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

In [2]:
```python
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]: HIMACHAL PRADESH                        115
        EAST RAJASTHAN                          115
        GUJARAT REGION                          115
        EAST MADHYA PRADESH                     115
        EAST UTTAR PRADESH                      115
        BIHAR                                   115
        KONKAN & GOA                            115
        JAMMU & KASHMIR                         115
        TAMIL NADU                              115
        ASSAM & MEGHALAYA                       115
        NORTH INTERIOR KARNATAKA                115
        ORISSA                                  115
        JHARKHAND                               115
        SUB HIMALAYAN WEST BENGAL & SIKKIM      115
        MATATHWADA                              115
        WEST RAJASTHAN                          115
        TELANGANA                               115
        GANGETIC WEST BENGAL                    115
        WEST UTTAR PRADESH                      115
        VIDARBHA                                115
        SAURASHTRA & KUTCH                      115
        HARYANA DELHI & CHANDIGARH              115
        COASTAL ANDHRA PRADESH                  115
        UTTARAKHAND                             115
        MADHYA MAHARASHTRA                      115
        KERALA                                  115
        NAGA MANI MIZO TRIPURA                  115
        WEST MADHYA PRADESH                     115
        RAYALSEEMA                              115
        CHHATTISGARH                            115
        PUNJAB                                  115
        SOUTH INTERIOR KARNATAKA                115
        COASTAL KARNATAKA                       115
        LAKSHADWEEP                             114
        ANDAMAN & NICOBAR ISLANDS               110
        ARUNACHAL PRADESH                        97
        Name: SUBDIVISION, dtype: int64
```

JAMMU & KASHMIR

In [4]:
```python
dat1=df[df["SUBDIVISION"]=="JAMMU & KASHMIR"]
dat1
```

Out[4]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1702	1702	JAMMU & KASHMIR	1901	66.4	69.3	69.6	132.2	105.8	53.4	171.7	181.3	101.8
1703	1703	JAMMU & KASHMIR	1902	6.5	9.7	91.3	100.5	70.7	113.3	108.4	136.9	62.2
1704	1704	JAMMU & KASHMIR	1903	96.2	21.5	238.6	58.7	57.3	18.9	332.5	218.6	176.9
1705	1705	JAMMU & KASHMIR	1904	110.6	17.3	145.2	64.5	67.8	25.9	182.3	132.2	62.3
1706	1706	JAMMU & KASHMIR	1905	146.7	76.3	161.4	71.7	65.2	43.3	145.2	111.5	239.7
...	...	...	...	...	...	...	...	...	...	...	...	...
1812	1812	JAMMU & KASHMIR	2011	43.4	211.6	97.8	89.0	32.4	72.5	81.6	131.2	72.0
1813	1813	JAMMU & KASHMIR	2012	150.9	95.8	45.2	86.6	48.9	32.6	118.8	264.9	106.7
1814	1814	JAMMU & KASHMIR	2013	52.2	136.4	41.9	47.4	47.4	80.5	125.1	219.1	41.2
1815	1815	JAMMU & KASHMIR	2014	75.8	64.0	153.1	76.1	52.7	25.3	100.5	134.6	362.8
1816	1816	JAMMU & KASHMIR	2015	27.9	187.2	341.4	173.3	64.6	121.4	233.2	129.2	130.2

115 rows × 20 columns

In [5]:
```python
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()
```
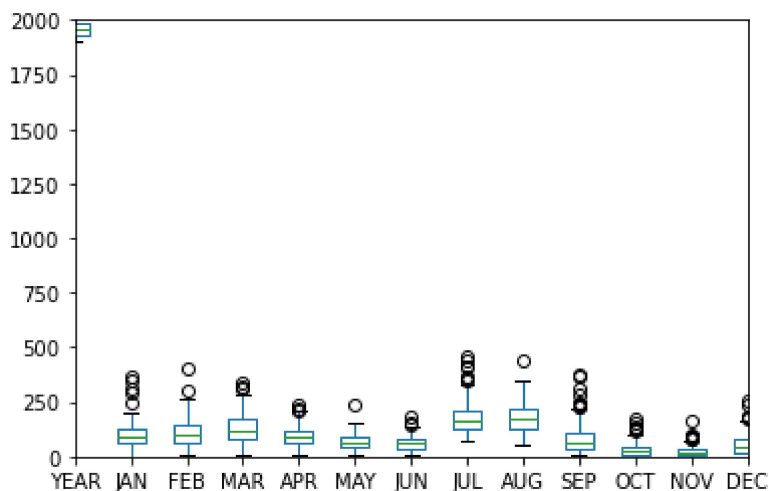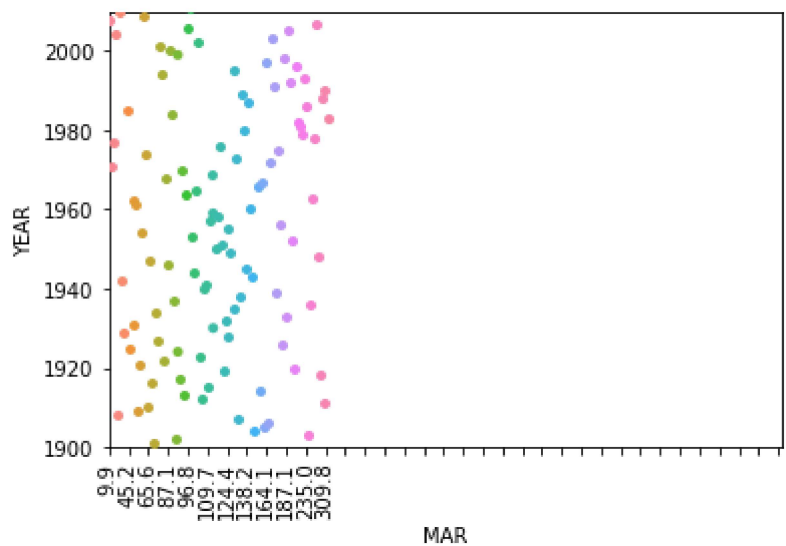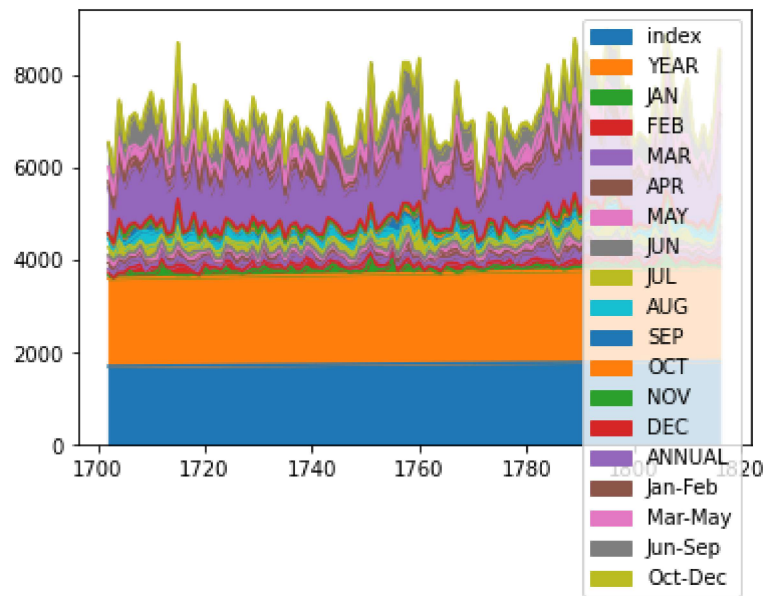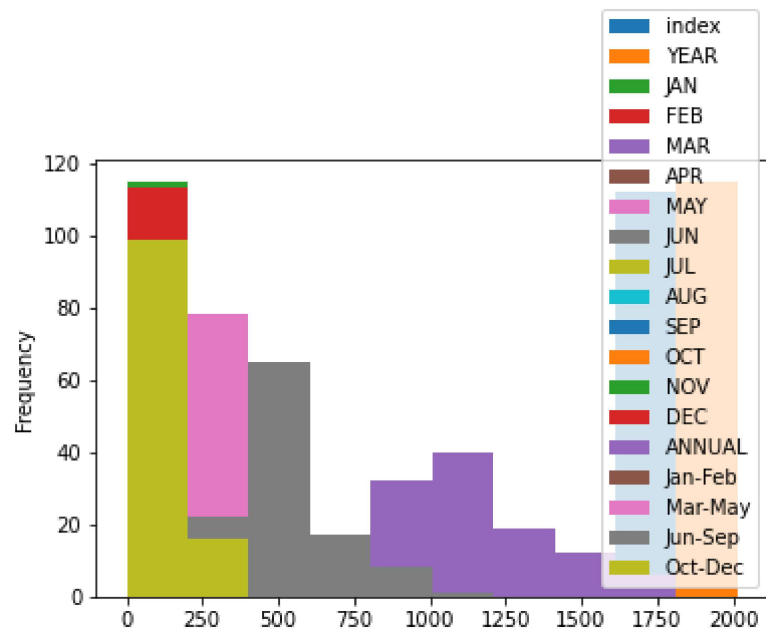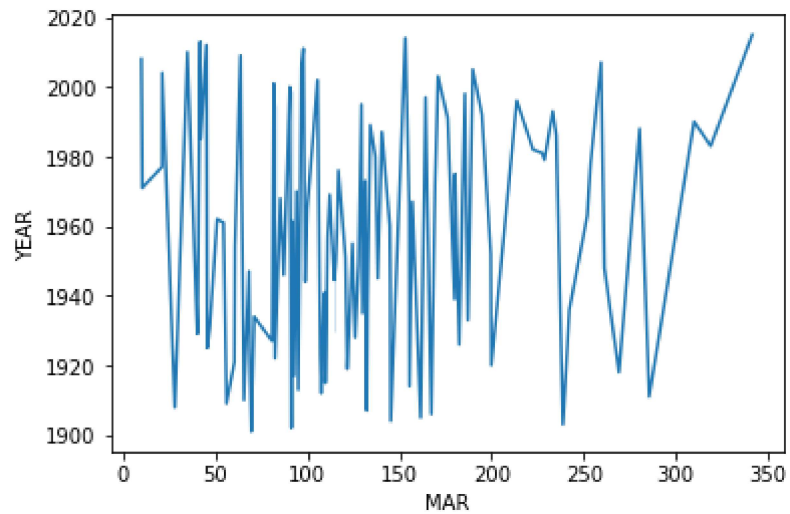


```
<Figure size 4320x2160 with 0 Axes>
```
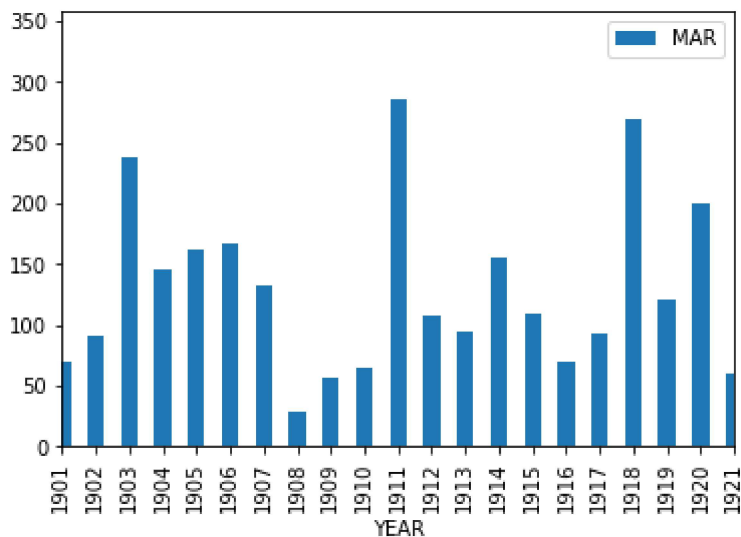
Out[5]: <AxesSubplot:ylabel='Frequency'>

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


NORTH INTERIOR KARNATAKA

In [7]:
```python
dat2=df[df["SUBDIVISION"]=="NORTH INTERIOR KARNATAKA"]
dat2
```

Out[7]:

|	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3657	3657	NORTH INTERIOR KARNATAKA	1901	3.5	18.8	7.1	67.2	65.5	120.5	151.9	115.1	128.8	80.0
3658	3658	NORTH INTERIOR KARNATAKA	1902	0.0	0.0	0.3	22.5	34.4	111.3	83.2	78.1	146.7	118.8
3659	3659	NORTH INTERIOR KARNATAKA	1903	3.5	0.0	0.1	6.9	53.4	102.8	209.4	146.4	189.3	166.4
3660	3660	NORTH INTERIOR KARNATAKA	1904	0.2	0.3	8.5	11.0	46.3	120.6	91.6	48.5	165.1	86.5
3661	3661	NORTH INTERIOR KARNATAKA	1905	0.0	6.0	2.6	16.0	51.2	99.6	60.1	139.2	42.2	85.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...
3767	3767	NORTH INTERIOR KARNATAKA	2011	0.5	7.2	7.2	41.2	46.8	101.3	150.8	152.0	69.0	73.4
3768	3768	NORTH INTERIOR KARNATAKA	2012	28.5	6.2	0.4	35.4	19.5	60.0	114.5	105.5	79.2	85.2
3769	3769	NORTH INTERIOR KARNATAKA	2013	1.2	6.1	3.0	25.4	47.4	99.4	160.7	73.9	201.0	101.0
3770	3770	NORTH INTERIOR KARNATAKA	2014	0.0	6.1	29.2	26.4	93.0	50.4	136.8	205.2	90.2	80.3
3771	3771	NORTH INTERIOR KARNATAKA	2015	2.4	0.0	27.5	50.8	45.3	89.6	38.5	78.4	150.8	61.2

115 rows × 20 columns

In [8]:
```python
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>
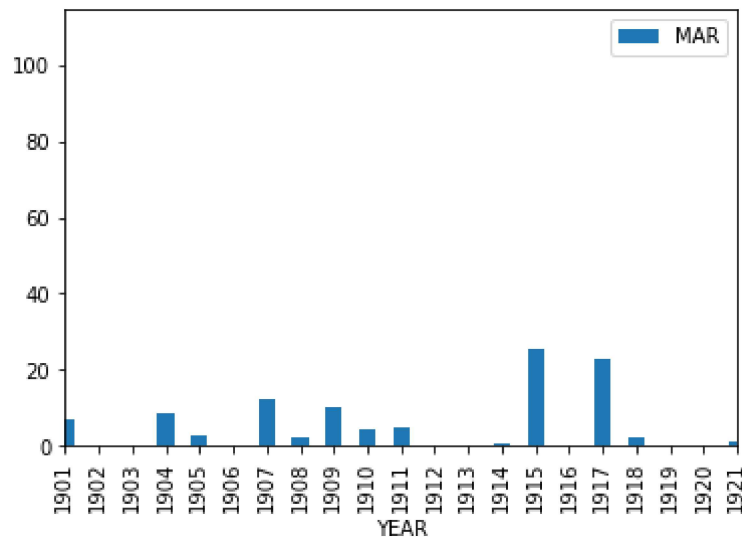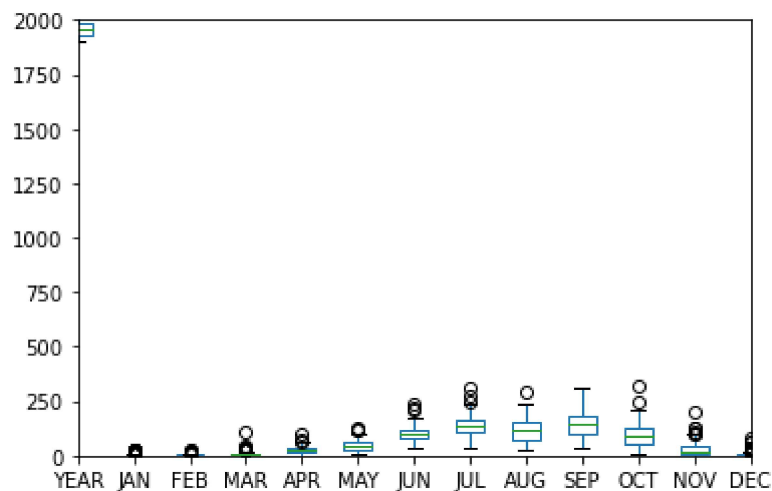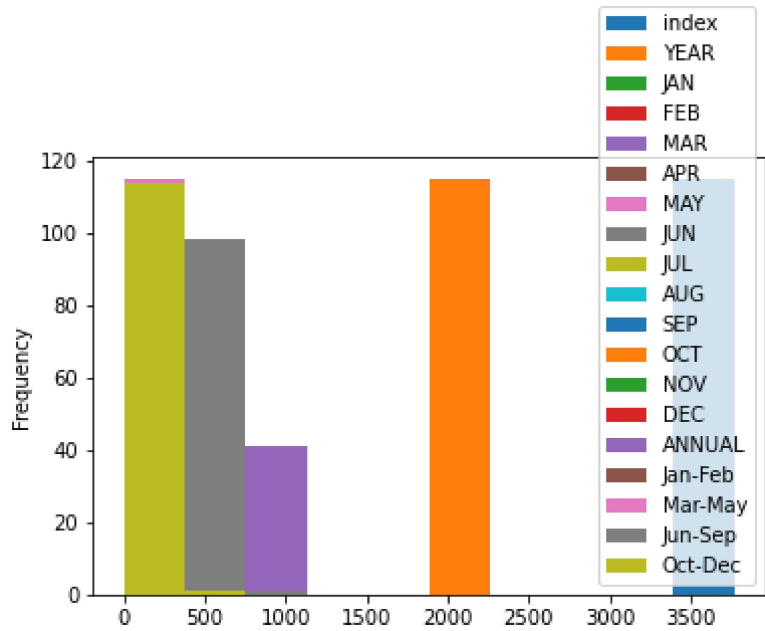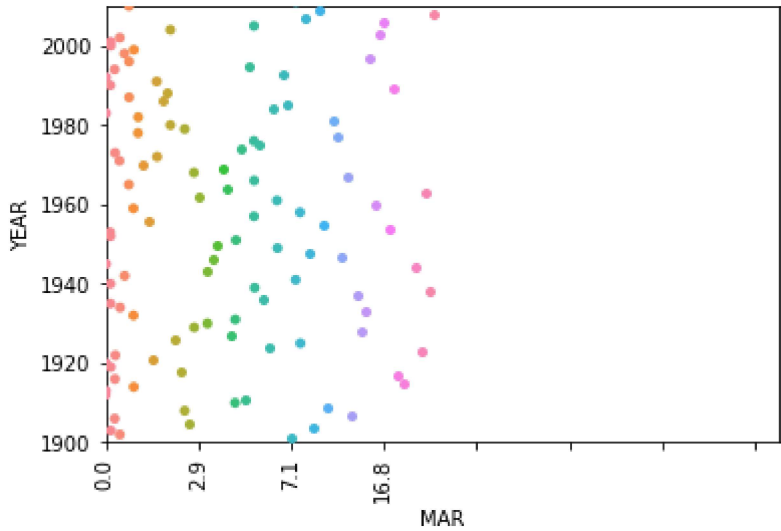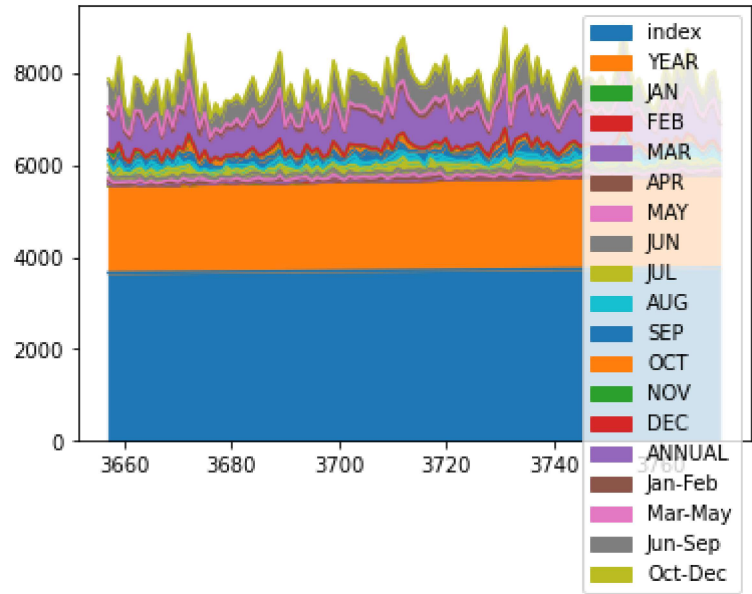
In [9]:
```python
sns.lineplot(x=dat2["MAR"],y=dat2["YEAR"])
plt.show()
```