	MADHYA MAHARASHTRA	1901	18.8	0.6	7.7	36.6	30.4	107.7	215.9	194.1	83.7	68.7	40.0
2623	2623	MADHYA MAHARASHTRA	1902	7.8	0.0	0.1	5.0	9.8	102.6	210.9	114.5	169.5	60.4	40.0
2624	2624	MADHYA MAHARASHTRA	1903	7.6	0.0	0.0	3.2	77.2	86.3	281.8	155.5	142.3	74.2	7.0
2625	2625	MADHYA MAHARASHTRA	1904	0.4	4.7	1.7	3.0	18.7	114.6	126.5	59.5	183.0	91.1	0.0
2626	2626	MADHYA MAHARASHTRA	1905	0.0	1.2	0.0	2.3	23.6	65.0	252.8	79.0	52.6	52.9	8.0
...
2732	2732	MADHYA MAHARASHTRA	2011	0.0	0.3	0.3	5.0	2.9	133.3	261.4	238.1	148.4	62.8	0.0
2733	2733	MADHYA MAHARASHTRA	2012	0.0	0.0	0.0	3.0	1.4	67.9	203.0	187.8	129.5	95.2	2.0
2734	2734	MADHYA MAHARASHTRA	2013	0.1	5.3	0.8	5.7	6.0	212.4	311.8	147.0	210.3	57.8	4.0
2735	2735	MADHYA MAHARASHTRA	2014	3.1	6.2	24.4	7.5	29.8	44.0	277.9	240.3	120.4	38.5	32.0
2736	2736	MADHYA MAHARASHTRA	2015	1.4	0.8	41.2	9.6	24.4	177.0	111.7	67.2	146.6	48.3	16.0

115 rows × 20 columns

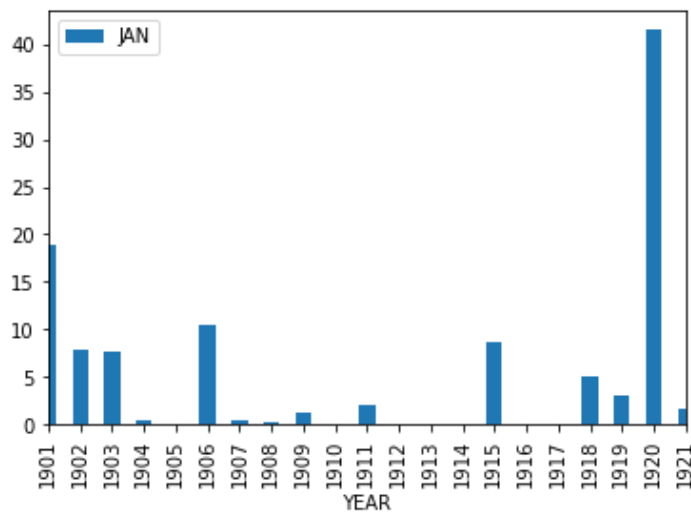


In [8]:

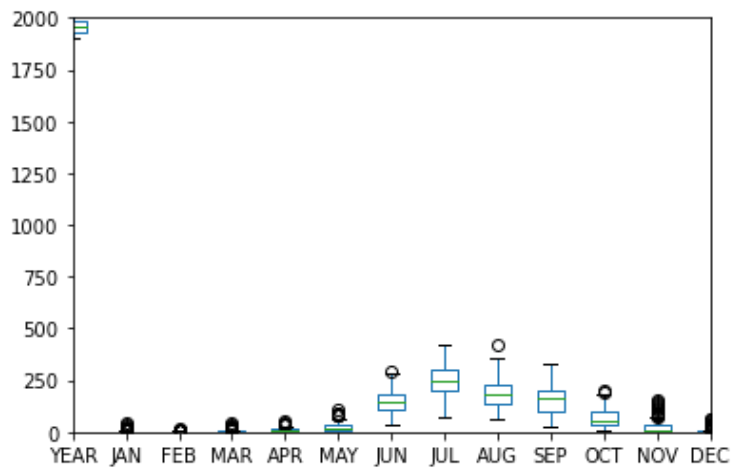
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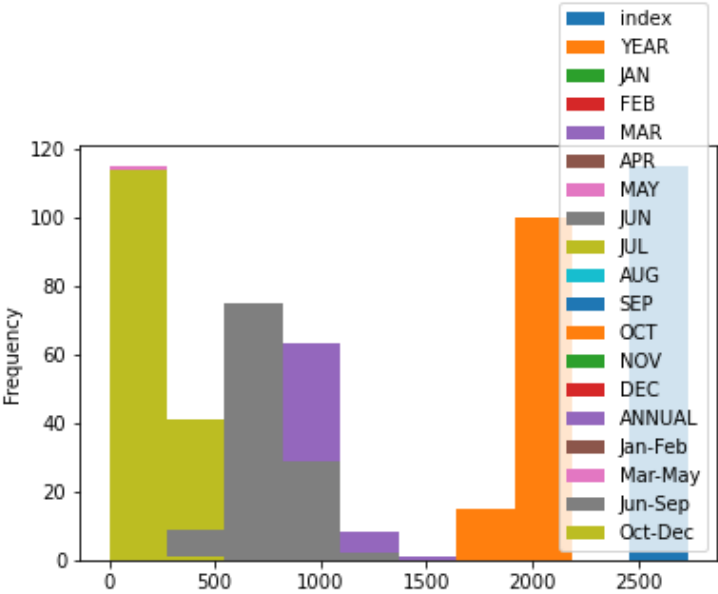
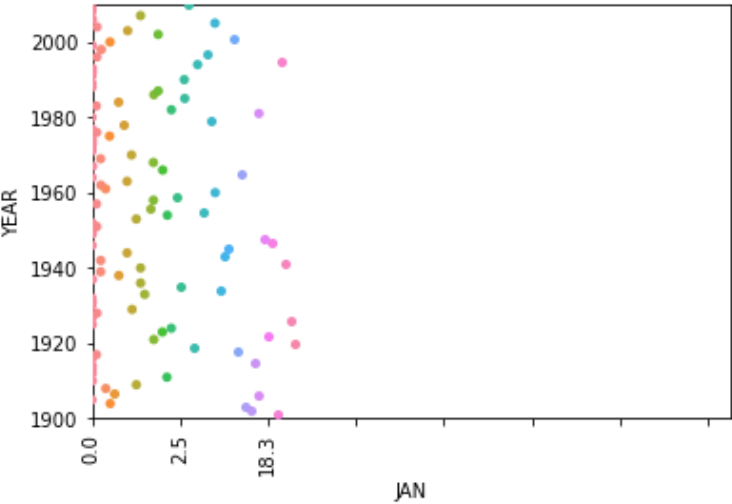
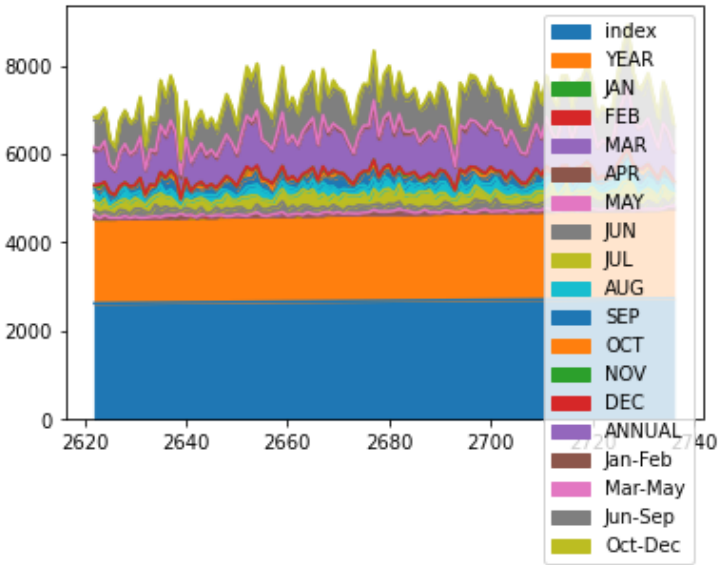
dat2.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat2.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat2.plot.area()
dat2.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat2["JAN"],y=dat2["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat2["JAN"],rotation="vertical")
plt.gca().xaxis.set_major_locator(tic.MultipleLocator(base=20))
plt.show()
dat2.plot.hist()
plt.show()

```



<Figure size 4320x2160 with 0 Axes>






```
In [9]: sns.lineplot(x=dat2["JAN"],y=dat2["YEAR"])  
plt.show()
```

