

```
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 × 13 columns

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

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

TELANGANA

```
In [4]: dat1=df[df["SUBDIVISION"]=="TELANGANA"]
dat1
```

Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3197	3197	TELANGANA	1901	6.9	41.8	7.8	45.2	22.0	123.6	237.8	177.2	77.7	75.9
3198	3198	TELANGANA	1902	0.0	0.0	0.2	10.7	7.3	52.4	146.3	142.8	190.5	41.7
3199	3199	TELANGANA	1903	12.9	4.6	0.0	9.9	40.7	99.2	505.2	246.7	191.9	155.9
3200	3200	TELANGANA	1904	0.0	0.0	10.8	0.8	14.7	104.2	139.5	50.0	162.3	44.9
3201	3201	TELANGANA	1905	0.0	4.3	12.8	27.6	32.2	129.5	82.4	237.3	179.1	19.0
...
3307	3307	TELANGANA	2011	0.0	11.9	2.6	25.6	9.3	83.9	268.2	225.9	107.6	13.9
3308	3308	TELANGANA	2012	6.7	0.0	0.2	14.0	8.4	124.4	300.3	229.9	202.4	83.0
3309	3309	TELANGANA	2013	2.4	29.0	0.2	24.4	8.5	213.4	453.8	230.6	161.4	205.9
3310	3310	TELANGANA	2014	0.2	2.9	58.3	10.3	73.3	62.3	146.0	205.2	146.8	29.0
3311	3311	TELANGANA	2015	17.5	0.0	43.0	65.7	23.3	266.9	104.4	160.5	158.3	15.0

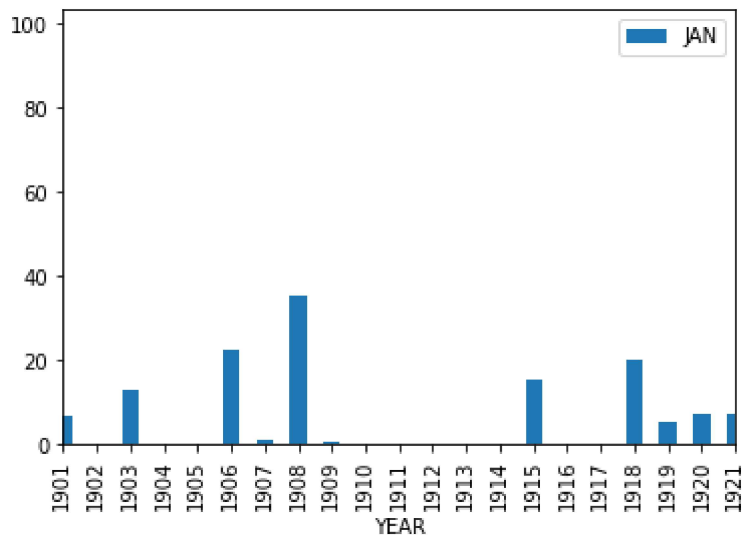
115 rows × 20 columns



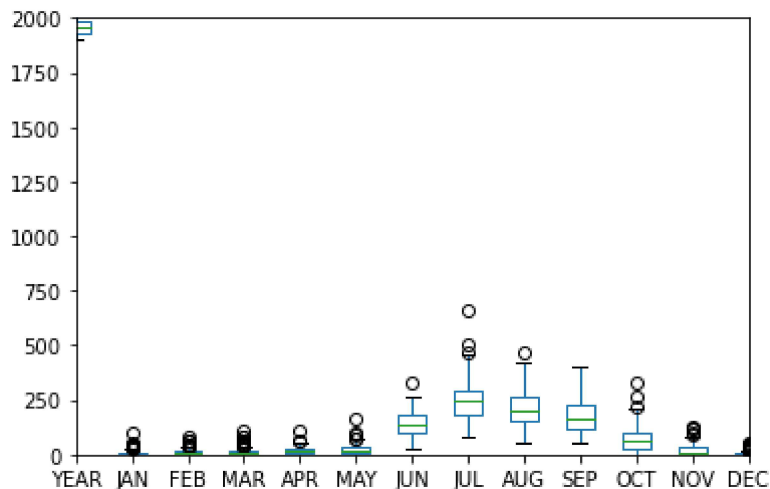
```

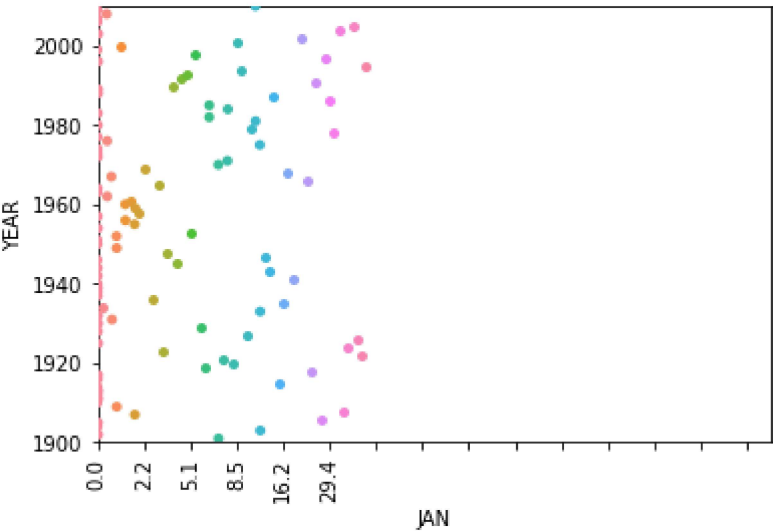
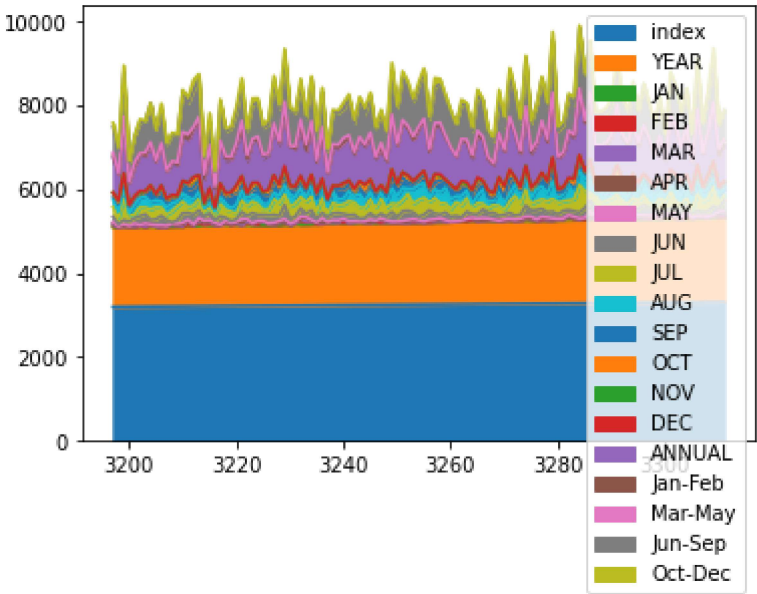
In [5]: dat1.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat1.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat1.plot.area()
dat1.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat1["JAN"],y=dat1["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat1["JAN"],rotation="vertical")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

```

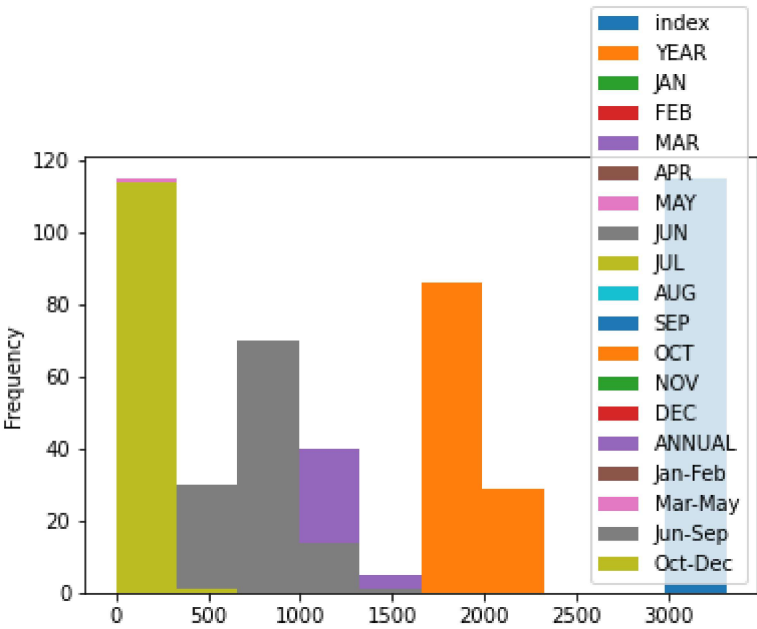


<Figure size 4320x2160 with 0 Axes>

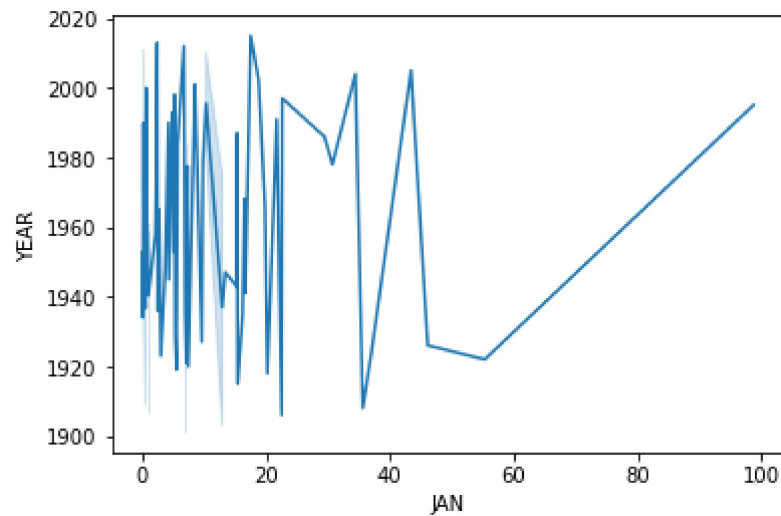




Out[5]: <AxesSubplot:ylabel='Frequency'>



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



SAURASHTRA & KUTCH

In [7]:

dat2=df[df["SUBDIVISION"]=="SAURASHTRA & KUTCH"]
dat2

Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2392	2392	SAURASHTRA & KUTCH	1901	1.9	0.0	0.1	0.2	3.2	9.1	87.8	62.5	12.0	3.8
2393	2393	SAURASHTRA & KUTCH	1902	0.1	0.0	0.0	0.5	1.1	14.4	92.9	160.0	123.9	1.5
2394	2394	SAURASHTRA & KUTCH	1903	0.5	0.0	1.7	0.0	3.1	10.5	337.9	96.1	61.9	11.7
2395	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.5
2396	2396	SAURASHTRA & KUTCH	1905	1.5	1.0	0.6	0.4	0.0	6.4	254.5	12.3	12.8	0.4
...
2502	2502	SAURASHTRA & KUTCH	2011	0.0	1.4	0.0	0.0	0.0	26.0	212.7	290.9	210.1	1.2
2503	2503	SAURASHTRA & KUTCH	2012	0.0	0.0	0.0	0.2	0.1	22.4	34.7	34.5	228.5	2.4
2504	2504	SAURASHTRA & KUTCH	2013	1.7	0.2	0.1	8.5	0.1	127.7	171.2	83.3	260.2	28.6
2505	2505	SAURASHTRA & KUTCH	2014	0.3	0.0	0.1	0.5	2.1	17.3	137.7	118.8	99.2	5.2
2506	2506	SAURASHTRA & KUTCH	2015	0.9	0.0	4.4	2.1	0.8	112.6	226.7	10.6	79.9	3.5

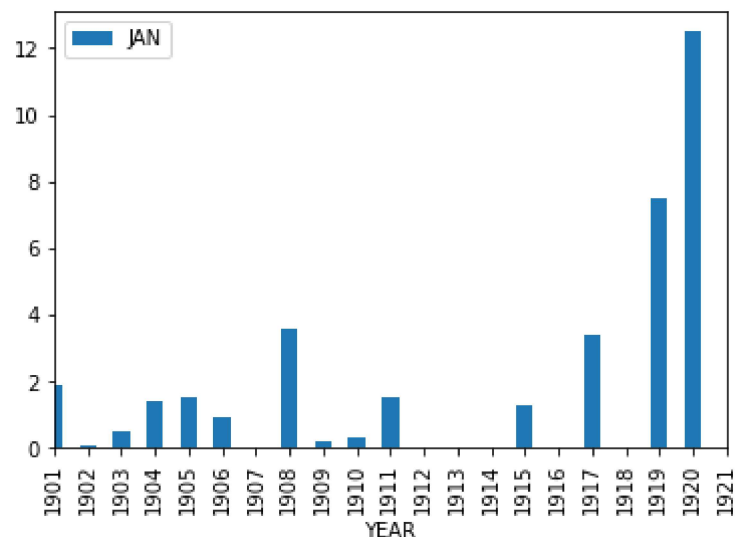
115 rows × 20 columns

In [8]:

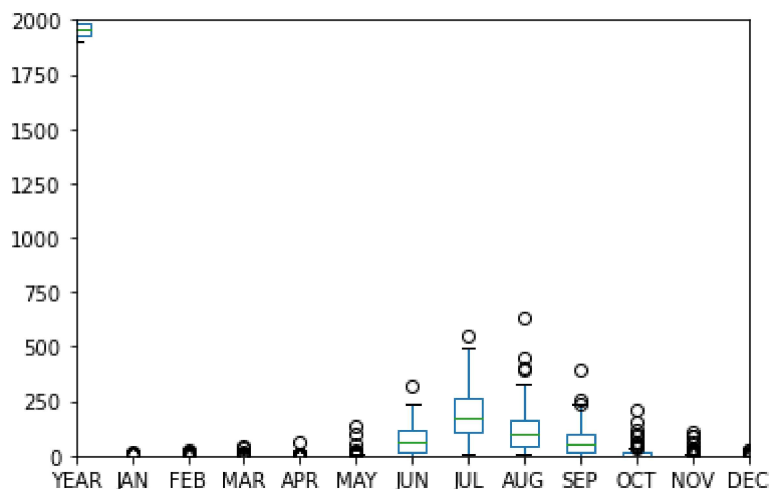
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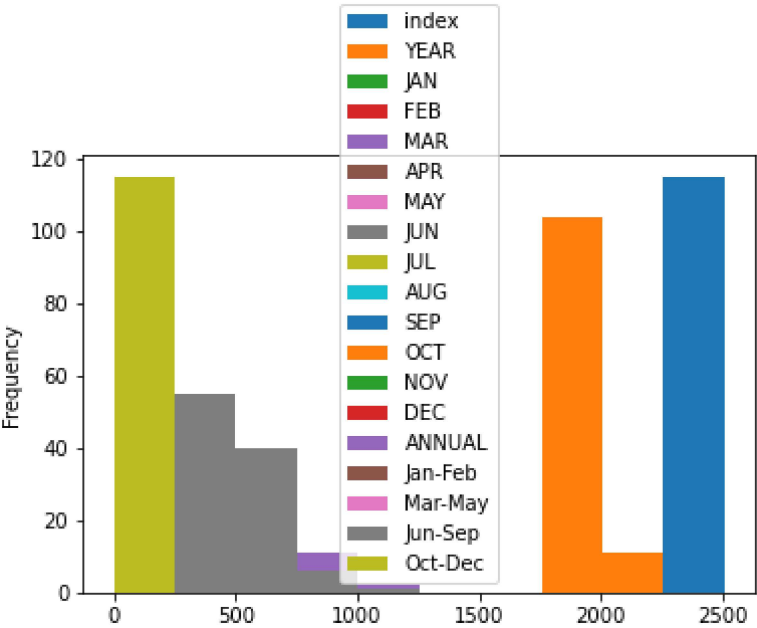
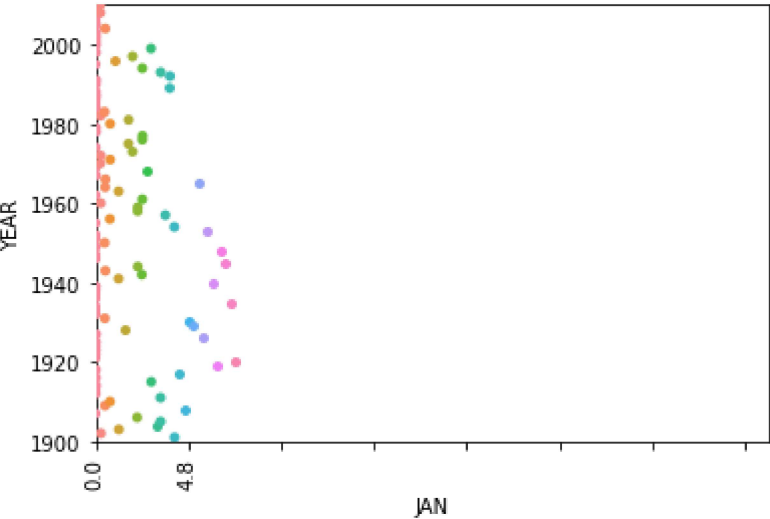
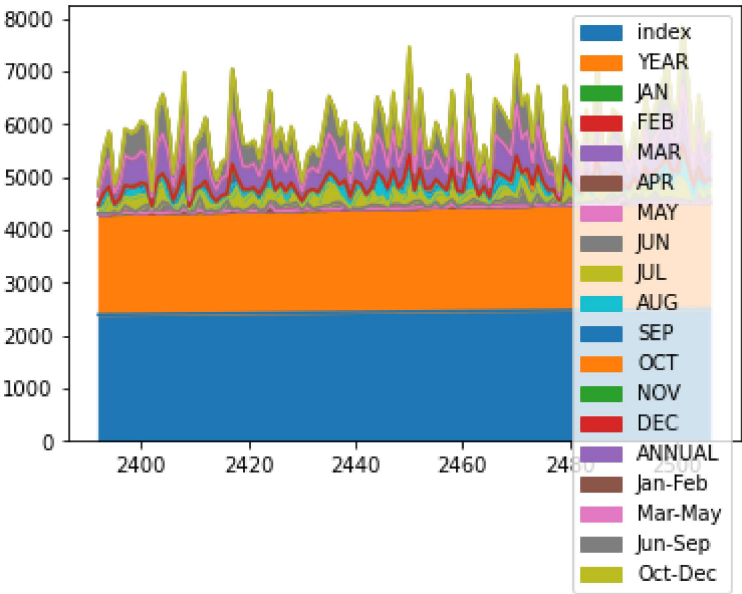
dat2.plot.bar("YEAR", "JAN")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat2.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat2.plot.area()
dat2.plot.scatter("YEAR", "JAN")
sns.stripplot(x=dat2["JAN"],y=dat2["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat2["JAN"],rotation="vertical")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

```



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

