

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

4116 rows × 20 columns



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

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

EAST UTTAR PRADESH

In [4]:

dat1=df[df["SUBDIVISION"]=="EAST UTTAR PRADESH"]
dat1

Out[4]:

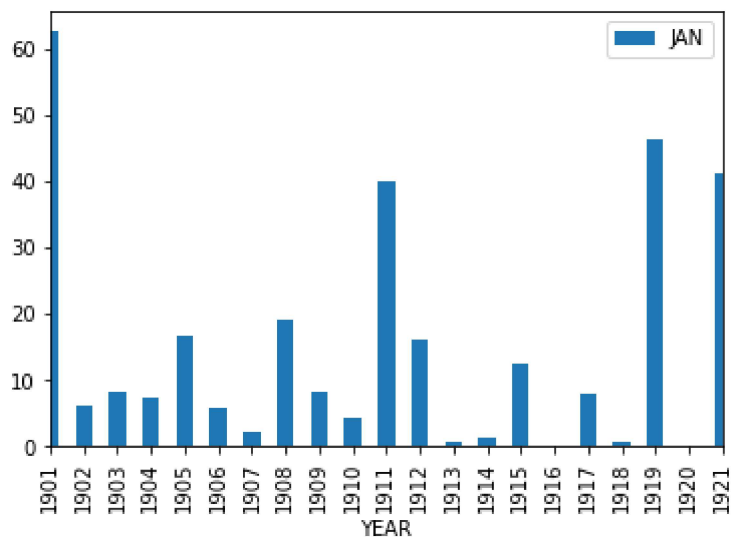
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1012	1012	EAST UTTAR PRADESH	1901	62.6	31.3	8.2	1.1	13.6	21.8	226.5	285.6	215.4	4.9
1013	1013	EAST UTTAR PRADESH	1902	6.1	2.3	2.4	2.0	21.4	32.5	411.5	155.4	257.2	13.1
1014	1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.1
1015	1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.0
1016	1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.1
...
1122	1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.0
1123	1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.1
1124	1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.1
1125	1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.1
1126	1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.1

115 rows × 20 columns

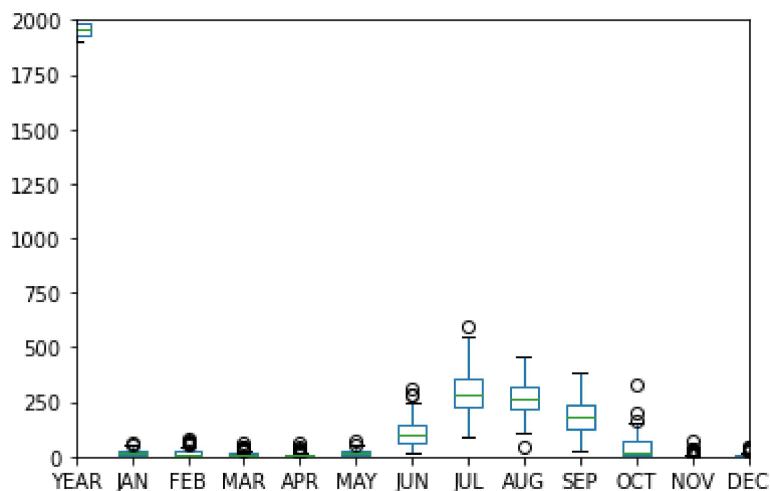
```

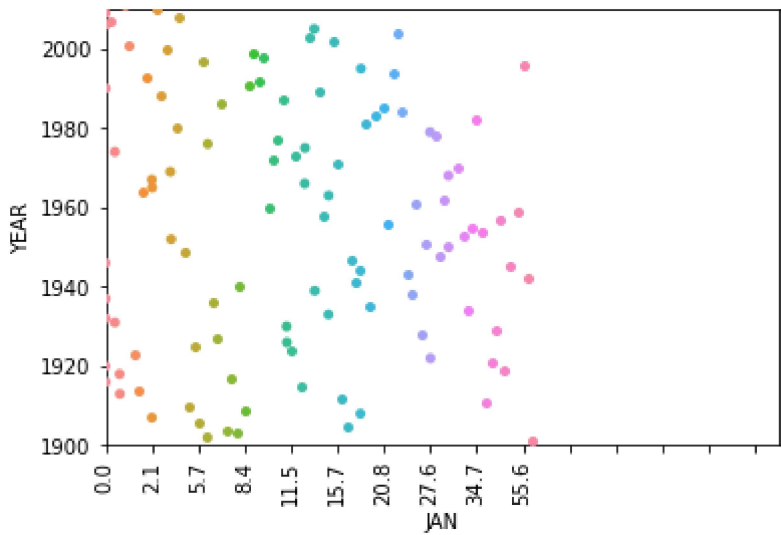
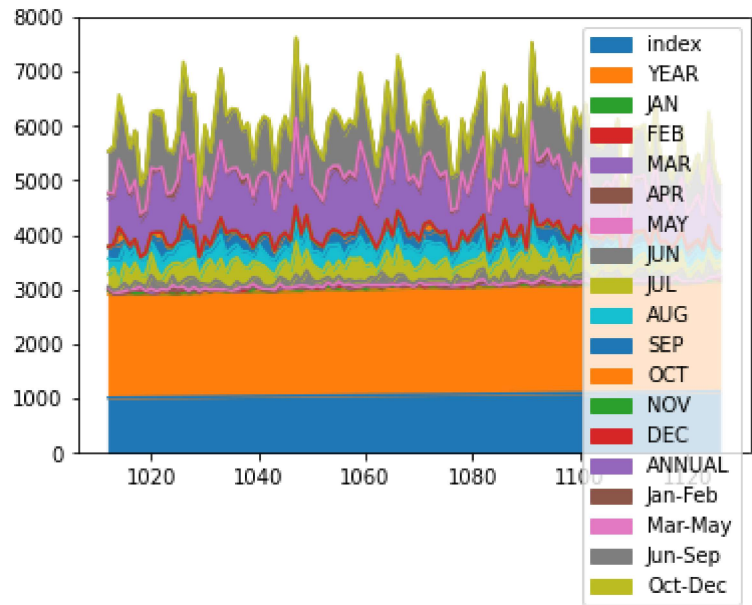
In [5]: dat1.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat1.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat1.plot.area()
dat1.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat1["JAN"],y=dat1["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat1["JAN"],rotation="vertical")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

```

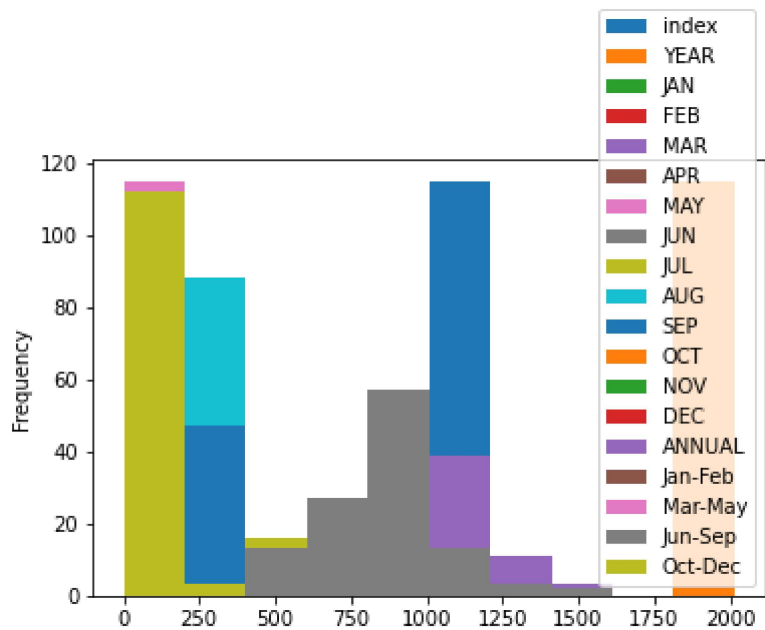


<Figure size 4320x2160 with 0 Axes>

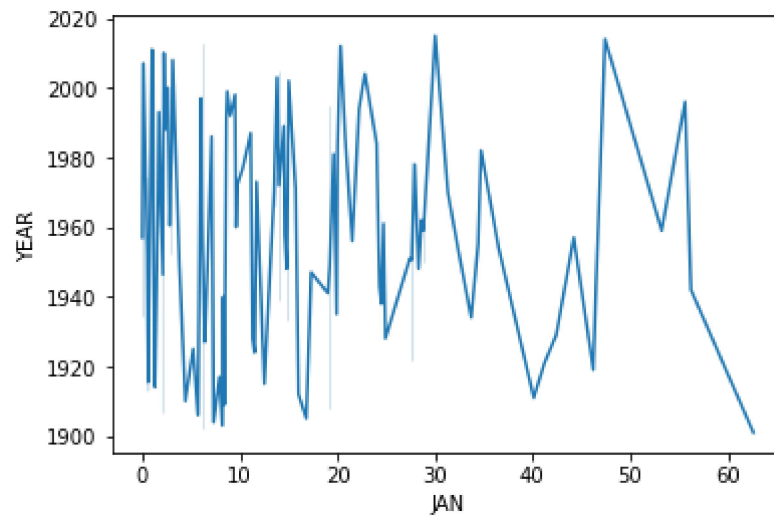




Out[5]: <AxesSubplot:ylabel='Frequency'>



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



EAST RAJASTHAN

In [7]:

dat2=df[df["SUBDIVISION"]=="EAST RAJASTHAN"]
dat2

Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1932	1932	EAST RAJASTHAN	1901	21.6	8.9	2.9	0.7	5.0	15.0	164.8	175.6	7.5	9.8
1933	1933	EAST RAJASTHAN	1902	4.1	0.7	0.0	1.8	9.9	34.6	247.6	116.7	145.6	14.4
1934	1934	EAST RAJASTHAN	1903	1.9	0.7	1.3	0.1	12.9	15.6	238.2	229.1	168.5	17.8
1935	1935	EAST RAJASTHAN	1904	4.3	5.5	21.7	0.2	27.5	49.9	289.7	223.5	50.2	1.5
1936	1936	EAST RAJASTHAN	1905	4.1	8.8	3.2	1.6	2.0	14.4	130.5	30.9	83.8	0.0
...
2042	2042	EAST RAJASTHAN	2011	0.0	11.2	0.2	0.5	5.1	140.9	193.6	284.1	166.4	0.0
2043	2043	EAST RAJASTHAN	2012	1.9	0.0	0.0	3.6	9.5	11.2	170.5	365.0	131.3	0.5
2044	2044	EAST RAJASTHAN	2013	1.4	21.7	0.4	3.2	1.0	90.6	319.0	278.5	88.0	30.6
2045	2045	EAST RAJASTHAN	2014	28.4	10.0	6.4	7.3	8.4	23.5	197.1	261.0	136.9	3.2
2046	2046	EAST RAJASTHAN	2015	12.1	0.1	55.9	15.9	3.5	96.4	297.6	142.8	20.1	5.0

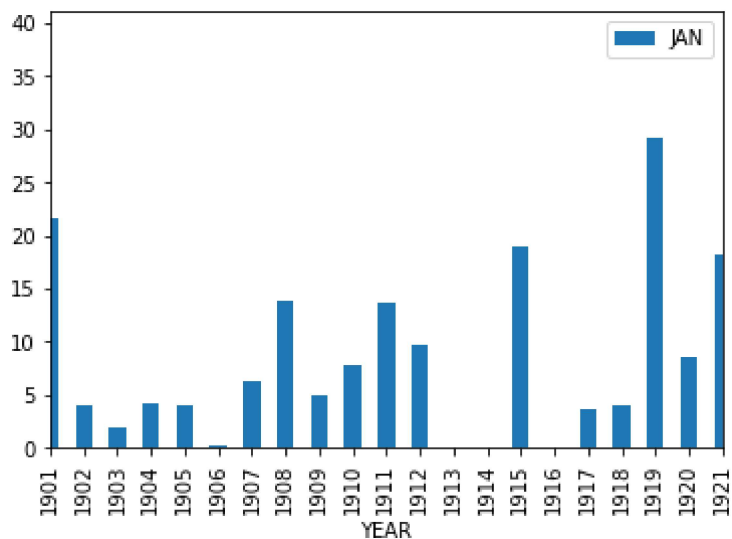
115 rows × 20 columns

In [8]:

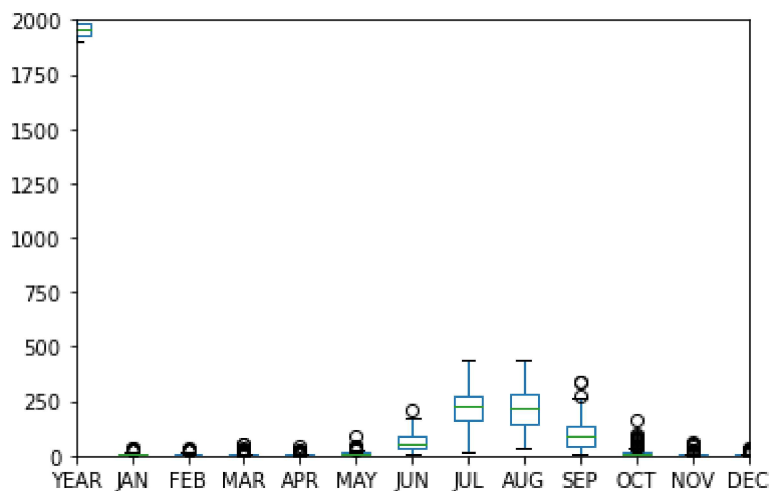
```

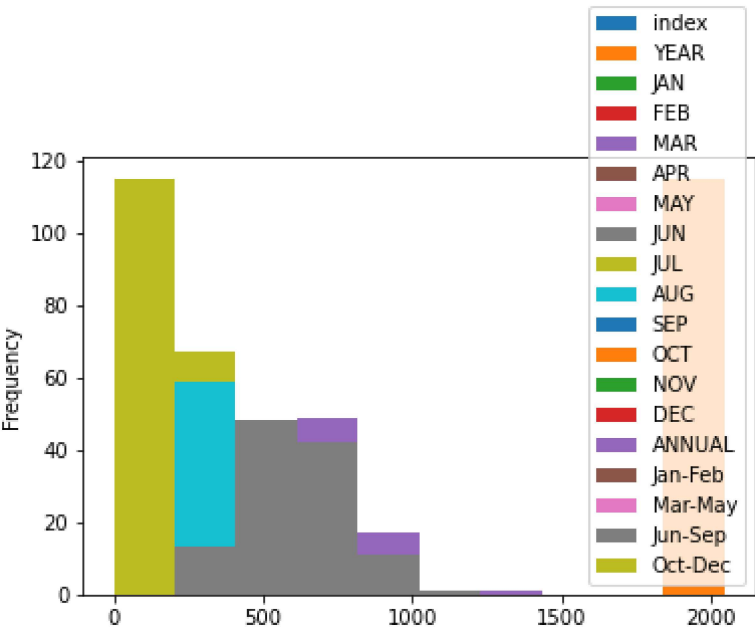
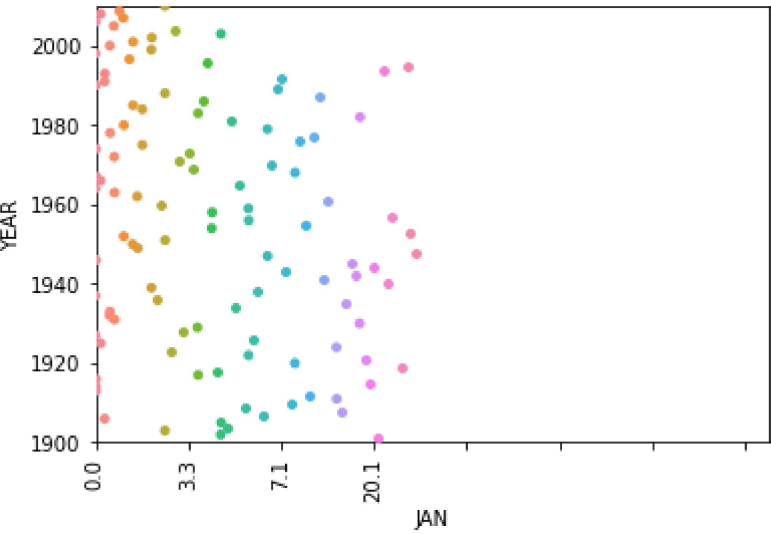
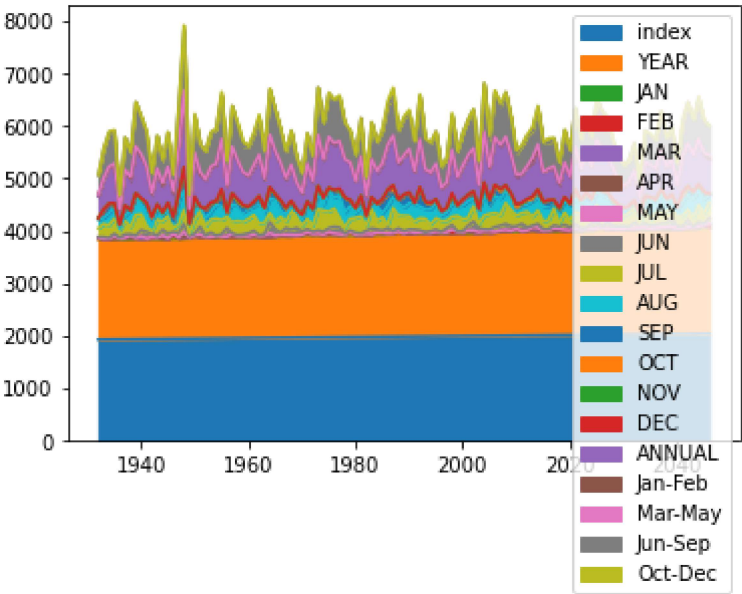
dat2.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat2.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat2.plot.area()
dat2.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat2["JAN"],y=dat2["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat2["JAN"],rotation="vertical")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

