

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

RAYALSEEMA

In [4]:

dat1=df[df["SUBDIVISION"]=="RAYALSEEMA"]
dat1

Out[4]:

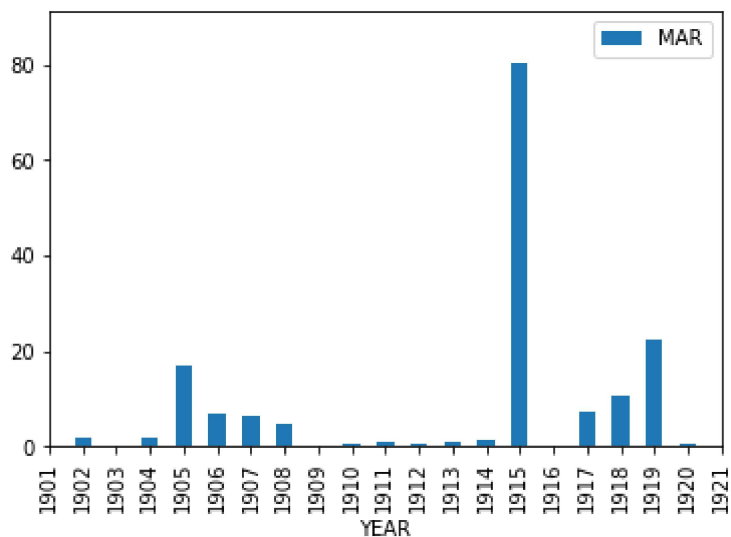
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3312	3312	RAYALSEEMA	1901	7.0	50.2	0.0	12.1	38.9	53.0	73.4	60.3	109.0	81.6
3313	3313	RAYALSEEMA	1902	10.0	0.2	1.7	11.0	36.8	73.6	41.3	148.3	181.7	188.5
3314	3314	RAYALSEEMA	1903	30.0	0.1	0.0	3.6	80.5	67.5	127.5	140.6	219.7	95.3
3315	3315	RAYALSEEMA	1904	14.8	0.0	1.7	7.1	58.8	39.8	75.1	19.4	84.7	111.5
3316	3316	RAYALSEEMA	1905	6.5	6.8	17.0	18.3	44.2	66.1	50.9	219.3	36.5	180.2
...
3422	3422	RAYALSEEMA	2011	0.8	12.1	0.0	34.6	33.0	44.5	128.9	163.6	71.2	107.5
3423	3423	RAYALSEEMA	2012	2.7	0.0	2.5	32.7	38.8	47.0	139.7	120.0	69.5	113.7
3424	3424	RAYALSEEMA	2013	1.3	30.6	11.5	26.8	38.9	73.8	95.7	110.3	163.2	169.3
3425	3425	RAYALSEEMA	2014	0.2	0.7	12.5	5.1	46.7	66.3	68.7	115.1	81.4	104.6
3426	3426	RAYALSEEMA	2015	1.9	0.0	13.4	73.4	39.7	73.0	43.1	123.6	136.3	106.7

115 rows × 20 columns

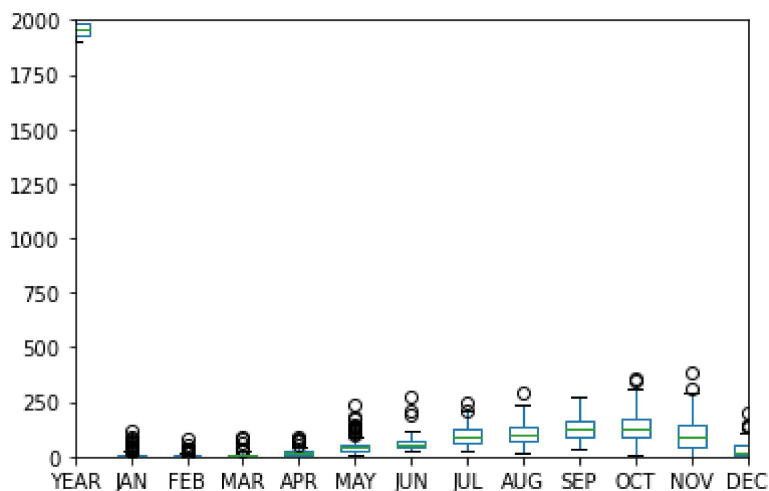
```

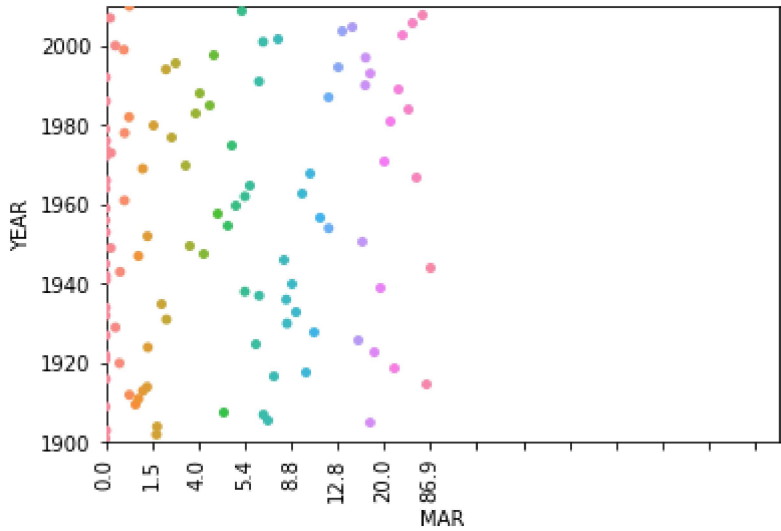
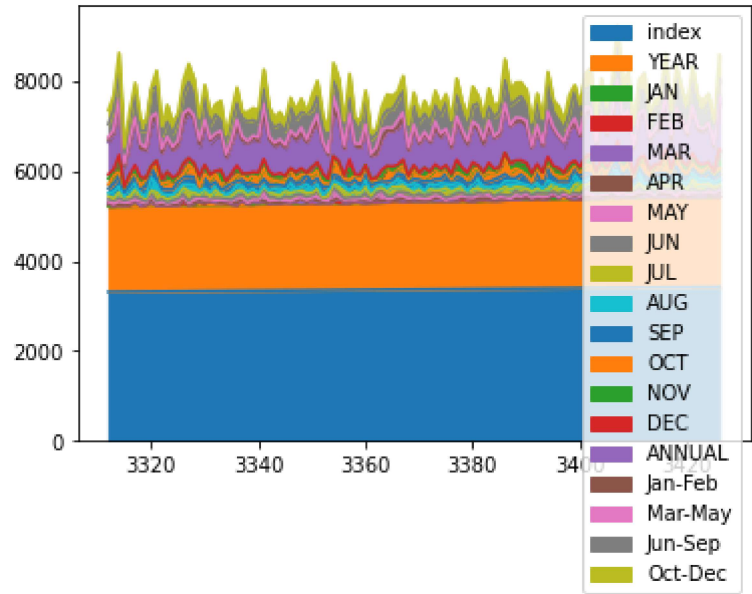
In [5]: dat1.plot.bar("YEAR", "MAR")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat1.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat1.plot.area()
dat1.plot.scatter("YEAR", "MAR")
sns.stripplot(x=dat1["MAR"],y=dat1["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat1["MAR"],rotation="vertical")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

```

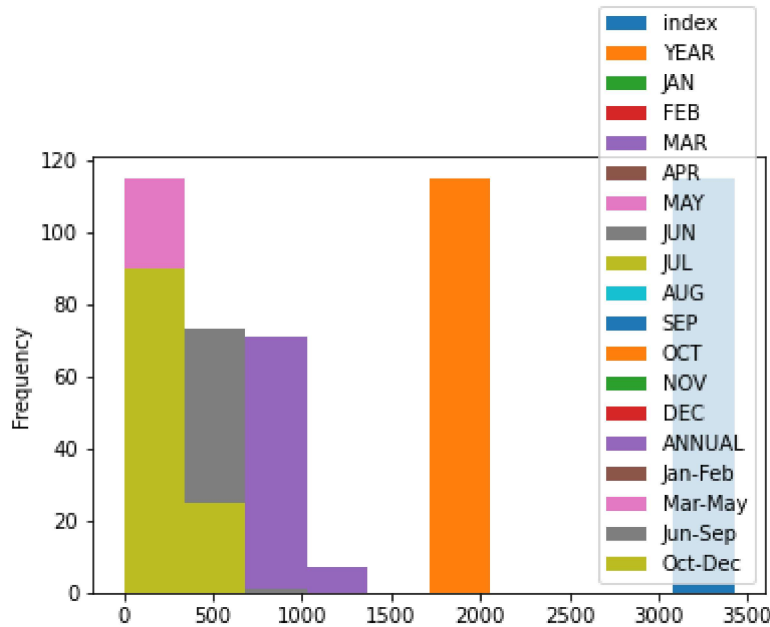


<Figure size 4320x2160 with 0 Axes>

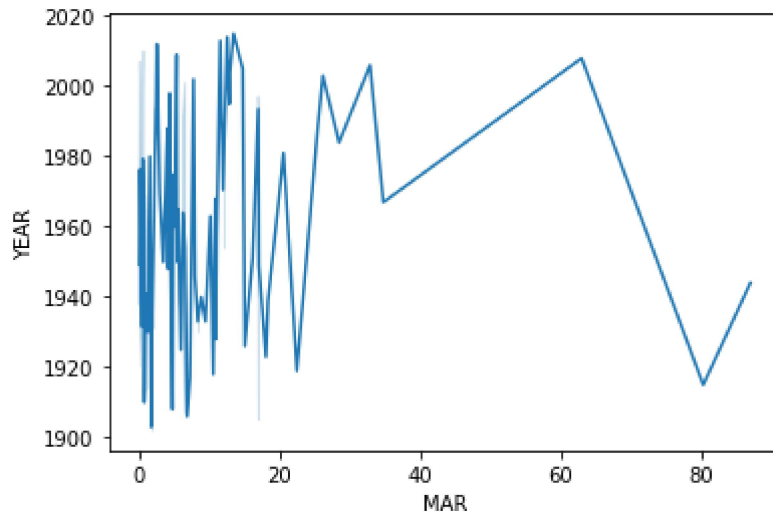




Out[5]: <AxesSubplot:ylabel='Frequency'>



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



CHHATTISGARH

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In [7]: dat2=df[df["SUBDIVISION"]=="CHHATTISGARH"]
dat2
```

Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2967	2967	CHHATTISGARH	1901	48.9	116.5	27.8	5.5	18.4	101.6	381.0	476.7	182.8
2968	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1
2969	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0
2970	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8
2971	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8
...
3077	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2
3078	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3
3079	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9
3080	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7
3081	3081	CHHATTISGARH	2015	15.8	1.2	21.2	37.0	13.0	257.6	248.6	286.6	216.9

115 rows × 20 columns

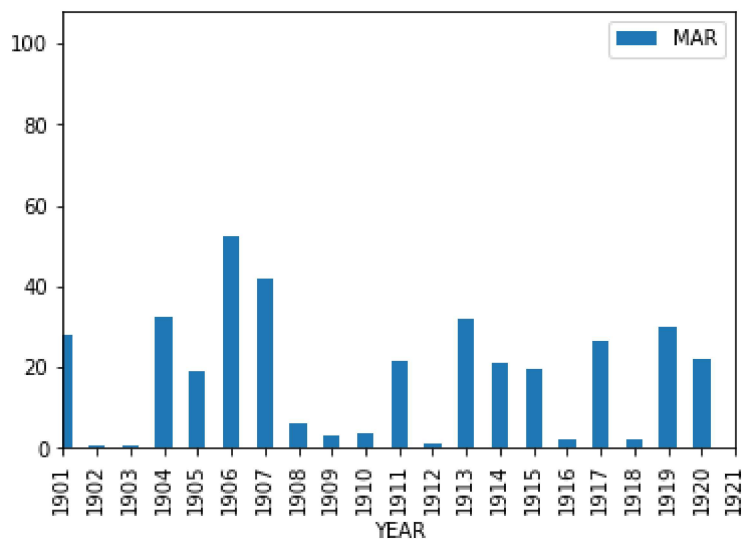


In [8]:

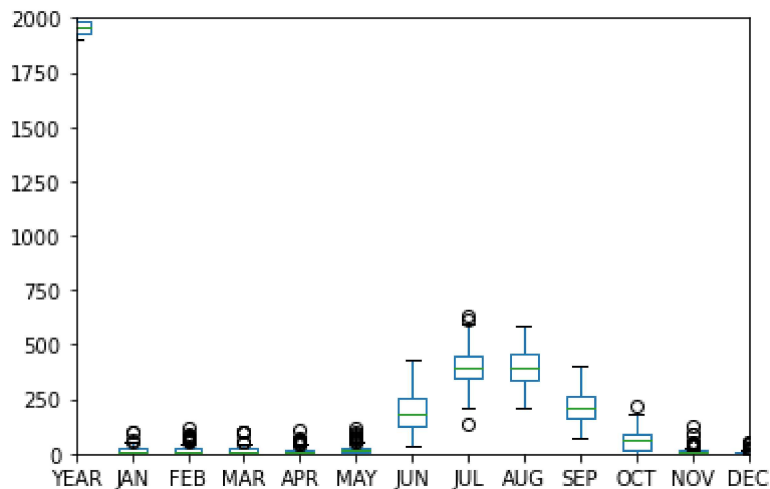
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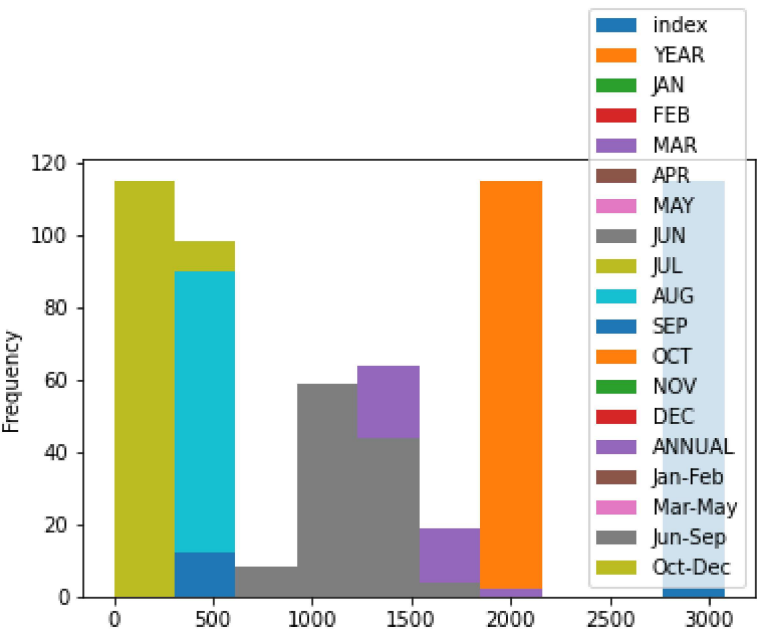
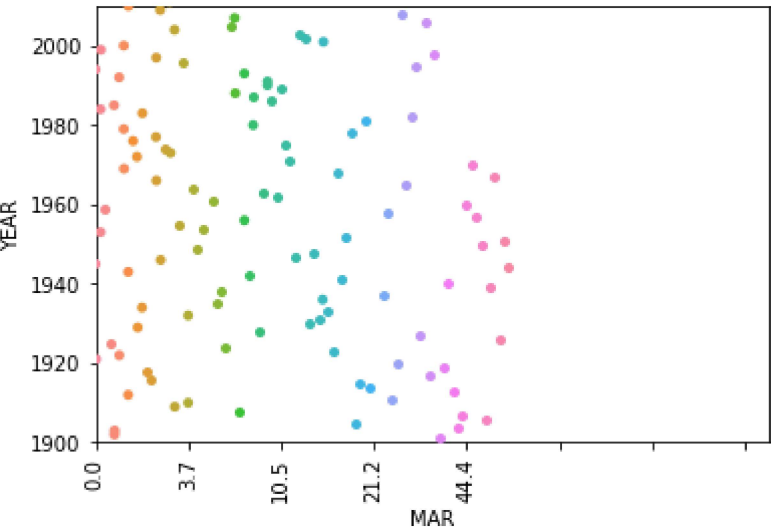
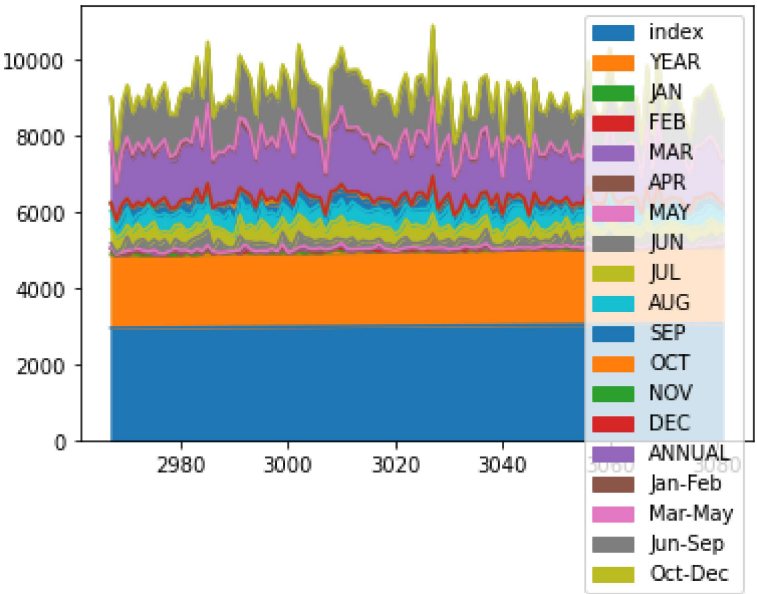
dat2.plot.bar("YEAR", "MAR")
plt.xlim(0,20)
plt.figure(figsize=(60,30))
plt.show()
dat2.plot.box()
plt.xlim(2,14)
plt.ylim(0,2000)
plt.show()
dat2.plot.area()
dat2.plot.scatter("YEAR", "MAR")
sns.stripplot(x=dat2["MAR"],y=dat2["YEAR"],jitter=True)
plt.ylim(1900,2010)
plt.xlim(0,145)
plt.xticks(dat2["MAR"],rotation="vertical")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

