

```
In [1]: # import libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: # To Import Dataset
sd=pd.read_csv(r"C:\Users\user\Desktop\GINESH\FP1_air\rainfall in india 1901-2014.csv")
sd
```

Out[2]:

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
0	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	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	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	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	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	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2
4112	4112	LAKSHADWEEP	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8
4113	4113	LAKSHADWEEP	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0
4114	4114	LAKSHADWEEP	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2
4115	4115	LAKSHADWEEP	LAKSHADWEEP	2015	2.2	0.5	3.7	87.1	133.1	296.6	257.5	146.4	160.4

4116 rows × 20 columns



ANDAMAN & NICOBAR ISLANDS

```
In [3]: ANDAMAN=sd.head(110)  
ANDAMAN
```

Out[3]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	38
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	19
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	18
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	22
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	26
...
105	105	ANDAMAN & NICOBAR ISLANDS	2011	265.9	84.8	272.8	111.4	326.5	383.2	583.2	441.5	757.1	21
106	106	ANDAMAN & NICOBAR ISLANDS	2012	119.9	45.6	30.9	55.8	533.9	458.2	317.3	369.6	868.9	20
107	107	ANDAMAN & NICOBAR ISLANDS	2013	67.1	37.6	43.0	46.3	509.3	777.0	564.8	336.7	473.6	45
108	108	ANDAMAN & NICOBAR ISLANDS	2014	41.9	8.6	0.0	11.1	238.0	416.6	467.6	321.6	412.9	40
109	109	ANDAMAN & NICOBAR ISLANDS	2015	126.8	7.6	3.1	138.2	331.9	346.4	328.9	480.0	523.3	25

110 rows × 20 columns



DATA CLEANING AND PRE_PROCESSING

In [4]: ANDAMAN.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 110 entries, 0 to 109
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       110 non-null    int64  
 1   SUBDIVISION 110 non-null    object  
 2   YEAR        110 non-null    int64  
 3   JAN         110 non-null    float64 
 4   FEB         110 non-null    float64 
 5   MAR         108 non-null    float64 
 6   APR         108 non-null    float64 
 7   MAY         109 non-null    float64 
 8   JUN         108 non-null    float64 
 9   JUL         108 non-null    float64 
 10  AUG         108 non-null    float64 
 11  SEP         107 non-null    float64 
 12  OCT         108 non-null    float64 
 13  NOV         108 non-null    float64 
 14  DEC         107 non-null    float64 
 15  ANNUAL      104 non-null    float64 
 16  Jan-Feb     110 non-null    float64 
 17  Mar-May     107 non-null    float64 
 18  Jun-Sep     107 non-null    float64 
 19  Oct-Dec     107 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.3+ KB
```

In [5]: ANDAMAN.describe()

Out[5]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	110.000000	110.000000	110.000000	110.000000	108.000000	108.000000	109.000000
mean	54.500000	1958.918182	52.637273	27.994545	31.824074	72.223148	357.056881
std	31.898276	33.666778	73.305788	38.396975	48.787728	65.930403	149.862850
min	0.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	62.000000
25%	27.250000	1929.250000	10.300000	1.725000	2.950000	21.475000	259.000000
50%	54.500000	1960.500000	28.350000	12.650000	12.150000	54.800000	319.000000
75%	81.750000	1987.750000	75.475000	35.800000	33.225000	103.350000	424.600000
max	109.000000	2015.000000	583.700000	173.800000	272.800000	323.100000	973.100000

In [6]: ANDAMAN.columns

Out[6]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',
 'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',
 'Mar-May', 'Jun-Sep', 'Oct-Dec'],
 dtype='object')

In [7]: ANDAMAN.dropna()

Out[7]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	38
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	19
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	18
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	22
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	26
...
105	105	ANDAMAN & NICOBAR ISLANDS	2011	265.9	84.8	272.8	111.4	326.5	383.2	583.2	441.5	757.1	21
106	106	ANDAMAN & NICOBAR ISLANDS	2012	119.9	45.6	30.9	55.8	533.9	458.2	317.3	369.6	868.9	20
107	107	ANDAMAN & NICOBAR ISLANDS	2013	67.1	37.6	43.0	46.3	509.3	777.0	564.8	336.7	473.6	45
108	108	ANDAMAN & NICOBAR ISLANDS	2014	41.9	8.6	0.0	11.1	238.0	416.6	467.6	321.6	412.9	40
109	109	ANDAMAN & NICOBAR ISLANDS	2015	126.8	7.6	3.1	138.2	331.9	346.4	328.9	480.0	523.3	25

104 rows × 20 columns

```
In [8]: ANDAMAN.fillna(356)
```

```
Out[8]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
0	0	ANDAMAN & NICOBAR ISLANDS	1901	49.2	87.1	29.2	2.3	528.8	517.5	365.1	481.1	332.6	38
1	1	ANDAMAN & NICOBAR ISLANDS	1902	0.0	159.8	12.2	0.0	446.1	537.1	228.9	753.7	666.2	19
2	2	ANDAMAN & NICOBAR ISLANDS	1903	12.7	144.0	0.0	1.0	235.1	479.9	728.4	326.7	339.0	18
3	3	ANDAMAN & NICOBAR ISLANDS	1904	9.4	14.7	0.0	202.4	304.5	495.1	502.0	160.1	820.4	22
4	4	ANDAMAN & NICOBAR ISLANDS	1905	1.3	0.0	3.3	26.9	279.5	628.7	368.7	330.5	297.0	26
...
105	105	ANDAMAN & NICOBAR ISLANDS	2011	265.9	84.8	272.8	111.4	326.5	383.2	583.2	441.5	757.1	21
106	106	ANDAMAN & NICOBAR ISLANDS	2012	119.9	45.6	30.9	55.8	533.9	458.2	317.3	369.6	868.9	20
107	107	ANDAMAN & NICOBAR ISLANDS	2013	67.1	37.6	43.0	46.3	509.3	777.0	564.8	336.7	473.6	45
108	108	ANDAMAN & NICOBAR ISLANDS	2014	41.9	8.6	0.0	11.1	238.0	416.6	467.6	321.6	412.9	40
109	109	ANDAMAN & NICOBAR ISLANDS	2015	126.8	7.6	3.1	138.2	331.9	346.4	328.9	480.0	523.3	26

110 rows × 20 columns



```
In [9]: np.shape(ANDAMAN)
```

```
Out[9]: (110, 20)
```

```
In [10]: np.size(ANDAMAN)
```

```
Out[10]: 2200
```

```
In [11]: ANDAMAN.isna()
```

Out[11]:

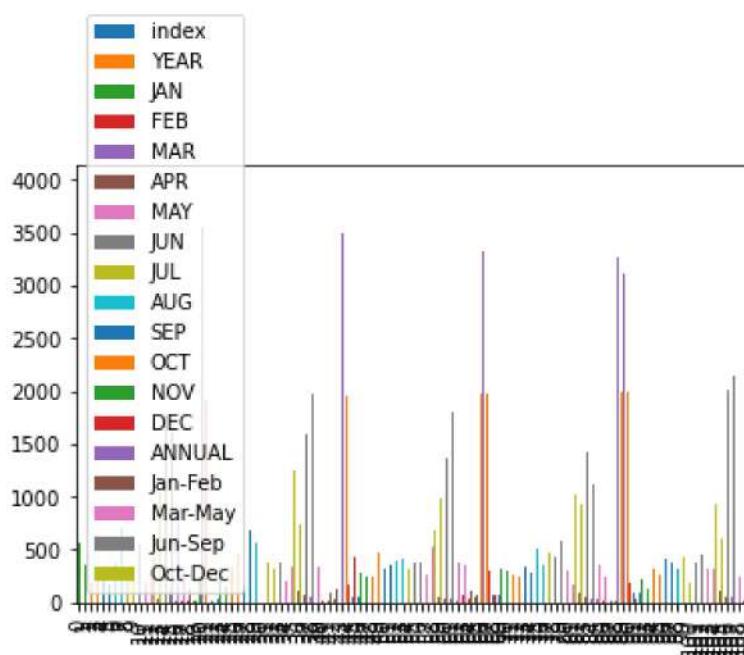
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
0	False		False	False	False	False														
1	False		False	False	False	False														
2	False		False	False	False	False														
3	False		False	False	False	False														
4	False		False	False	False	False														
...	
105	False		False	False	False	False														
106	False		False	False	False	False														
107	False		False	False	False	False														
108	False		False	False	False	False														
109	False		False	False	False	False														

110 rows × 20 columns



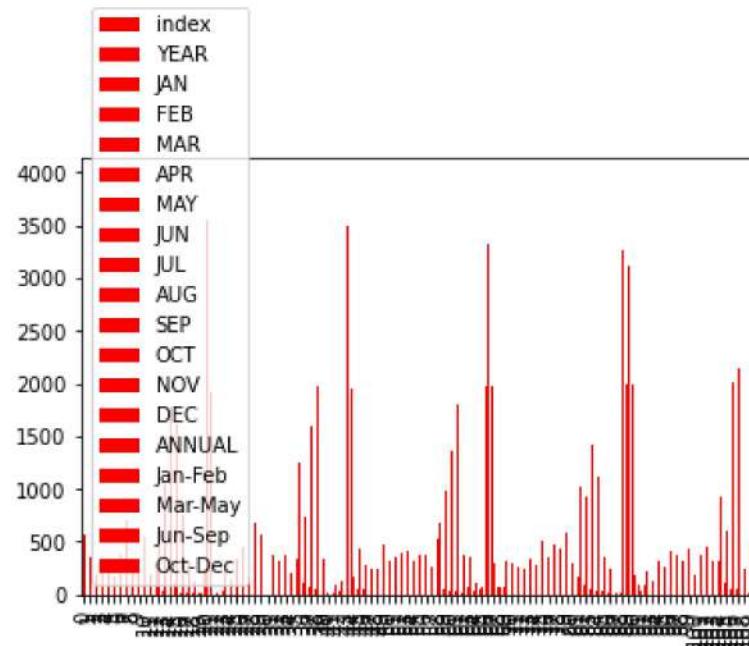
```
In [12]: ANDAMAN.plot.bar()
```

Out[12]: <AxesSubplot:>



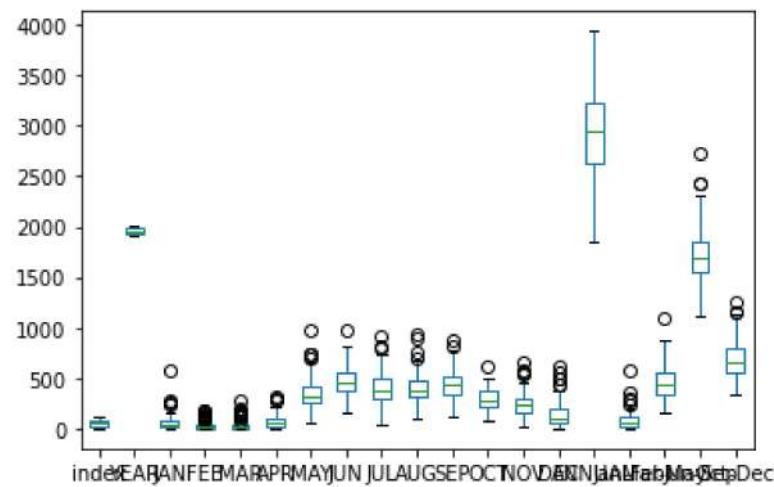
```
In [13]: ANDAMAN.plot.bar(color='r')
```

```
Out[13]: <AxesSubplot:>
```



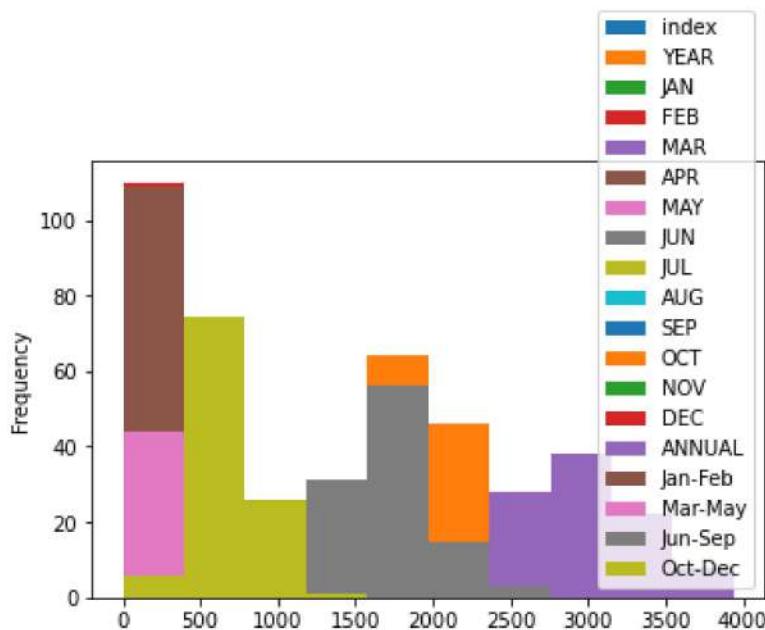
```
In [14]: ANDAMAN.plot.box()
```

```
Out[14]: <AxesSubplot:>
```



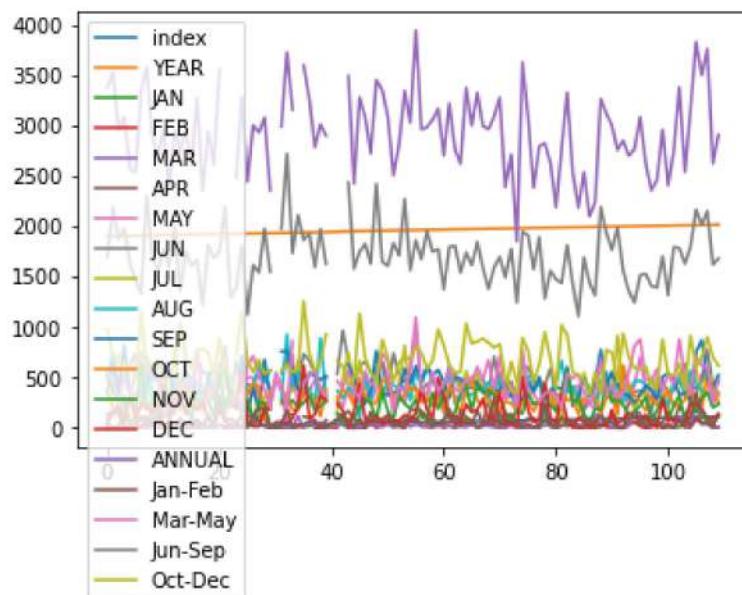
```
In [15]: ANDAMAN.plot.hist()
```

```
Out[15]: <AxesSubplot:ylabel='Frequency'>
```



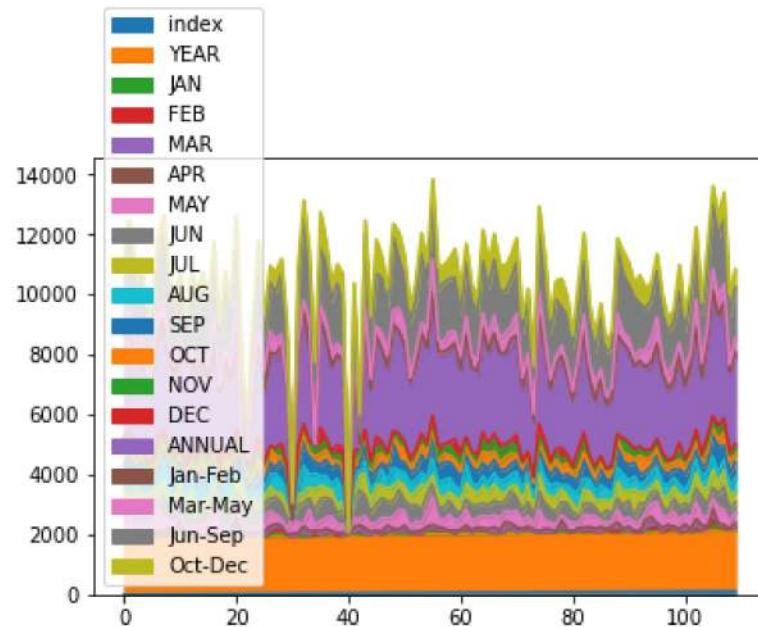
```
In [16]: ANDAMAN.plot.line()
```

```
Out[16]: <AxesSubplot:>
```



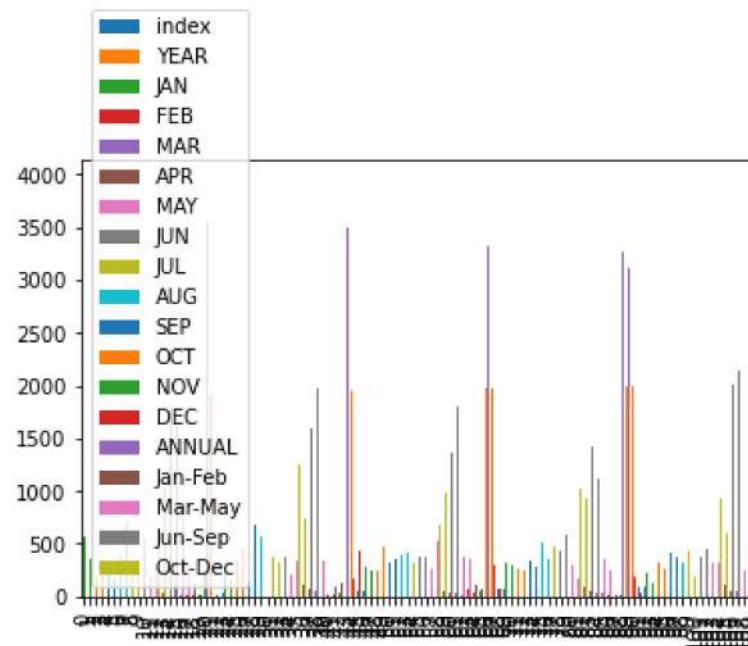
```
In [17]: ANDAMAN.plot.area()
```

```
Out[17]: <AxesSubplot:>
```



```
In [18]: ANDAMAN.plot.bar()
```

```
Out[18]: <AxesSubplot:>
```



ARUNACHAL PRADESH

```
In [19]: ARUNACHAL=sd[110:207]  
ARUNACHAL
```

Out[19]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
110	110	ARUNACHAL PRADESH	1916	48.1	69.8	71.1	316.1	424.6	1124.9	NaN	629.7	333.9
111	111	ARUNACHAL PRADESH	1917	21.4	164.5	NaN	269.6	107.9	823.8	909.1	628.4	411.5
112	112	ARUNACHAL PRADESH	1918	10.4	11.0	191.2	144.6	861.1	1609.9	1303.0	692.6	515.8
113	113	ARUNACHAL PRADESH	1919	34.5	67.8	28.5	256.9	420.6	973.6	999.0	286.7	628.7
114	114	ARUNACHAL PRADESH	1920	14.0	196.3	605.6	364.7	173.6	840.6	535.4	896.5	376.7
...
202	202	ARUNACHAL PRADESH	2011	40.0	51.3	174.5	240.8	219.6	288.4	531.4	277.6	286.7
203	203	ARUNACHAL PRADESH	2012	57.8	35.8	134.2	403.4	187.4	645.8	638.9	316.0	724.9
204	204	ARUNACHAL PRADESH	2013	18.5	40.5	115.1	175.1	335.8	290.0	329.6	230.2	316.1
205	205	ARUNACHAL PRADESH	2014	19.0	101.9	80.3	86.7	299.0	415.8	392.4	599.6	343.0
206	206	ARUNACHAL PRADESH	2015	30.8	47.5	97.5	287.1	238.9	637.9	329.3	595.5	374.2

97 rows × 20 columns



In [20]: ARUNACHAL.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 97 entries, 110 to 206
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       97 non-null    int64  
 1   SUBDIVISION 97 non-null    object  
 2   YEAR        97 non-null    int64  
 3   JAN         96 non-null    float64 
 4   FEB         96 non-null    float64 
 5   MAR         95 non-null    float64 
 6   APR         97 non-null    float64 
 7   MAY         97 non-null    float64 
 8   JUN         96 non-null    float64 
 9   JUL         96 non-null    float64 
 10  AUG         97 non-null    float64 
 11  SEP         97 non-null    float64 
 12  OCT         95 non-null    float64 
 13  NOV         95 non-null    float64 
 14  DEC         95 non-null    float64 
 15  ANNUAL      91 non-null    float64 
 16  Jan-Feb     96 non-null    float64 
 17  Mar-May     95 non-null    float64 
 18  Jun-Sep     95 non-null    float64 
 19  Oct-Dec     94 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 15.3+ KB
```

In [21]: ARUNACHAL.describe()

Out[21]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	97.000000	97.000000	96.000000	96.000000	95.000000	97.000000	97.000000
mean	158.000000	1965.824742	47.297917	91.116667	153.527368	263.836082	358.522680
std	28.145456	29.400613	34.256472	46.619805	86.182539	114.490513	177.484444
min	110.000000	1916.000000	0.600000	6.100000	28.500000	86.700000	101.800000
25%	134.000000	1940.000000	19.275000	58.450000	101.650000	180.200000	235.100000
50%	158.000000	1967.000000	39.600000	85.150000	139.900000	245.400000	307.200000
75%	182.000000	1991.000000	62.075000	118.600000	187.100000	335.300000	435.300000
max	206.000000	2015.000000	164.500000	208.500000	605.600000	595.100000	1168.600000

In [22]: ARUNACHAL.columns

Out[22]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',
 'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',
 'Mar-May', 'Jun-Sep', 'Oct-Dec'],
 dtype='object')

In [23]: ARUNACHAL.dropna()

Out[23]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
112	112	ARUNACHAL PRADESH	1918	10.4	11.0	191.2	144.6	861.1	1609.9	1303.0	692.6	515.8	112.0	112.0	112.0
113	113	ARUNACHAL PRADESH	1919	34.5	67.8	28.5	256.9	420.6	973.6	999.0	286.7	628.7	9.0	9.0	9.0
114	114	ARUNACHAL PRADESH	1920	14.0	196.3	605.6	364.7	173.6	840.6	535.4	896.5	376.7	1.0	1.0	1.0
115	115	ARUNACHAL PRADESH	1921	78.9	54.3	180.3	358.0	598.0	1233.2	1433.0	885.9	603.4	2.0	2.0	2.0
116	116	ARUNACHAL PRADESH	1922	50.7	59.4	170.4	299.5	350.5	1109.3	918.7	488.3	207.6	4.0	4.0	4.0
...
202	202	ARUNACHAL PRADESH	2011	40.0	51.3	174.5	240.8	219.6	288.4	531.4	277.6	286.7	202.0	202.0	202.0
203	203	ARUNACHAL PRADESH	2012	57.8	35.8	134.2	403.4	187.4	645.8	638.9	316.0	724.9	2.0	2.0	2.0
204	204	ARUNACHAL PRADESH	2013	18.5	40.5	115.1	175.1	335.8	290.0	329.6	230.2	316.1	204.0	204.0	204.0
205	205	ARUNACHAL PRADESH	2014	19.0	101.9	80.3	86.7	299.0	415.8	392.4	599.6	343.0	205.0	205.0	205.0
206	206	ARUNACHAL PRADESH	2015	30.8	47.5	97.5	287.1	238.9	637.9	329.3	595.5	374.2	206.0	206.0	206.0

91 rows × 20 columns

```
In [24]: ARUNACHAL.fillna(356)
```

```
Out[24]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
110	110	ARUNACHAL PRADESH	1916	48.1	69.8	71.1	316.1	424.6	1124.9	356.0	629.7	333.9	110.0	110.0	110.0
111	111	ARUNACHAL PRADESH	1917	21.4	164.5	356.0	269.6	107.9	823.8	909.1	628.4	411.5	110.0	110.0	110.0
112	112	ARUNACHAL PRADESH	1918	10.4	11.0	191.2	144.6	861.1	1609.9	1303.0	692.6	515.8	110.0	110.0	110.0
113	113	ARUNACHAL PRADESH	1919	34.5	67.8	28.5	256.9	420.6	973.6	999.0	286.7	628.7	110.0	110.0	110.0
114	114	ARUNACHAL PRADESH	1920	14.0	196.3	605.6	364.7	173.6	840.6	535.4	896.5	376.7	110.0	110.0	110.0
...
202	202	ARUNACHAL PRADESH	2011	40.0	51.3	174.5	240.8	219.6	288.4	531.4	277.6	286.7	110.0	110.0	110.0
203	203	ARUNACHAL PRADESH	2012	57.8	35.8	134.2	403.4	187.4	645.8	638.9	316.0	724.9	110.0	110.0	110.0
204	204	ARUNACHAL PRADESH	2013	18.5	40.5	115.1	175.1	335.8	290.0	329.6	230.2	316.1	110.0	110.0	110.0
205	205	ARUNACHAL PRADESH	2014	19.0	101.9	80.3	86.7	299.0	415.8	392.4	599.6	343.0	110.0	110.0	110.0
206	206	ARUNACHAL PRADESH	2015	30.8	47.5	97.5	287.1	238.9	637.9	329.3	595.5	374.2	110.0	110.0	110.0

97 rows × 20 columns



```
In [25]: np.shape(ARUNACHAL)
```

```
Out[25]: (97, 20)
```

```
In [26]: np.size(ARUNACHAL)
```

```
Out[26]: 1940
```

```
In [27]: ARUNACHAL.isna()
```

Out[27]:

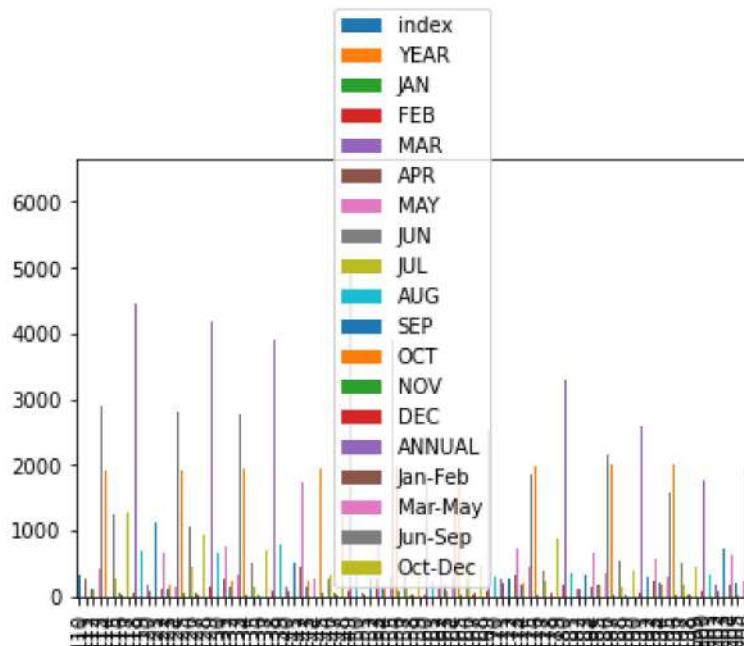
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
110	False		False	True	False	False	True	False	False	True	False	False	True							
111	False		False	False	False	False	True	False	False	False	False									
112	False		False	False	False	False														
113	False		False	False	False	False														
114	False		False	False	False	False														
...	
202	False		False	False	False	False														
203	False		False	False	False	False														
204	False		False	False	False	False														
205	False		False	False	False	False														
206	False		False	False	False	False														

97 rows × 20 columns



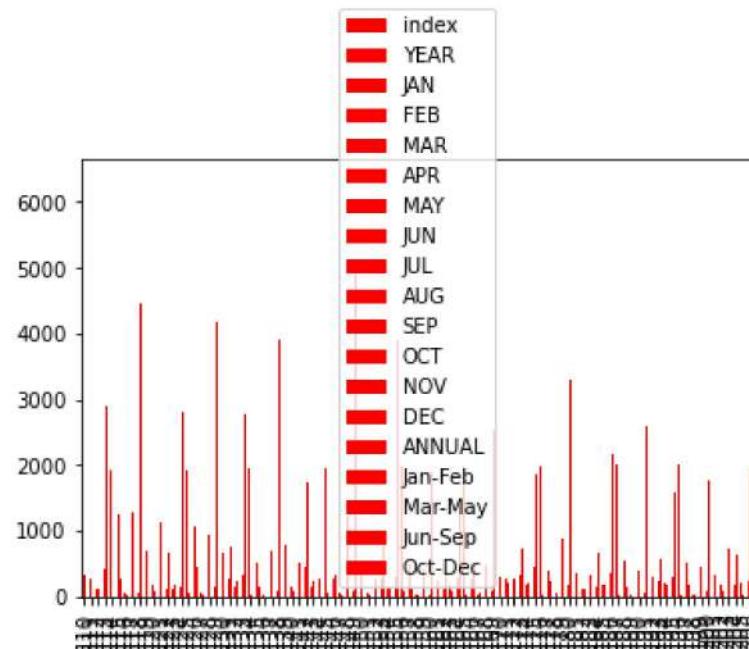
```
In [28]: ARUNACHAL.plot.bar()
```

Out[28]: <AxesSubplot:>



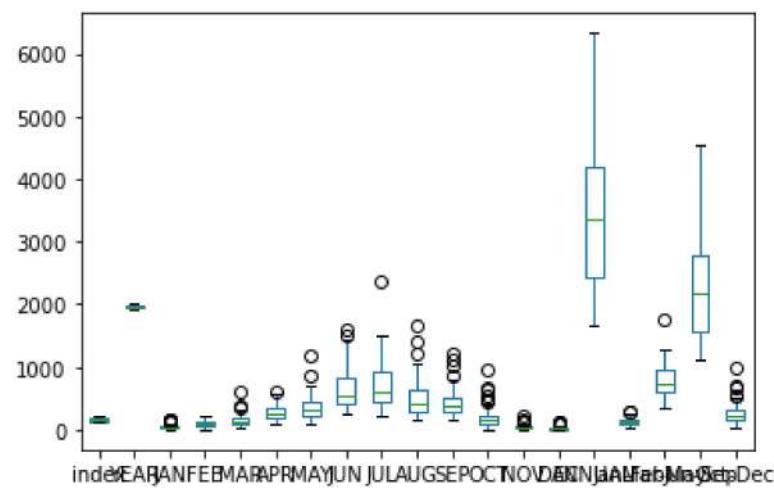
```
In [29]: ARUNACHAL.plot.bar(color='r')
```

```
Out[29]: <AxesSubplot:>
```



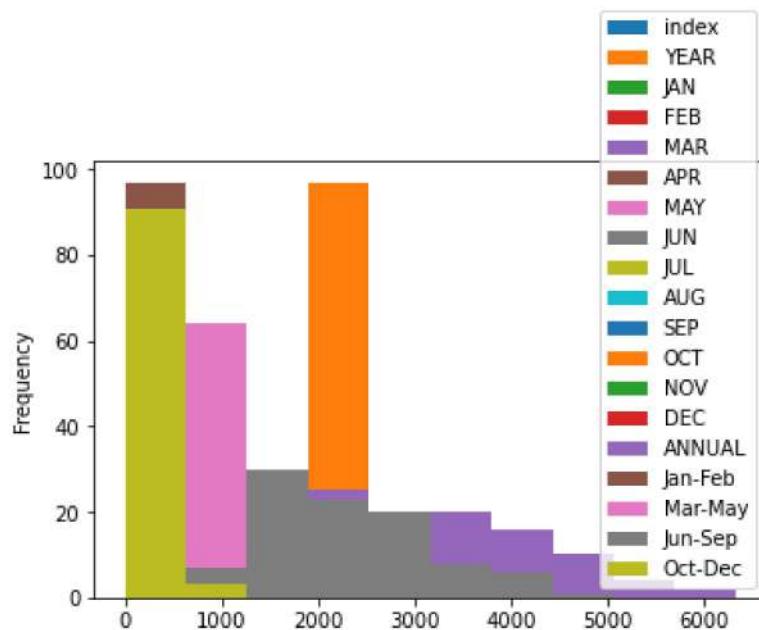
```
In [30]: ARUNACHAL.plot.box()
```

```
Out[30]: <AxesSubplot:>
```



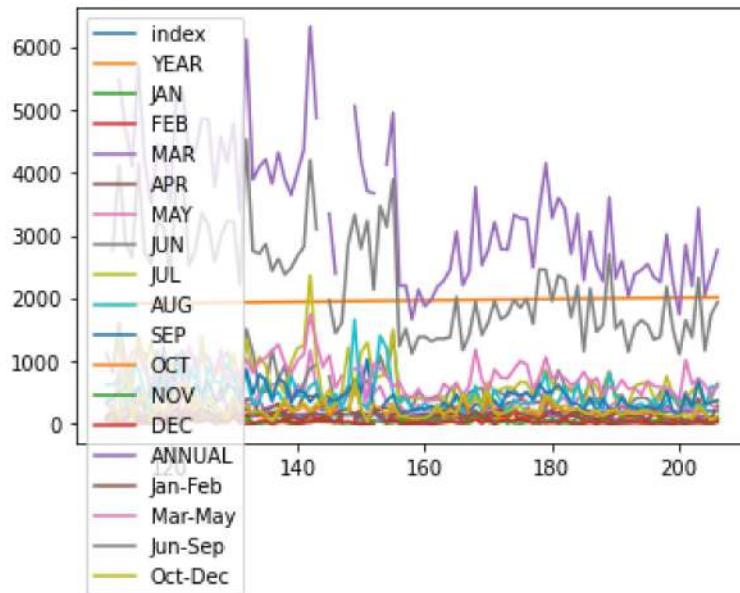
```
In [31]: ARUNACHAL.plot.hist()
```

```
Out[31]: <AxesSubplot:ylabel='Frequency'>
```



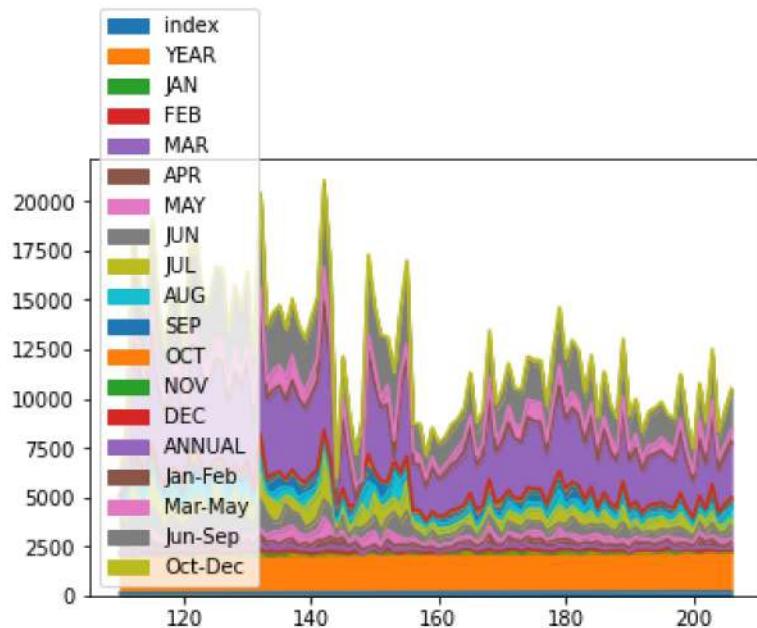
```
In [32]: ARUNACHAL.plot.line()
```

```
Out[32]: <AxesSubplot:>
```



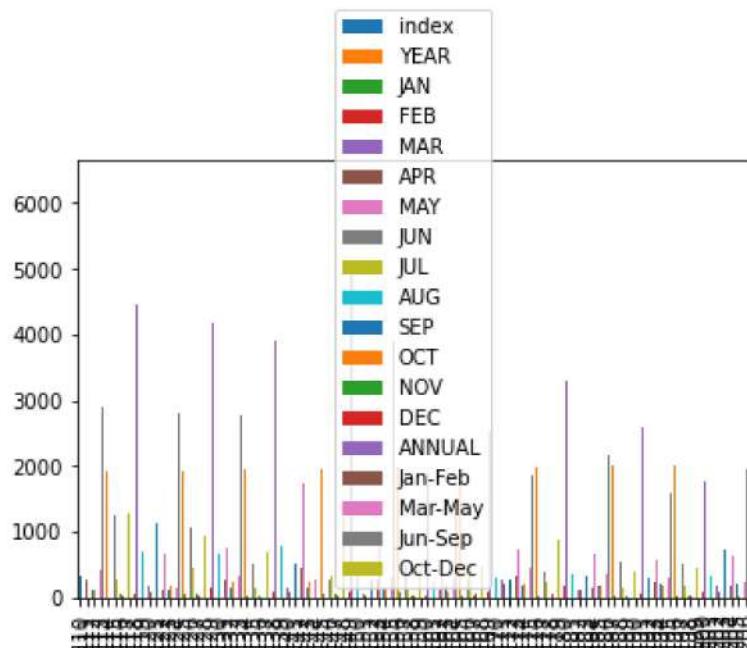
In [33]: ARUNACHAL.plot.area()

Out[33]: <AxesSubplot:>



In [34]: ARUNACHAL.plot.bar()

Out[34]: <AxesSubplot:>



ASSAM & MEGHALAYA

In [35]: ASSAM=sd[207:322]

ASSAM

Out[35]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
207	207	ASSAM & MEGHALAYA	1901	27.1	19.5	30.6	223.0	207.0	524.9	430.6	464.1	291.4	163.
208	208	ASSAM & MEGHALAYA	1902	9.3	10.2	105.6	350.0	262.1	620.7	510.8	536.0	441.3	97.
209	209	ASSAM & MEGHALAYA	1903	19.9	25.4	103.6	140.6	206.6	607.4	362.7	551.9	306.4	159.
210	210	ASSAM & MEGHALAYA	1904	11.1	56.1	51.9	457.1	375.2	385.7	477.6	438.8	245.9	115.
211	211	ASSAM & MEGHALAYA	1905	19.9	16.9	137.9	213.0	275.5	521.7	439.1	649.1	276.0	200.
...
317	317	ASSAM & MEGHALAYA	2011	11.1	11.4	109.0	92.1	238.3	316.0	395.8	302.6	221.6	30.
318	318	ASSAM & MEGHALAYA	2012	15.2	6.9	28.8	279.1	185.8	729.7	444.3	289.2	411.6	199.
319	319	ASSAM & MEGHALAYA	2013	1.1	9.6	44.0	112.8	346.7	286.2	367.8	289.7	229.3	126.
320	320	ASSAM & MEGHALAYA	2014	2.0	28.3	29.3	51.5	351.1	426.4	374.4	484.6	420.2	35.
321	321	ASSAM & MEGHALAYA	2015	13.4	15.5	37.5	250.9	332.5	558.5	300.1	590.9	279.9	62.

115 rows × 20 columns



In [36]: ASSAM.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 207 to 321
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [37]: ASSAM.describe()

Out[37]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	264.000000	1958.000000	16.974783	31.441739	79.026957	203.115652	341.539130	510
std	33.341666	33.341666	15.668601	20.963452	48.679075	74.338367	105.771005	106
min	207.000000	1901.000000	0.100000	0.500000	4.400000	45.900000	159.700000	273
25%	235.500000	1929.500000	7.500000	15.800000	38.700000	151.350000	261.100000	421
50%	264.000000	1958.000000	12.800000	28.300000	75.700000	197.600000	325.700000	513
75%	292.500000	1986.500000	21.600000	41.950000	104.600000	251.500000	397.150000	583
max	321.000000	2015.000000	83.900000	96.900000	253.800000	457.100000	681.200000	780



```
In [38]: ASSAM.columns
```

```
Out[38]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [39]: ASSAM.dropna()
```

```
Out[39]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
207	207	ASSAM & MEGHALAYA	1901	27.1	19.5	30.6	223.0	207.0	524.9	430.6	464.1	291.4	163.
208	208	ASSAM & MEGHALAYA	1902	9.3	10.2	105.6	350.0	262.1	620.7	510.8	536.0	441.3	97.
209	209	ASSAM & MEGHALAYA	1903	19.9	25.4	103.6	140.6	206.6	607.4	362.7	551.9	306.4	159.
210	210	ASSAM & MEGHALAYA	1904	11.1	56.1	51.9	457.1	375.2	385.7	477.6	438.8	245.9	115.
211	211	ASSAM & MEGHALAYA	1905	19.9	16.9	137.9	213.0	275.5	521.7	439.1	649.1	276.0	200.
...
317	317	ASSAM & MEGHALAYA	2011	11.1	11.4	109.0	92.1	238.3	316.0	395.8	302.6	221.6	30.
318	318	ASSAM & MEGHALAYA	2012	15.2	6.9	28.8	279.1	185.8	729.7	444.3	289.2	411.6	199.
319	319	ASSAM & MEGHALAYA	2013	1.1	9.6	44.0	112.8	346.7	286.2	367.8	289.7	229.3	126.
320	320	ASSAM & MEGHALAYA	2014	2.0	28.3	29.3	51.5	351.1	426.4	374.4	484.6	420.2	35.
321	321	ASSAM & MEGHALAYA	2015	13.4	15.5	37.5	250.9	332.5	558.5	300.1	590.9	279.9	62.

115 rows × 20 columns

```
In [40]: ASSAM.fillna(356)
```

Out[40]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
207	207	ASSAM & MEGHALAYA	1901	27.1	19.5	30.6	223.0	207.0	524.9	430.6	464.1	291.4	163.
208	208	ASSAM & MEGHALAYA	1902	9.3	10.2	105.6	350.0	262.1	620.7	510.8	536.0	441.3	97.
209	209	ASSAM & MEGHALAYA	1903	19.9	25.4	103.6	140.6	206.6	607.4	362.7	551.9	306.4	159.
210	210	ASSAM & MEGHALAYA	1904	11.1	56.1	51.9	457.1	375.2	385.7	477.6	438.8	245.9	115.
211	211	ASSAM & MEGHALAYA	1905	19.9	16.9	137.9	213.0	275.5	521.7	439.1	649.1	276.0	200.
...
317	317	ASSAM & MEGHALAYA	2011	11.1	11.4	109.0	92.1	238.3	316.0	395.8	302.6	221.6	30.
318	318	ASSAM & MEGHALAYA	2012	15.2	6.9	28.8	279.1	185.8	729.7	444.3	289.2	411.6	199.
319	319	ASSAM & MEGHALAYA	2013	1.1	9.6	44.0	112.8	346.7	286.2	367.8	289.7	229.3	126.
320	320	ASSAM & MEGHALAYA	2014	2.0	28.3	29.3	51.5	351.1	426.4	374.4	484.6	420.2	35.
321	321	ASSAM & MEGHALAYA	2015	13.4	15.5	37.5	250.9	332.5	558.5	300.1	590.9	279.9	62.

115 rows × 20 columns



```
In [41]: np.shape(ASSAM)
```

Out[41]: (115, 20)

```
In [42]: np.size(ASSAM)
```

Out[42]: 2300

In [43]: ASSAM.isna()

Out[43]:

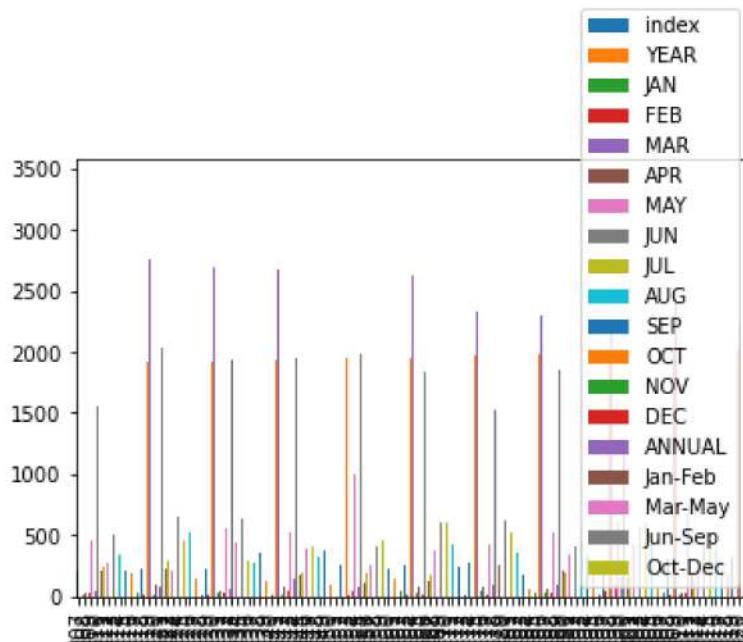
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
207	False		False	False	False	False														
208	False		False	False	False	False														
209	False		False	False	False	False														
210	False		False	False	False	False														
211	False		False	False	False	False														
...	
317	False		False	False	False	False														
318	False		False	False	False	False														
319	False		False	False	False	False														
320	False		False	False	False	False														
321	False		False	False	False	False														

115 rows × 20 columns



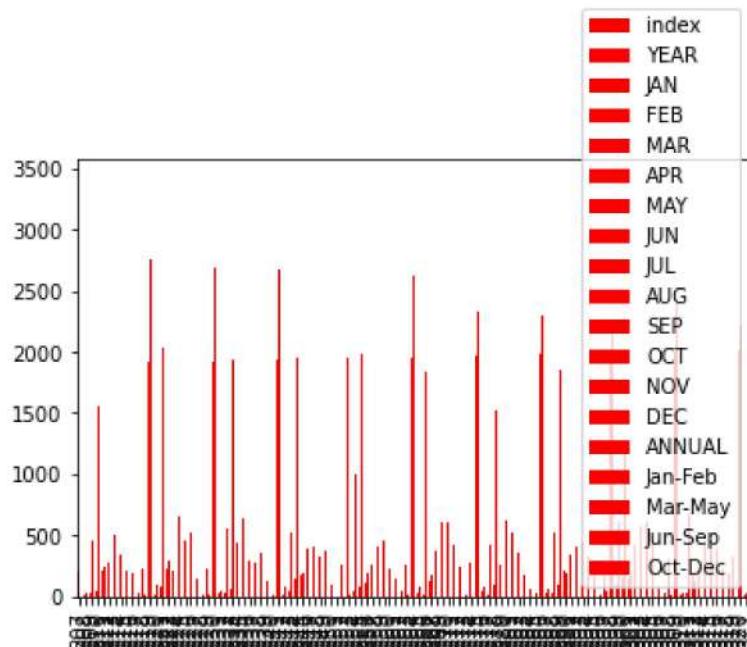
In [44]: ASSAM.plot.bar()

Out[44]: <AxesSubplot:>



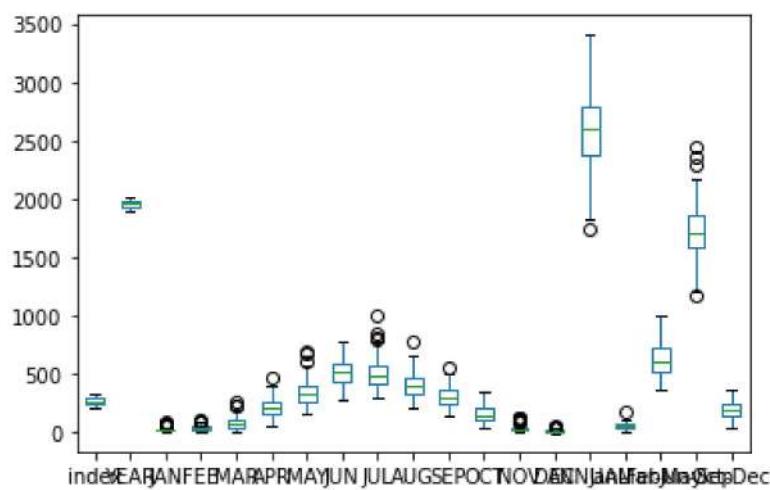
```
In [45]: ASSAM.plot.bar(color='r')
```

```
Out[45]: <AxesSubplot:>
```



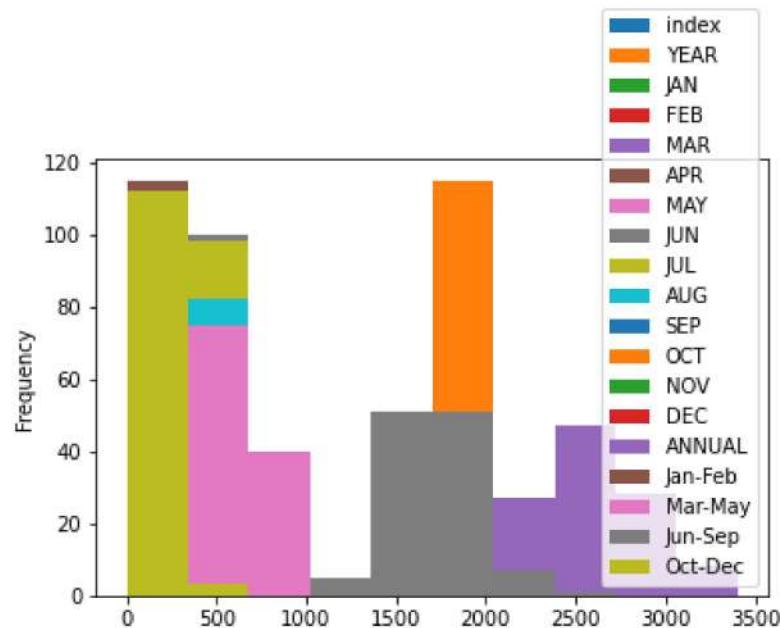
```
In [46]: ASSAM.plot.box()
```

```
Out[46]: <AxesSubplot:>
```



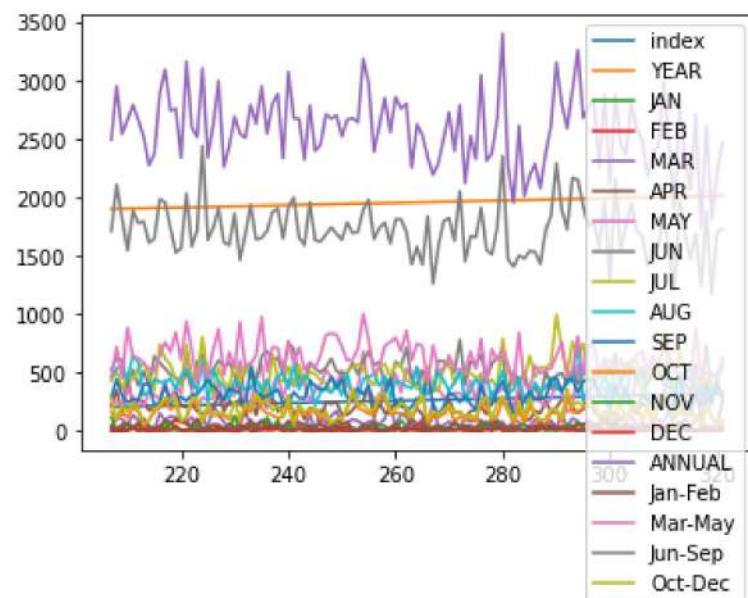
```
In [47]: ASSAM.plot.hist()
```

```
Out[47]: <AxesSubplot:ylabel='Frequency'>
```



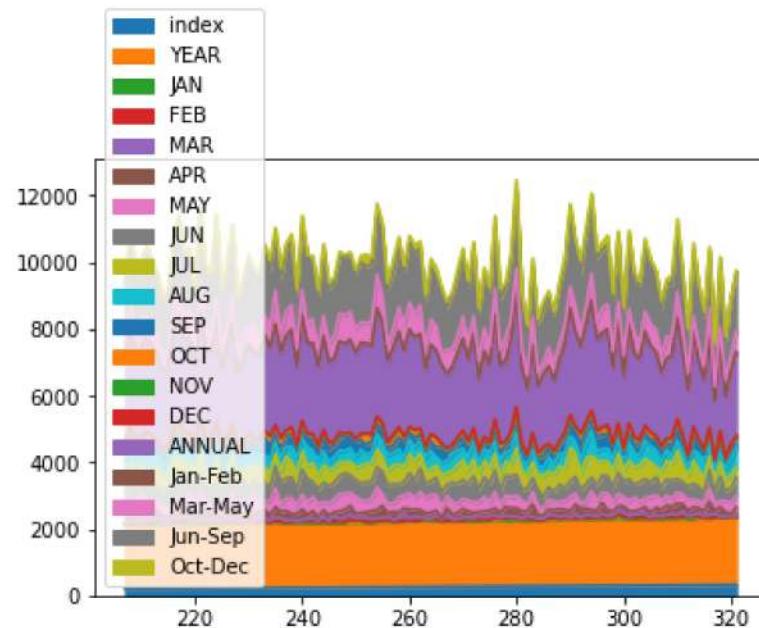
```
In [48]: ASSAM.plot.line()
```

```
Out[48]: <AxesSubplot:>
```



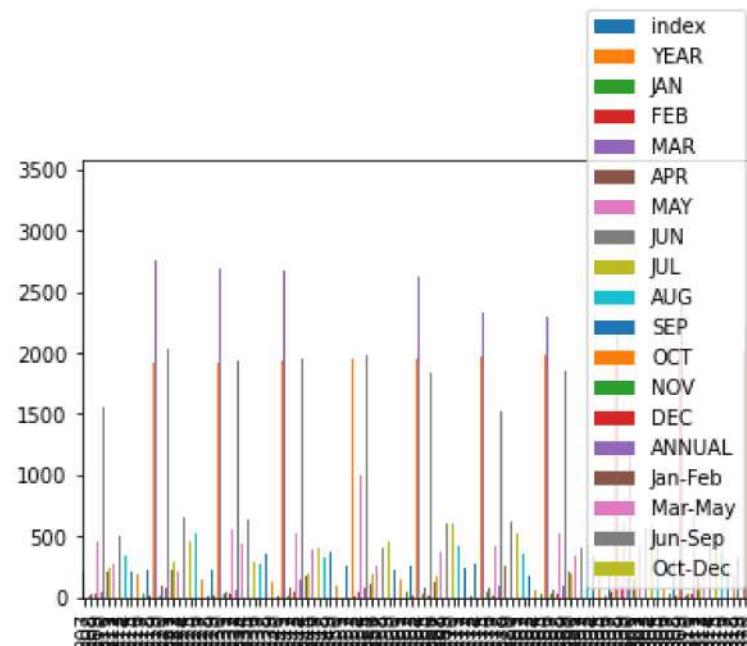
```
In [49]: ASSAM.plot.area()
```

```
Out[49]: <AxesSubplot:>
```



```
In [50]: ASSAM.plot.bar()
```

```
Out[50]: <AxesSubplot:>
```



NAGA MANI MIZO TRIPURA

In [51]: NAGA=sd[322:437]

NAGA

Out[51]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
322	322	NAGA MANI MIZO TRIPURA	1901	11.7	18.1	29.4	206.2	124.0	443.3	331.4	466.0	304.1	166.
323	323	NAGA MANI MIZO TRIPURA	1902	4.8	0.5	36.3	297.8	215.5	480.1	392.4	312.8	318.7	102.
324	324	NAGA MANI MIZO TRIPURA	1903	6.5	40.5	139.8	45.5	159.9	458.6	300.2	470.6	366.1	166.
325	325	NAGA MANI MIZO TRIPURA	1904	2.3	46.9	47.5	290.3	230.5	455.3	423.5	423.6	375.8	128.
326	326	NAGA MANI MIZO TRIPURA	1905	9.1	35.3	306.5	161.7	193.6	339.7	450.1	429.9	320.1	246.
...
432	432	NAGA MANI MIZO TRIPURA	2011	12.6	3.6	51.4	81.1	334.9	374.2	313.3	367.6	258.3	92.
433	433	NAGA MANI MIZO TRIPURA	2012	24.5	10.2	20.3	243.5	163.5	396.2	280.1	342.7	248.7	160.
434	434	NAGA MANI MIZO TRIPURA	2013	0.2	5.7	19.7	60.3	348.9	206.6	255.9	291.3	241.4	125.
435	435	NAGA MANI MIZO TRIPURA	2014	1.2	21.0	25.4	49.6	192.5	268.3	295.7	372.3	300.9	69.
436	436	NAGA MANI MIZO TRIPURA	2015	14.4	14.2	21.6	253.5	198.3	283.9	413.6	334.2	255.9	118.

115 rows × 20 columns



In [52]: NAGA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 322 to 436
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [53]: NAGA.describe()

Out[53]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	379.000000	1958.000000	14.025217	36.652174	77.199130	170.733043	290.839130	445
std	33.341666	33.341666	16.627750	37.776876	60.656689	78.559032	112.675514	123
min	322.000000	1901.000000	0.000000	0.000000	3.100000	26.300000	73.500000	206
25%	350.500000	1929.500000	3.150000	11.700000	31.750000	113.750000	210.650000	361
50%	379.000000	1958.000000	7.900000	30.000000	62.700000	161.700000	278.500000	442
75%	407.500000	1986.500000	18.450000	53.300000	105.050000	213.900000	352.300000	511
max	436.000000	2015.000000	91.400000	306.300000	306.500000	383.800000	743.000000	861

```
In [54]: NAGA.columns
```

```
Out[54]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [55]: NAGA.dropna()
```

```
Out[55]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
322	322	NAGA MANI MIZO TRIPURA	1901	11.7	18.1	29.4	206.2	124.0	443.3	331.4	466.0	304.1	166.
323	323	NAGA MANI MIZO TRIPURA	1902	4.8	0.5	36.3	297.8	215.5	480.1	392.4	312.8	318.7	102.
324	324	NAGA MANI MIZO TRIPURA	1903	6.5	40.5	139.8	45.5	159.9	458.6	300.2	470.6	366.1	166.
325	325	NAGA MANI MIZO TRIPURA	1904	2.3	46.9	47.5	290.3	230.5	455.3	423.5	423.6	375.8	128.
326	326	NAGA MANI MIZO TRIPURA	1905	9.1	35.3	306.5	161.7	193.6	339.7	450.1	429.9	320.1	246.
...
432	432	NAGA MANI MIZO TRIPURA	2011	12.6	3.6	51.4	81.1	334.9	374.2	313.3	367.6	258.3	92.
433	433	NAGA MANI MIZO TRIPURA	2012	24.5	10.2	20.3	243.5	163.5	396.2	280.1	342.7	248.7	160.
434	434	NAGA MANI MIZO TRIPURA	2013	0.2	5.7	19.7	60.3	348.9	206.6	255.9	291.3	241.4	125.
435	435	NAGA MANI MIZO TRIPURA	2014	1.2	21.0	25.4	49.6	192.5	268.3	295.7	372.3	300.9	69.
436	436	NAGA MANI MIZO TRIPURA	2015	14.4	14.2	21.6	253.5	198.3	283.9	413.6	334.2	255.9	118.

115 rows × 20 columns

```
In [56]: NAGA.fillna(356)
```

Out[56]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
322	322	NAGA MANI MIZO TRIPURA	1901	11.7	18.1	29.4	206.2	124.0	443.3	331.4	466.0	304.1	166.
323	323	NAGA MANI MIZO TRIPURA	1902	4.8	0.5	36.3	297.8	215.5	480.1	392.4	312.8	318.7	102.
324	324	NAGA MANI MIZO TRIPURA	1903	6.5	40.5	139.8	45.5	159.9	458.6	300.2	470.6	366.1	166.
325	325	NAGA MANI MIZO TRIPURA	1904	2.3	46.9	47.5	290.3	230.5	455.3	423.5	423.6	375.8	128.
326	326	NAGA MANI MIZO TRIPURA	1905	9.1	35.3	306.5	161.7	193.6	339.7	450.1	429.9	320.1	246.
...
432	432	NAGA MANI MIZO TRIPURA	2011	12.6	3.6	51.4	81.1	334.9	374.2	313.3	367.6	258.3	92.
433	433	NAGA MANI MIZO TRIPURA	2012	24.5	10.2	20.3	243.5	163.5	396.2	280.1	342.7	248.7	160.
434	434	NAGA MANI MIZO TRIPURA	2013	0.2	5.7	19.7	60.3	348.9	206.6	255.9	291.3	241.4	125.
435	435	NAGA MANI MIZO TRIPURA	2014	1.2	21.0	25.4	49.6	192.5	268.3	295.7	372.3	300.9	69.
436	436	NAGA MANI MIZO TRIPURA	2015	14.4	14.2	21.6	253.5	198.3	283.9	413.6	334.2	255.9	118.

115 rows × 20 columns



```
In [57]: np.shape(NAGA)
```

Out[57]: (115, 20)

```
In [58]: np.size(NAGA)
```

Out[58]: 2300

In [59]: NAGA.isna()

Out[59]:

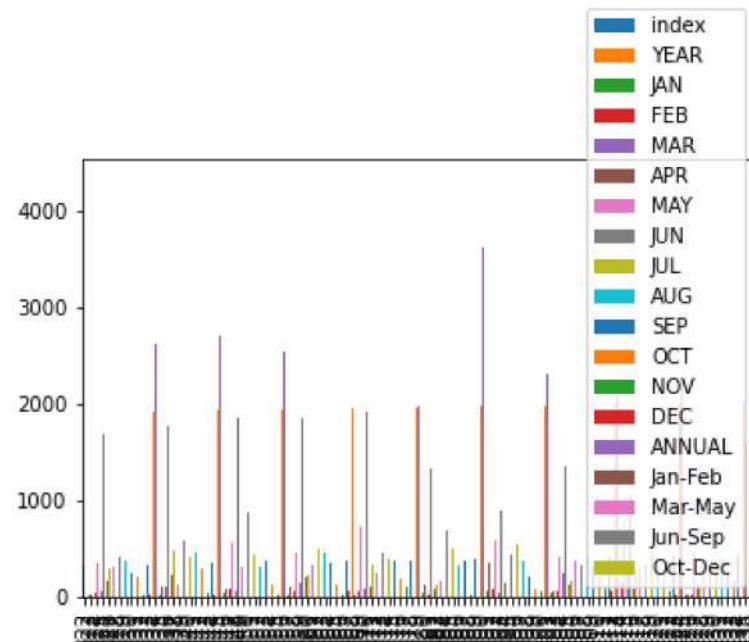
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
322	False		False	False	False	False														
323	False		False	False	False	False														
324	False		False	False	False	False														
325	False		False	False	False	False														
326	False		False	False	False	False														
...	
432	False		False	False	False	False														
433	False		False	False	False	False														
434	False		False	False	False	False														
435	False		False	False	False	False														
436	False		False	False	False	False														

115 rows × 20 columns



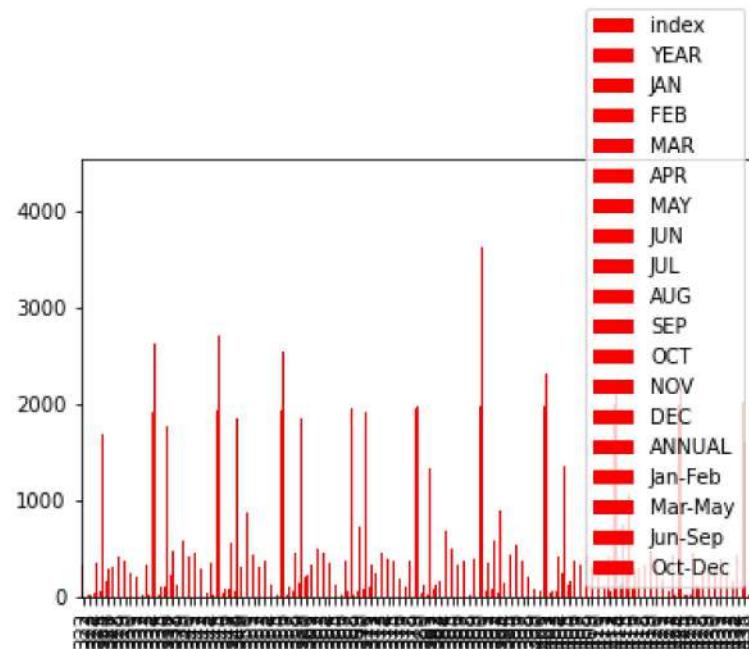
In [60]: NAGA.plot.bar()

Out[60]: <AxesSubplot:>



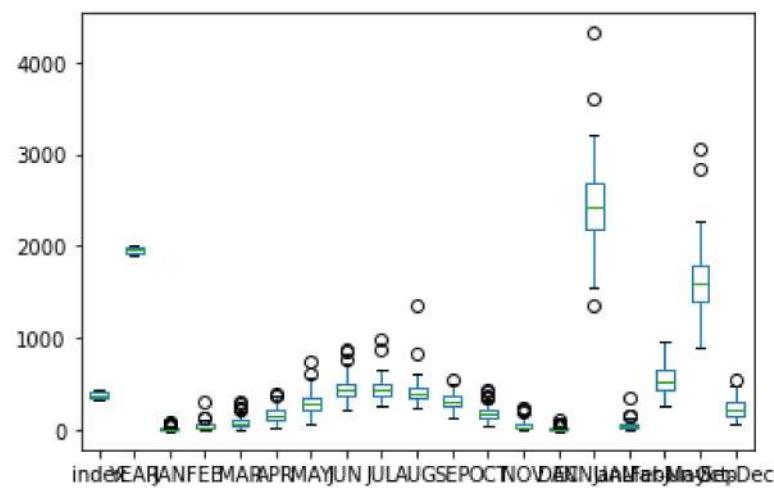
```
In [61]: NAGA.plot.bar(color='r')
```

```
Out[61]: <AxesSubplot:>
```



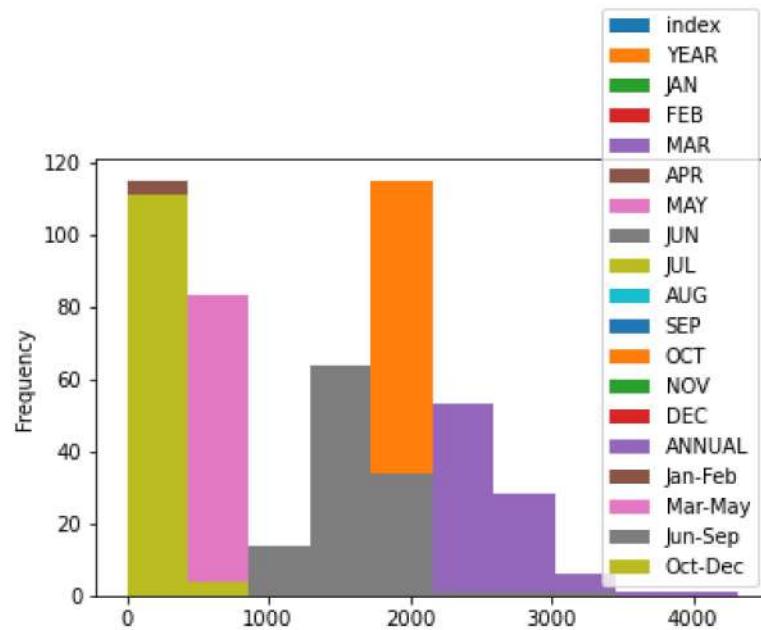
```
In [62]: NAGA.plot.box()
```

```
Out[62]: <AxesSubplot:>
```



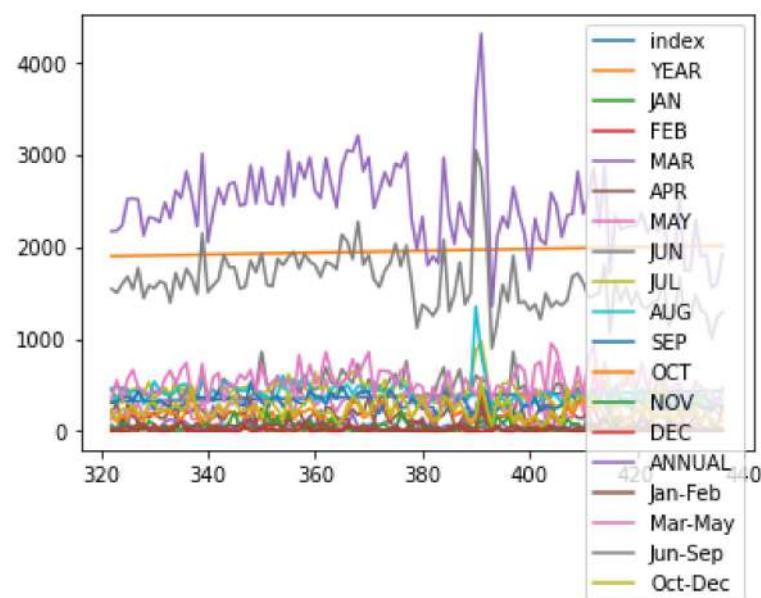
```
In [63]: NAGA.plot.hist()
```

```
Out[63]: <AxesSubplot:ylabel='Frequency'>
```



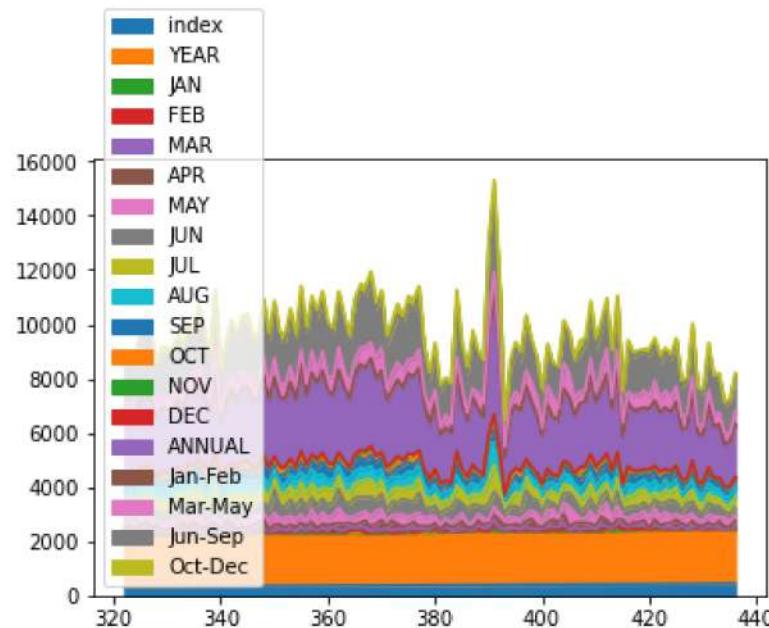
```
In [64]: NAGA.plot.line()
```

```
Out[64]: <AxesSubplot:>
```



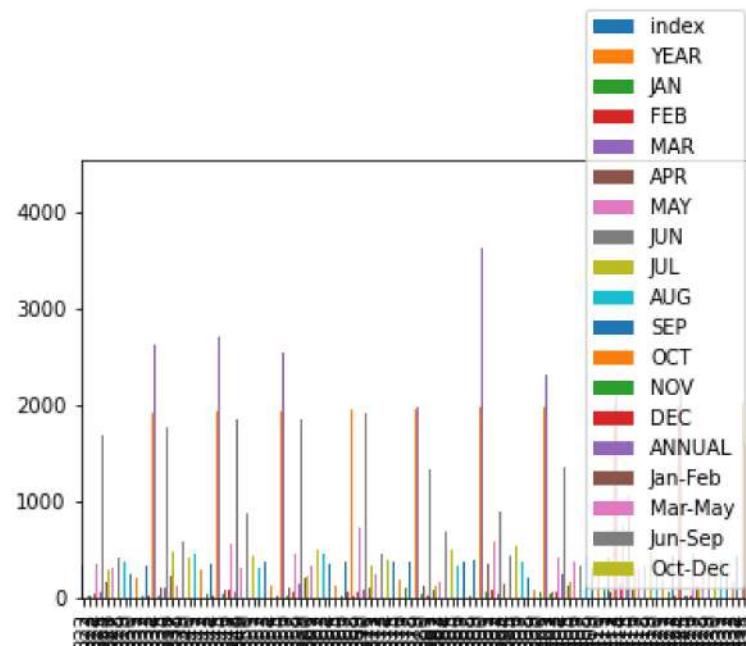
```
In [65]: NAGA.plot.area()
```

```
Out[65]: <AxesSubplot:>
```



```
In [66]: NAGA.plot.bar()
```

```
Out[66]: <AxesSubplot:>
```



SUB HIMALAYAN WEST BENGAL & SIKKIM

In [67]: SUB=sd[437:552]
SUB

Out[67]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
437	437	SUB HIMALAYAN WEST BENGAL & SIKKIM	1901	26.5	14.8	14.1	29.2	195.5	488.4	524.8	501.1	242.7	55
438	438	SUB HIMALAYAN WEST BENGAL & SIKKIM	1902	1.2	0.7	87.1	126.1	271.3	539.2	671.0	603.8	799.9	74
439	439	SUB HIMALAYAN WEST BENGAL & SIKKIM	1903	5.5	8.7	19.6	18.6	163.6	541.2	431.5	708.8	365.2	141
440	440	SUB HIMALAYAN WEST BENGAL & SIKKIM	1904	3.4	29.2	0.9	124.3	333.6	274.2	500.4	468.5	260.6	164
441	441	SUB HIMALAYAN WEST BENGAL & SIKKIM	1905	12.0	31.2	51.9	104.4	290.6	524.8	523.1	1036.6	321.1	87
...
547	547	SUB HIMALAYAN WEST BENGAL & SIKKIM	2011	8.5	19.9	71.2	135.0	247.8	419.8	612.3	470.3	356.3	46
548	548	SUB HIMALAYAN WEST BENGAL & SIKKIM	2012	15.3	13.9	45.5	159.8	202.4	604.2	684.5	332.7	434.7	119
549	549	SUB HIMALAYAN WEST BENGAL & SIKKIM	2013	3.0	23.6	32.1	114.7	296.5	404.9	588.4	416.3	308.0	199
550	550	SUB HIMALAYAN WEST BENGAL & SIKKIM	2014	0.2	26.6	37.7	47.9	308.6	543.2	384.6	563.3	371.5	31
551	551	SUB HIMALAYAN WEST BENGAL & SIKKIM	2015	15.7	15.0	64.8	149.0	304.6	508.2	393.3	626.6	354.9	53

115 rows × 20 columns



In [68]: SUB.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 437 to 551
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [69]: SUB.describe()

Out[69]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	494.000000	1958.000000	14.083478	22.974783	43.135652	110.681739	269.143478	537
std	33.341666	33.341666	17.066089	19.583787	30.851319	55.688697	69.790921	134
min	437.000000	1901.000000	0.000000	0.100000	0.000000	4.800000	142.000000	261
25%	465.500000	1929.500000	2.250000	8.650000	15.100000	71.300000	217.100000	447
50%	494.000000	1958.000000	9.400000	19.600000	42.600000	110.900000	269.400000	527
75%	522.500000	1986.500000	19.550000	33.400000	63.650000	144.850000	311.100000	611
max	551.000000	2015.000000	103.000000	109.900000	132.100000	281.800000	503.100000	896



```
In [70]: SUB.columns
```

```
Out[70]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],
      dtype='object')
```

In [71]: SUB.dropna()

Out[71]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
437	437	SUB HIMALAYAN WEST BENGAL & SIKKIM	1901	26.5	14.8	14.1	29.2	195.5	488.4	524.8	501.1	242.7	55
438	438	SUB HIMALAYAN WEST BENGAL & SIKKIM	1902	1.2	0.7	87.1	126.1	271.3	539.2	671.0	603.8	799.9	74
439	439	SUB HIMALAYAN WEST BENGAL & SIKKIM	1903	5.5	8.7	19.6	18.6	163.6	541.2	431.5	708.8	365.2	141
440	440	SUB HIMALAYAN WEST BENGAL & SIKKIM	1904	3.4	29.2	0.9	124.3	333.6	274.2	500.4	468.5	260.6	164
441	441	SUB HIMALAYAN WEST BENGAL & SIKKIM	1905	12.0	31.2	51.9	104.4	290.6	524.8	523.1	1036.6	321.1	87
...
547	547	SUB HIMALAYAN WEST BENGAL & SIKKIM	2011	8.5	19.9	71.2	135.0	247.8	419.8	612.3	470.3	356.3	46
548	548	SUB HIMALAYAN WEST BENGAL & SIKKIM	2012	15.3	13.9	45.5	159.8	202.4	604.2	684.5	332.7	434.7	119
549	549	SUB HIMALAYAN WEST BENGAL & SIKKIM	2013	3.0	23.6	32.1	114.7	296.5	404.9	588.4	416.3	308.0	199
550	550	SUB HIMALAYAN WEST BENGAL & SIKKIM	2014	0.2	26.6	37.7	47.9	308.6	543.2	384.6	563.3	371.5	31
551	551	SUB HIMALAYAN WEST BENGAL & SIKKIM	2015	15.7	15.0	64.8	149.0	304.6	508.2	393.3	626.6	354.9	53

115 rows × 20 columns



In [72]: SUB.fillna(356)

Out[72]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
437	437	SUB HIMALAYAN WEST BENGAL & SIKKIM	1901	26.5	14.8	14.1	29.2	195.5	488.4	524.8	501.1	242.7	55
438	438	SUB HIMALAYAN WEST BENGAL & SIKKIM	1902	1.2	0.7	87.1	126.1	271.3	539.2	671.0	603.8	799.9	74
439	439	SUB HIMALAYAN WEST BENGAL & SIKKIM	1903	5.5	8.7	19.6	18.6	163.6	541.2	431.5	708.8	365.2	141
440	440	SUB HIMALAYAN WEST BENGAL & SIKKIM	1904	3.4	29.2	0.9	124.3	333.6	274.2	500.4	468.5	260.6	164
441	441	SUB HIMALAYAN WEST BENGAL & SIKKIM	1905	12.0	31.2	51.9	104.4	290.6	524.8	523.1	1036.6	321.1	87
...
547	547	SUB HIMALAYAN WEST BENGAL & SIKKIM	2011	8.5	19.9	71.2	135.0	247.8	419.8	612.3	470.3	356.3	46
548	548	SUB HIMALAYAN WEST BENGAL & SIKKIM	2012	15.3	13.9	45.5	159.8	202.4	604.2	684.5	332.7	434.7	119
549	549	SUB HIMALAYAN WEST BENGAL & SIKKIM	2013	3.0	23.6	32.1	114.7	296.5	404.9	588.4	416.3	308.0	199
550	550	SUB HIMALAYAN WEST BENGAL & SIKKIM	2014	0.2	26.6	37.7	47.9	308.6	543.2	384.6	563.3	371.5	31
551	551	SUB HIMALAYAN WEST BENGAL & SIKKIM	2015	15.7	15.0	64.8	149.0	304.6	508.2	393.3	626.6	354.9	53

115 rows × 20 columns



```
In [73]: np.shape(SUB)
```

```
Out[73]: (115, 20)
```

```
In [74]: np.size(SUB)
```

```
Out[74]: 2300
```

```
In [75]: SUB.isna()
```

```
Out[75]:
```

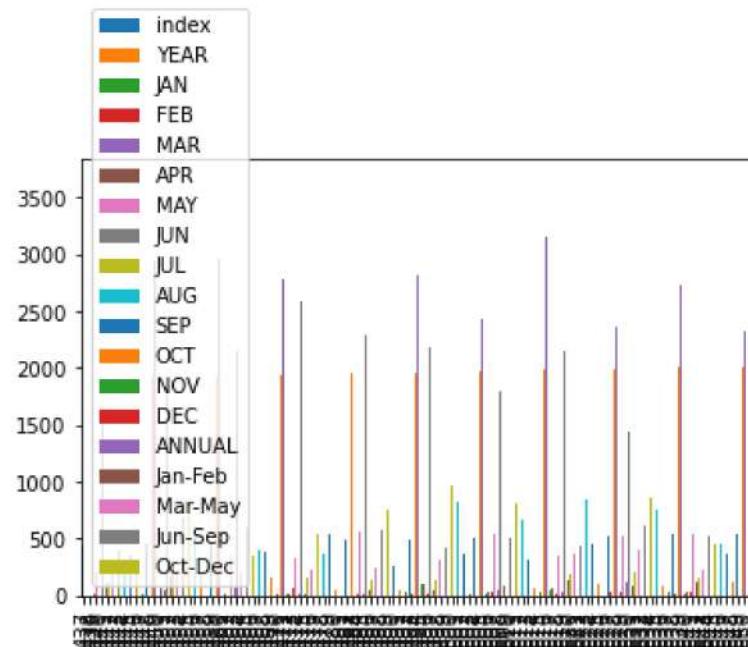
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	437	False		False											
	438	False		False											
	439	False		False											
	440	False		False											
	441	False		False											

	547	False		False											
	548	False		False											
	549	False		False											
	550	False		False											
	551	False		False											

115 rows × 20 columns

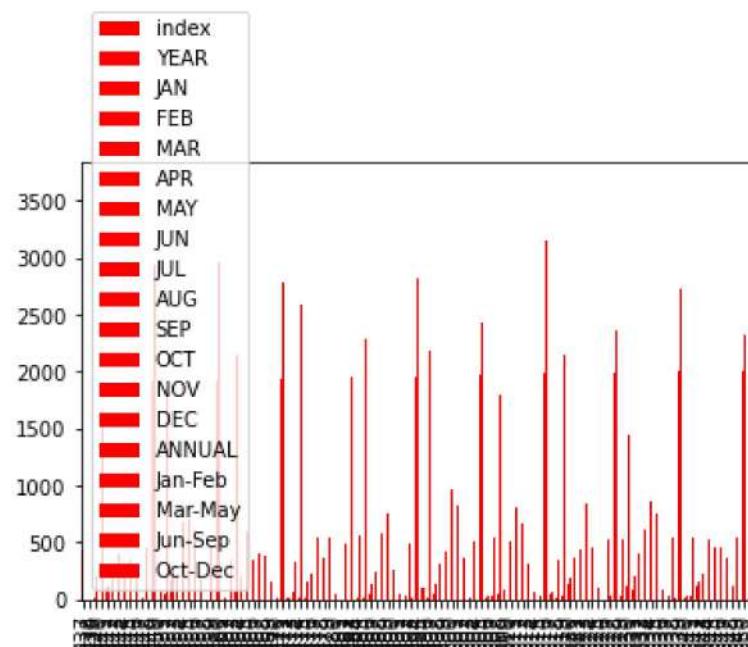
```
In [76]: SUB.plot.bar()
```

```
Out[76]: <AxesSubplot:>
```



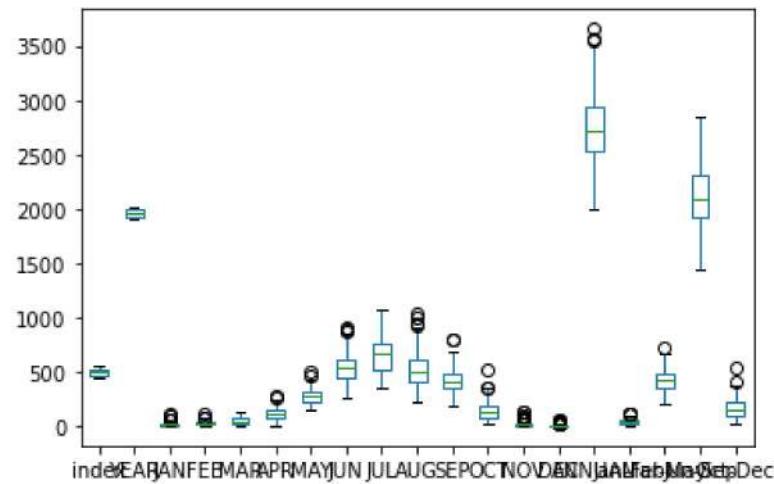
```
In [77]: SUB.plot.bar(color='r')
```

```
Out[77]: <AxesSubplot:>
```



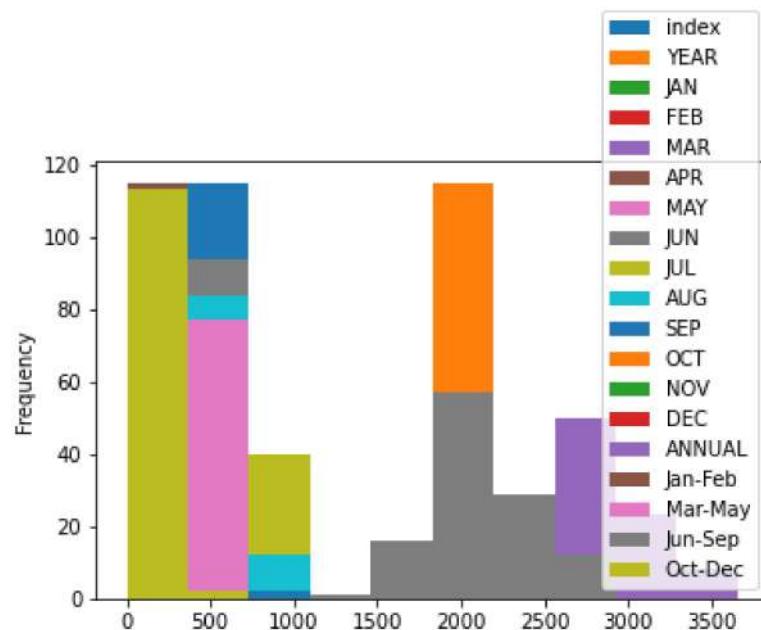
```
In [78]: SUB.plot.box()
```

```
Out[78]: <AxesSubplot:>
```



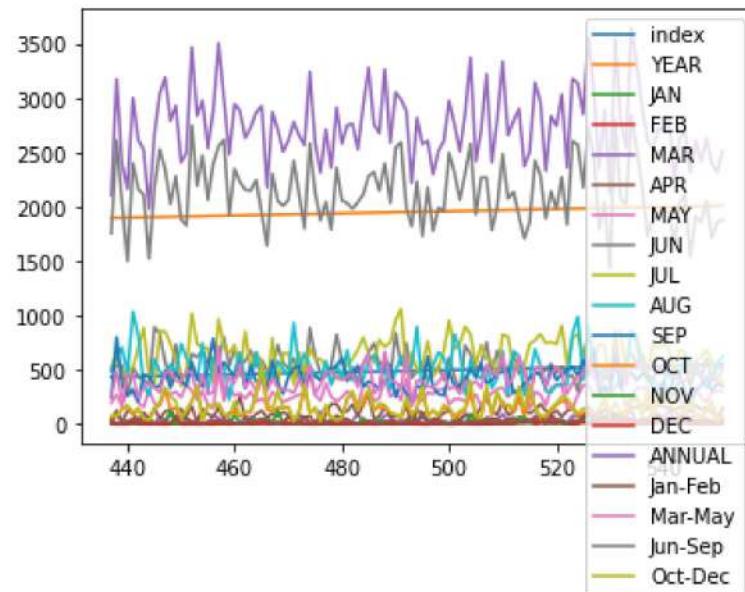
```
In [79]: SUB.plot.hist()
```

```
Out[79]: <AxesSubplot:ylabel='Frequency'>
```



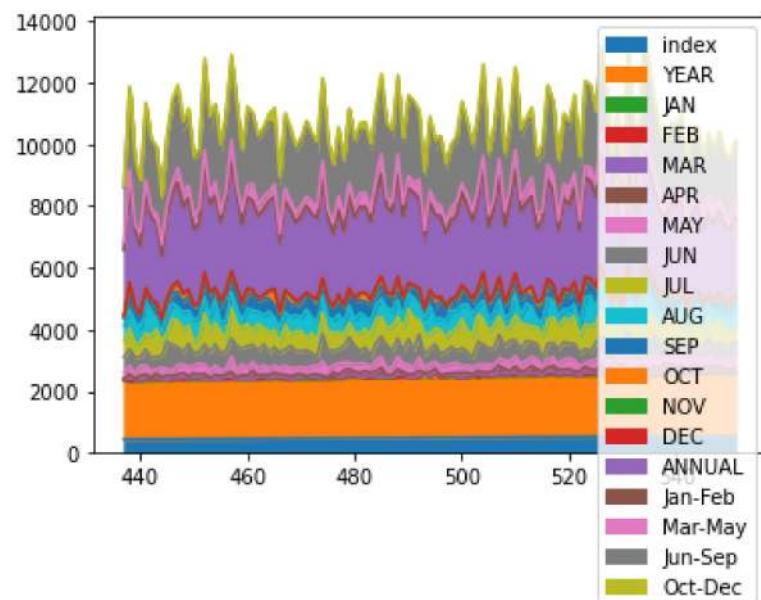
```
In [80]: SUB.plot.line()
```

```
Out[80]: <AxesSubplot:>
```



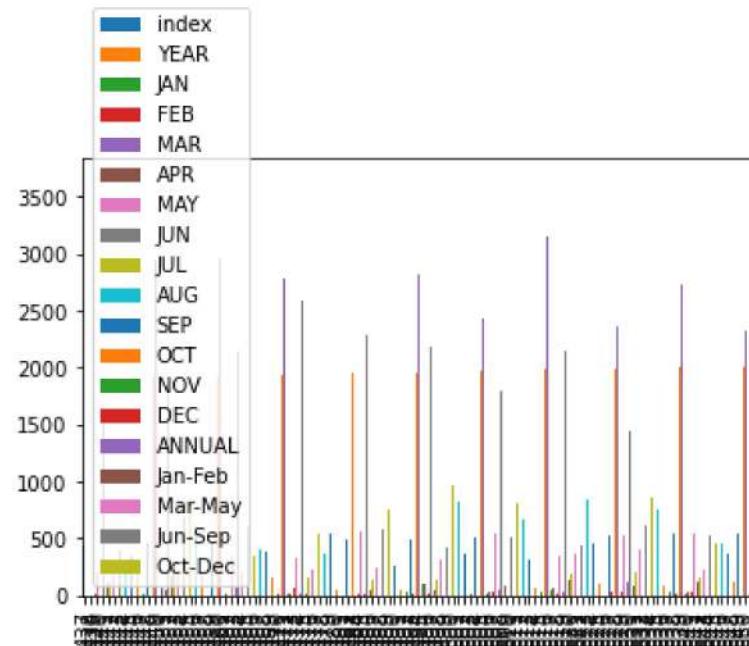
```
In [81]: SUB.plot.area()
```

```
Out[81]: <AxesSubplot:>
```



In [82]: SUB.plot.bar()

Out[82]: <AxesSubplot:>



GANGETIC WEST BENGAL

```
In [83]: GANGETIC=sd[552:667]  
GANGETIC
```

Out[83]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
552	552	GANGETIC WEST BENGAL	1901	37.1	58.4	3.9	64.1	121.7	198.0	280.8	275.7	313.5	51.
553	553	GANGETIC WEST BENGAL	1902	0.0	1.2	44.2	103.8	161.6	140.9	347.8	264.8	230.5	32.
554	554	GANGETIC WEST BENGAL	1903	17.5	24.6	37.3	30.6	78.5	201.7	179.6	277.6	300.7	198.1
555	555	GANGETIC WEST BENGAL	1904	0.1	23.9	35.6	17.5	160.2	286.7	435.3	241.7	142.8	35.
556	556	GANGETIC WEST BENGAL	1905	30.9	49.6	84.7	84.9	156.8	70.9	525.5	263.6	287.6	107.
...
662	662	GANGETIC WEST BENGAL	2011	2.5	2.7	40.5	75.0	132.6	434.5	219.9	443.2	295.9	36.
663	663	GANGETIC WEST BENGAL	2012	40.7	15.3	4.4	57.7	44.2	146.6	315.0	261.4	246.9	64.
664	664	GANGETIC WEST BENGAL	2013	2.5	10.0	4.8	45.6	195.9	233.4	263.2	401.4	254.0	353.
665	665	GANGETIC WEST BENGAL	2014	0.9	42.2	19.9	1.9	124.4	193.6	298.7	292.6	229.5	56.
666	666	GANGETIC WEST BENGAL	2015	12.9	5.5	19.3	88.7	57.6	247.2	633.1	260.6	164.0	32.

115 rows × 20 columns



In [84]: GANGETIC.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 552 to 666
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [85]: GANGETIC.describe()

Out[85]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	609.000000	1958.000000	12.595652	22.452174	29.090435	44.885217	107.787826	247
std	33.341666	33.341666	14.741821	24.165919	30.754415	31.812974	51.001443	99
min	552.000000	1901.000000	0.000000	0.000000	0.100000	0.900000	16.400000	69
25%	580.500000	1929.500000	1.250000	5.200000	7.200000	21.000000	71.900000	180
50%	609.000000	1958.000000	6.800000	13.600000	18.900000	39.200000	98.900000	227
75%	637.500000	1986.500000	18.350000	30.650000	42.250000	61.050000	131.400000	304
max	666.000000	2015.000000	60.000000	123.600000	152.500000	174.200000	250.900000	597

```
In [86]: GANGETIC.columns
```

```
Out[86]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [87]: GANGETIC.dropna()
```

```
Out[87]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
552	552	GANGETIC WEST BENGAL	1901	37.1	58.4	3.9	64.1	121.7	198.0	280.8	275.7	313.5	51.
553	553	GANGETIC WEST BENGAL	1902	0.0	1.2	44.2	103.8	161.6	140.9	347.8	264.8	230.5	32.
554	554	GANGETIC WEST BENGAL	1903	17.5	24.6	37.3	30.6	78.5	201.7	179.6	277.6	300.7	198.1
555	555	GANGETIC WEST BENGAL	1904	0.1	23.9	35.6	17.5	160.2	286.7	435.3	241.7	142.8	35.
556	556	GANGETIC WEST BENGAL	1905	30.9	49.6	84.7	84.9	156.8	70.9	525.5	263.6	287.6	107.
...
662	662	GANGETIC WEST BENGAL	2011	2.5	2.7	40.5	75.0	132.6	434.5	219.9	443.2	295.9	36.
663	663	GANGETIC WEST BENGAL	2012	40.7	15.3	4.4	57.7	44.2	146.6	315.0	261.4	246.9	64.
664	664	GANGETIC WEST BENGAL	2013	2.5	10.0	4.8	45.6	195.9	233.4	263.2	401.4	254.0	353.
665	665	GANGETIC WEST BENGAL	2014	0.9	42.2	19.9	1.9	124.4	193.6	298.7	292.6	229.5	56.
666	666	GANGETIC WEST BENGAL	2015	12.9	5.5	19.3	88.7	57.6	247.2	633.1	260.6	164.0	32.

115 rows × 20 columns

```
In [88]: GANGETIC.fillna(356)
```

Out[88]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
552	552	GANGETIC WEST BENGAL	1901	37.1	58.4	3.9	64.1	121.7	198.0	280.8	275.7	313.5	51.
553	553	GANGETIC WEST BENGAL	1902	0.0	1.2	44.2	103.8	161.6	140.9	347.8	264.8	230.5	32.
554	554	GANGETIC WEST BENGAL	1903	17.5	24.6	37.3	30.6	78.5	201.7	179.6	277.6	300.7	198.1
555	555	GANGETIC WEST BENGAL	1904	0.1	23.9	35.6	17.5	160.2	286.7	435.3	241.7	142.8	35.
556	556	GANGETIC WEST BENGAL	1905	30.9	49.6	84.7	84.9	156.8	70.9	525.5	263.6	287.6	107.
...
662	662	GANGETIC WEST BENGAL	2011	2.5	2.7	40.5	75.0	132.6	434.5	219.9	443.2	295.9	36.
663	663	GANGETIC WEST BENGAL	2012	40.7	15.3	4.4	57.7	44.2	146.6	315.0	261.4	246.9	64.
664	664	GANGETIC WEST BENGAL	2013	2.5	10.0	4.8	45.6	195.9	233.4	263.2	401.4	254.0	353.
665	665	GANGETIC WEST BENGAL	2014	0.9	42.2	19.9	1.9	124.4	193.6	298.7	292.6	229.5	56.
666	666	GANGETIC WEST BENGAL	2015	12.9	5.5	19.3	88.7	57.6	247.2	633.1	260.6	164.0	32.

115 rows × 20 columns



```
In [89]: np.shape(GANGETIC)
```

Out[89]: (115, 20)

```
In [90]: np.size(GANGETIC)
```

Out[90]: 2300

In [91]: GANGETIC.isna()

Out[91]:

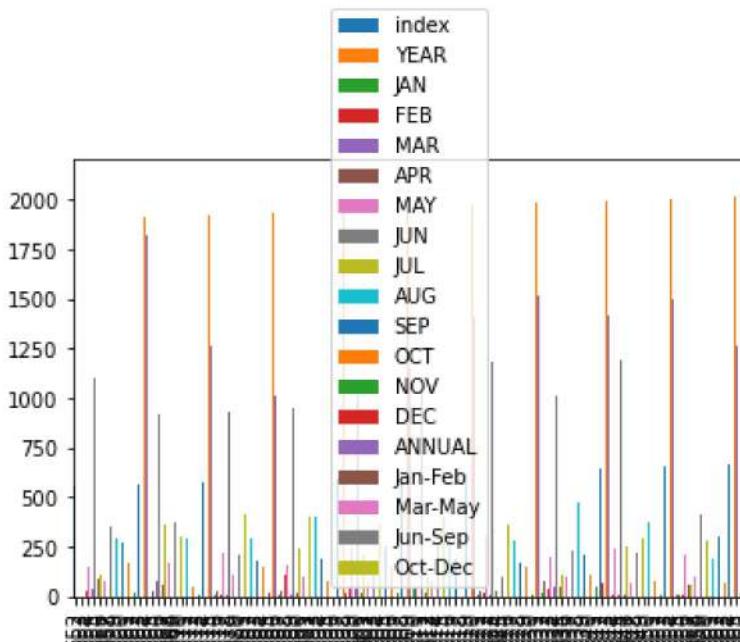
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
552	False		False	False	False	False														
553	False		False	False	False	False														
554	False		False	False	False	False														
555	False		False	False	False	False														
556	False		False	False	False	False														
...	
662	False		False	False	False	False														
663	False		False	False	False	False														
664	False		False	False	False	False														
665	False		False	False	False	False														
666	False		False	False	False	False														

115 rows × 20 columns



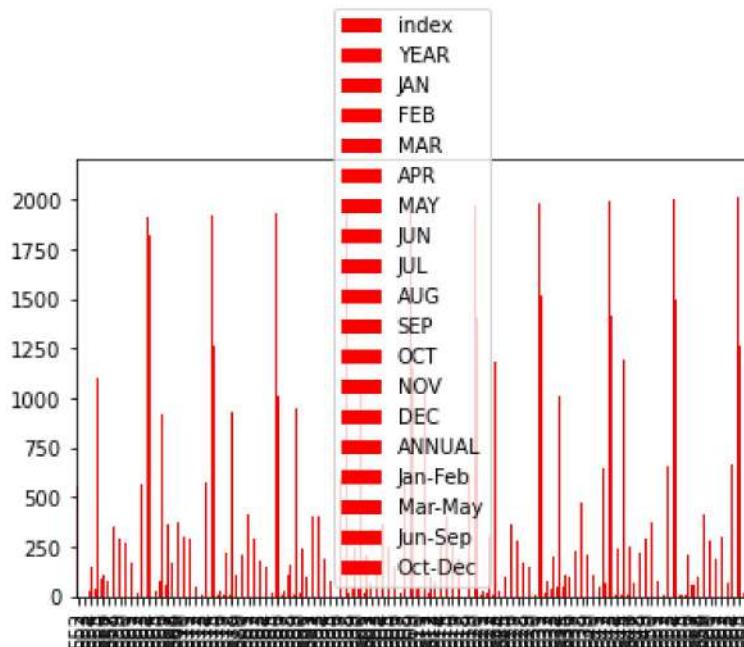
In [92]: GANGETIC.plot.bar()

Out[92]: <AxesSubplot:>



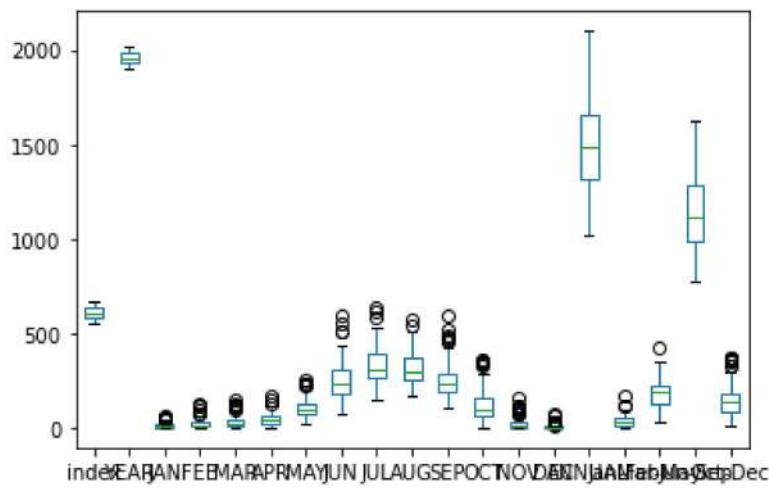
```
In [93]: GANGETIC.plot.bar(color='r')
```

```
Out[93]: <AxesSubplot:>
```



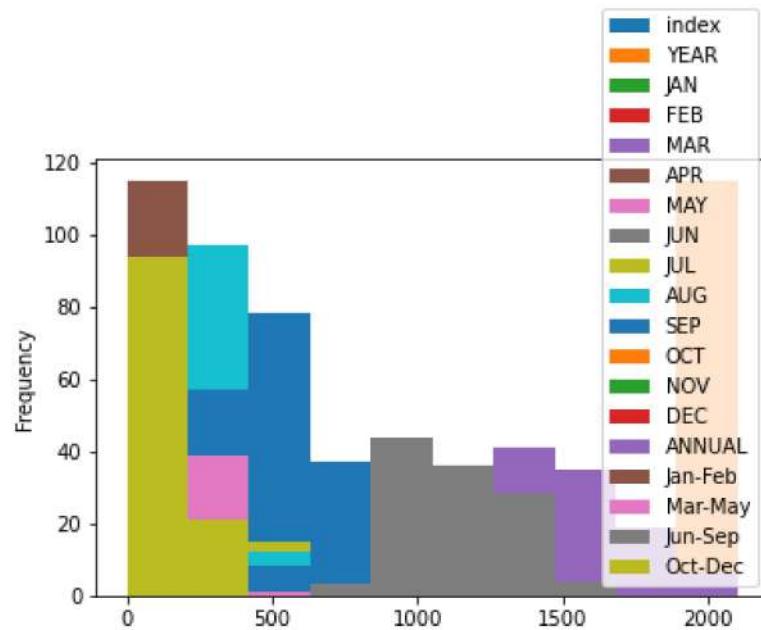
```
In [94]: GANGETIC.plot.box()
```

```
Out[94]: <AxesSubplot:>
```



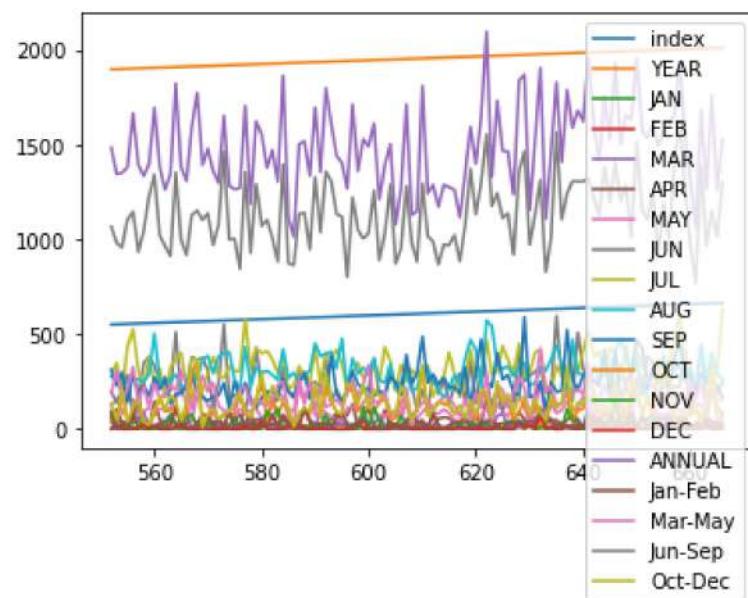
```
In [95]: GANGETIC.plot.hist()
```

```
Out[95]: <AxesSubplot:ylabel='Frequency'>
```



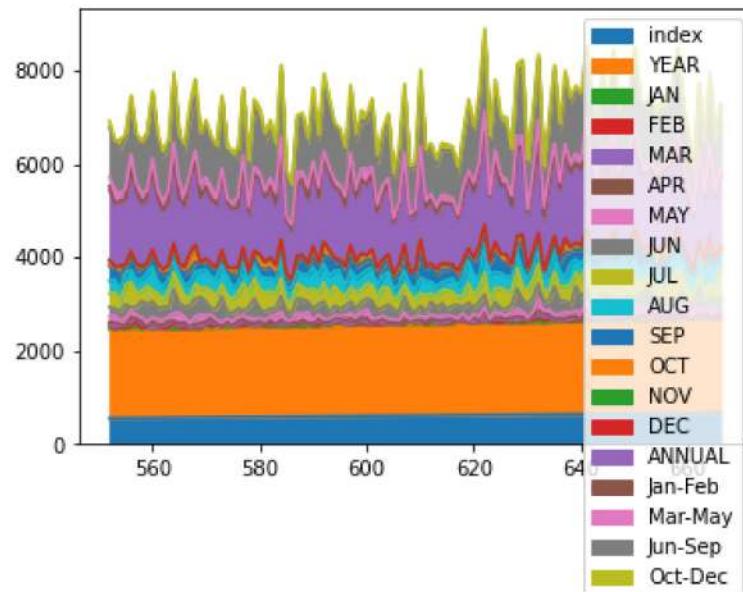
```
In [96]: GANGETIC.plot.line()
```

```
Out[96]: <AxesSubplot:>
```



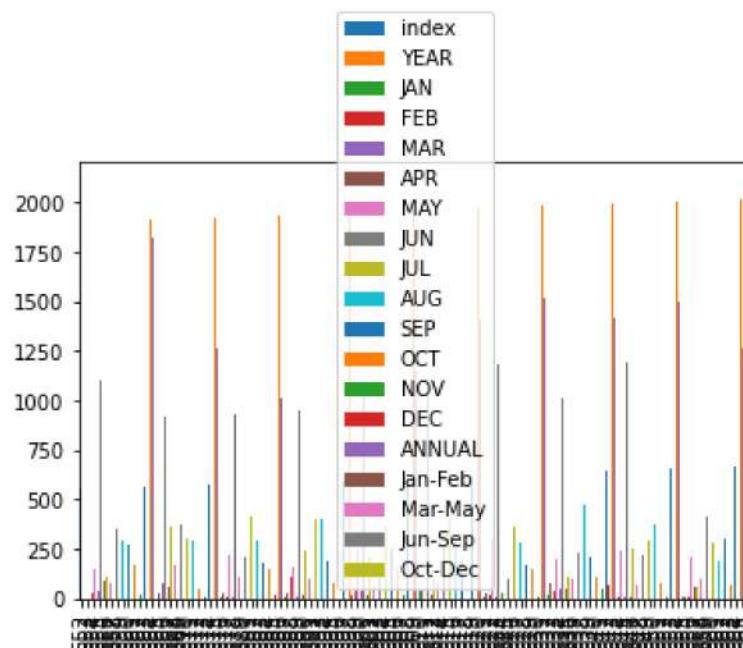
```
In [97]: GANGETIC.plot.area()
```

```
Out[97]: <AxesSubplot:>
```



```
In [98]: GANGETIC.plot.bar()
```

```
Out[98]: <AxesSubplot:>
```



ORISSA

```
In [99]: ORISSA=sd[667:782]  
ORISSA
```

Out[99]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
667	667	ORISSA	1901	39.5	65.1	16.1	51.6	79.0	78.2	288.4	307.7	185.3	76.1
668	668	ORISSA	1902	3.4	0.2	14.2	101.1	56.7	108.3	437.4	349.1	202.7	33.1
669	669	ORISSA	1903	19.7	18.9	10.5	34.6	73.3	154.3	410.4	295.2	265.6	228.1
670	670	ORISSA	1904	0.2	12.2	20.6	10.1	100.2	342.9	336.7	350.4	227.8	111.1
671	671	ORISSA	1905	24.3	17.2	66.3	56.9	107.5	92.0	330.1	281.4	344.1	36.1
...
777	777	ORISSA	2011	3.7	16.2	4.9	58.2	75.6	210.1	199.6	358.6	398.7	20.1
778	778	ORISSA	2012	50.8	3.6	0.9	34.8	21.3	169.6	324.3	417.0	242.4	66.1
779	779	ORISSA	2013	3.3	7.8	2.1	53.6	57.7	272.6	380.0	254.9	208.1	391.1
780	780	ORISSA	2014	0.0	17.6	25.1	11.7	111.9	92.2	496.2	386.3	281.1	111.1
781	781	ORISSA	2015	15.1	3.3	10.5	67.6	32.6	238.6	294.8	264.0	237.0	24.1

115 rows × 20 columns



In [100]: ORISSA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 667 to 781
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [101]: ORISSA.describe()

Out[101]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000
mean	724.000000	1958.000000	12.329565	19.71913	21.134783	34.160000	64.886087
std	33.341666	33.341666	15.620842	22.23721	22.259542	23.243417	39.851027
min	667.000000	1901.000000	0.000000	0.000000	0.100000	1.100000	16.200000
25%	695.500000	1929.500000	0.500000	3.45000	5.500000	18.400000	38.350000
50%	724.000000	1958.000000	5.500000	12.10000	12.600000	28.500000	57.700000
75%	752.500000	1986.500000	18.850000	28.45000	26.800000	46.850000	77.300000
max	781.000000	2015.000000	70.900000	116.20000	89.800000	148.400000	293.000000

```
In [102]: ORISSA.columns
```

```
Out[102]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [103]: ORISSA.dropna()
```

```
Out[103]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
667	667	ORISSA	1901	39.5	65.1	16.1	51.6	79.0	78.2	288.4	307.7	185.3	76.1
668	668	ORISSA	1902	3.4	0.2	14.2	101.1	56.7	108.3	437.4	349.1	202.7	33.1
669	669	ORISSA	1903	19.7	18.9	10.5	34.6	73.3	154.3	410.4	295.2	265.6	228.1
670	670	ORISSA	1904	0.2	12.2	20.6	10.1	100.2	342.9	336.7	350.4	227.8	111.1
671	671	ORISSA	1905	24.3	17.2	66.3	56.9	107.5	92.0	330.1	281.4	344.1	36.1
...
777	777	ORISSA	2011	3.7	16.2	4.9	58.2	75.6	210.1	199.6	358.6	398.7	20.1
778	778	ORISSA	2012	50.8	3.6	0.9	34.8	21.3	169.6	324.3	417.0	242.4	66.1
779	779	ORISSA	2013	3.3	7.8	2.1	53.6	57.7	272.6	380.0	254.9	208.1	391.1
780	780	ORISSA	2014	0.0	17.6	25.1	11.7	111.9	92.2	496.2	386.3	281.1	111.1
781	781	ORISSA	2015	15.1	3.3	10.5	67.6	32.6	238.6	294.8	264.0	237.0	24.1

115 rows × 20 columns

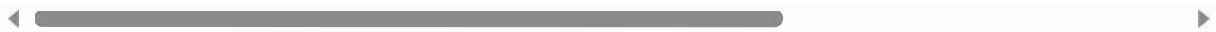


```
In [104]: ORISSA.fillna(356)
```

```
Out[104]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
667	667	ORISSA	1901	39.5	65.1	16.1	51.6	79.0	78.2	288.4	307.7	185.3	76.1	10.1	1.1
668	668	ORISSA	1902	3.4	0.2	14.2	101.1	56.7	108.3	437.4	349.1	202.7	33.1	1.1	1.1
669	669	ORISSA	1903	19.7	18.9	10.5	34.6	73.3	154.3	410.4	295.2	265.6	228.1	1.1	1.1
670	670	ORISSA	1904	0.2	12.2	20.6	10.1	100.2	342.9	336.7	350.4	227.8	111.1	1.1	1.1
671	671	ORISSA	1905	24.3	17.2	66.3	56.9	107.5	92.0	330.1	281.4	344.1	36.1	1.1	1.1
...
777	777	ORISSA	2011	3.7	16.2	4.9	58.2	75.6	210.1	199.6	358.6	398.7	20.1	1.1	1.1
778	778	ORISSA	2012	50.8	3.6	0.9	34.8	21.3	169.6	324.3	417.0	242.4	66.1	1.1	1.1
779	779	ORISSA	2013	3.3	7.8	2.1	53.6	57.7	272.6	380.0	254.9	208.1	391.1	1.1	1.1
780	780	ORISSA	2014	0.0	17.6	25.1	11.7	111.9	92.2	496.2	386.3	281.1	111.1	1.1	1.1
781	781	ORISSA	2015	15.1	3.3	10.5	67.6	32.6	238.6	294.8	264.0	237.0	24.1	1.1	1.1

115 rows × 20 columns



```
In [105]: np.shape(ORISSA)
```

```
Out[105]: (115, 20)
```

```
In [106]: np.size(ORISSA)
```

```
Out[106]: 2300
```

In [107]: ORISSA.isna()

Out[107]:

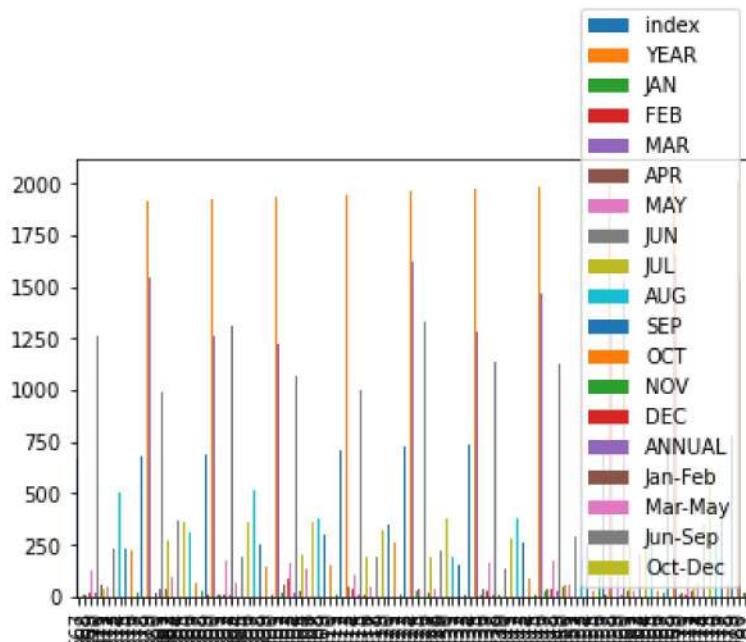
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
667	False		False	False	False	False														
668	False		False	False	False	False														
669	False		False	False	False	False														
670	False		False	False	False	False														
671	False		False	False	False	False														
...	
777	False		False	False	False	False														
778	False		False	False	False	False														
779	False		False	False	False	False														
780	False		False	False	False	False														
781	False		False	False	False	False														

115 rows × 20 columns



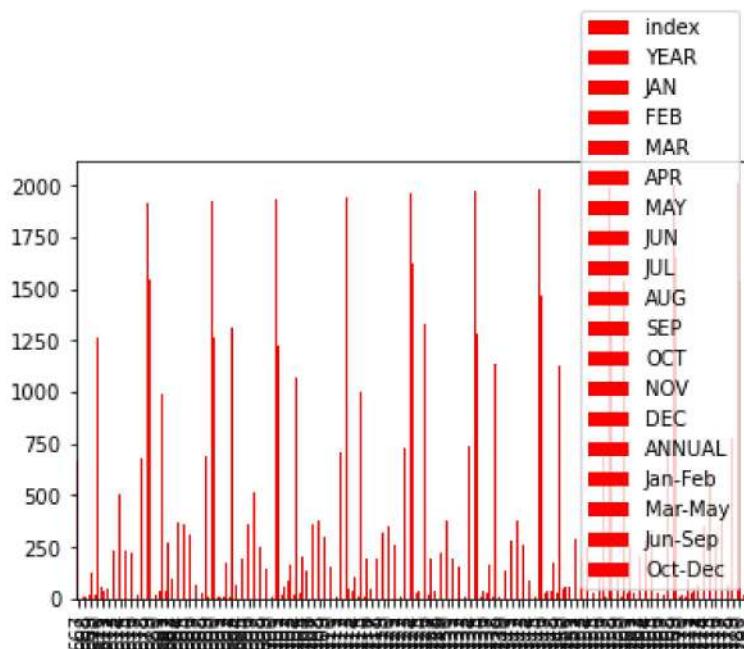
In [108]: ORISSA.plot.bar()

Out[108]: <AxesSubplot:>



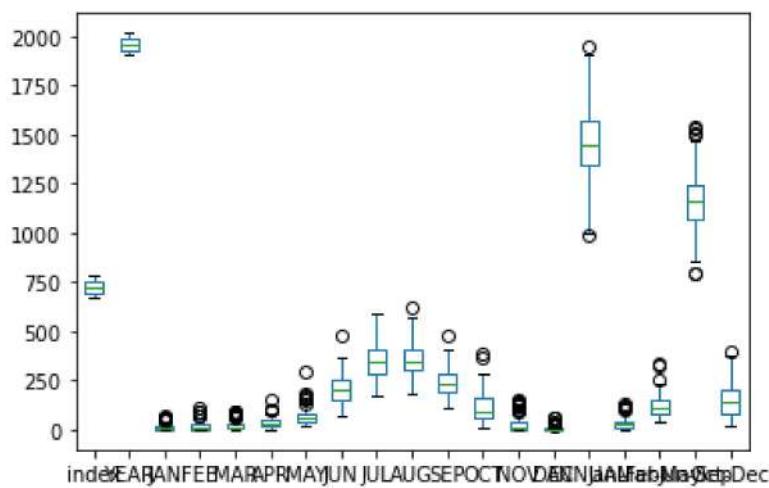
```
In [109]: ORISSA.plot.bar(color='r')
```

```
Out[109]: <AxesSubplot:>
```



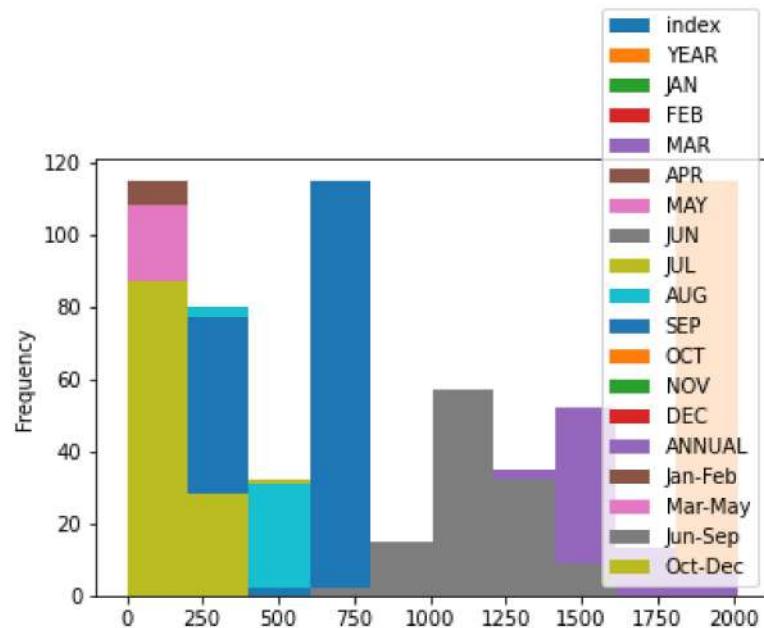
```
In [110]: ORISSA.plot.box()
```

```
Out[110]: <AxesSubplot:>
```



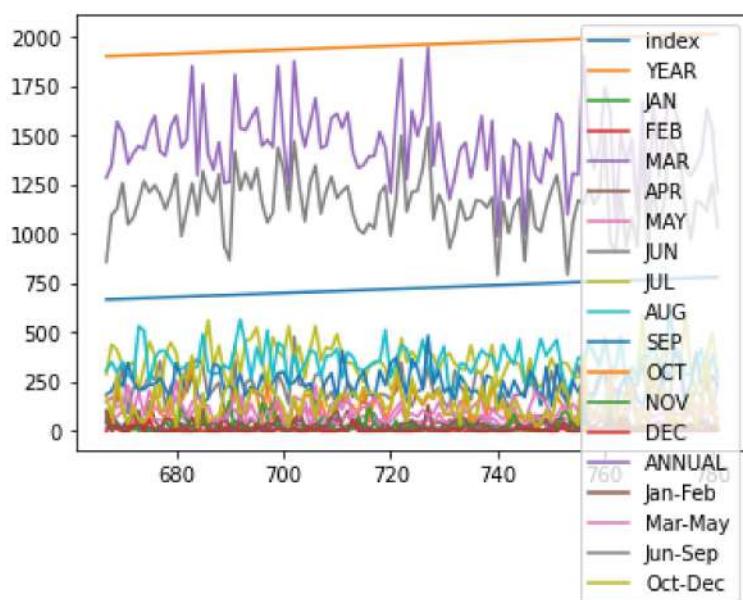
```
In [111]: ORISSA.plot.hist()
```

```
Out[111]: <AxesSubplot:ylabel='Frequency'>
```



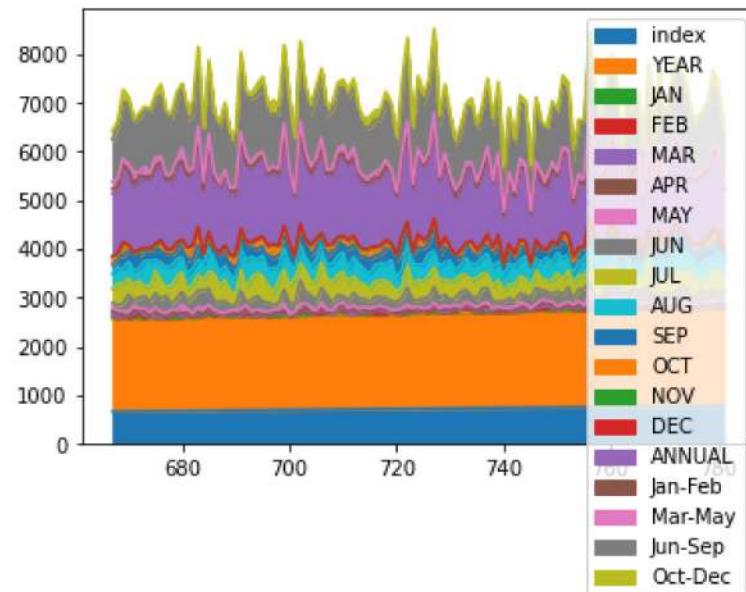
```
In [112]: ORISSA.plot.line()
```

```
Out[112]: <AxesSubplot:>
```



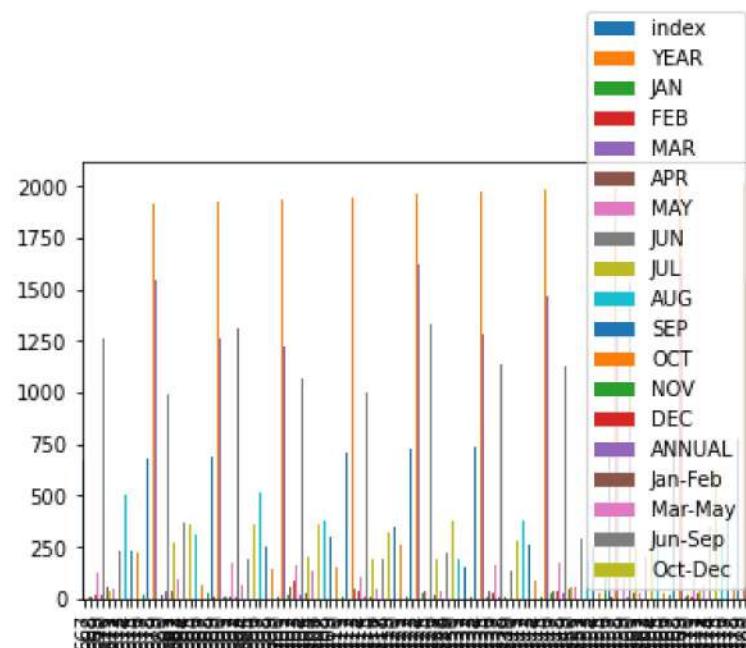
```
In [113]: ORISSA.plot.area()
```

```
Out[113]: <AxesSubplot:>
```



```
In [114]: ORISSA.plot.bar()
```

```
Out[114]: <AxesSubplot:>
```



JHARKHAND

```
In [115]: JHARKHAND=sd[782:897]  
JHARKHAND
```

Out[115]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
782	782	JHARKHAND	1901	92.7	66.6	11.1	18.4	33.5	70.9	269.4	415.1	248.0	37.3
783	783	JHARKHAND	1902	4.2	7.7	13.2	28.5	59.8	89.9	456.1	204.9	306.6	17.6
784	784	JHARKHAND	1903	25.1	19.5	10.7	32.8	56.4	142.1	206.1	280.8	190.2	210.1
785	785	JHARKHAND	1904	2.5	17.0	38.1	9.1	116.1	308.9	494.1	336.1	125.6	30.6
786	786	JHARKHAND	1905	38.4	53.3	61.6	32.9	66.2	41.5	420.3	293.7	322.8	21.3
...
892	892	JHARKHAND	2011	3.3	2.5	6.4	25.4	55.0	349.0	181.8	403.2	324.6	23.3
893	893	JHARKHAND	2012	34.6	10.3	1.5	9.6	6.6	121.1	287.2	282.4	217.6	37.8
894	894	JHARKHAND	2013	1.1	17.9	1.6	22.3	85.0	181.5	211.1	278.1	173.8	281.1
895	895	JHARKHAND	2014	9.9	47.5	22.9	1.9	98.2	139.7	321.3	290.9	178.2	44.9
896	896	JHARKHAND	2015	12.2	2.6	21.6	55.5	25.5	183.3	429.7	240.7	85.1	22.7

115 rows × 20 columns

In [116]: JHARKHAND.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 782 to 896
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [117]: JHARKHAND.describe()

Out[117]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	839.000000	1958.000000	17.621739	24.186087	18.423478	19.366957	48.317391	194
std	33.341666	33.341666	20.491016	25.779639	19.867899	16.149628	28.652462	87
min	782.000000	1901.000000	0.000000	0.100000	0.000000	0.100000	3.200000	41
25%	810.500000	1929.500000	2.400000	7.750000	3.350000	8.200000	26.950000	128
50%	839.000000	1958.000000	9.500000	16.200000	11.100000	15.700000	42.300000	183
75%	867.500000	1986.500000	24.900000	32.950000	27.300000	26.350000	66.300000	257
max	896.000000	2015.000000	102.900000	128.500000	95.000000	95.600000	150.100000	479

```
In [118]: JHARKHAND.columns
```

```
Out[118]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [119]: JHARKHAND.dropna()
```

```
Out[119]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
782	782	JHARKHAND	1901	92.7	66.6	11.1	18.4	33.5	70.9	269.4	415.1	248.0	37.3
783	783	JHARKHAND	1902	4.2	7.7	13.2	28.5	59.8	89.9	456.1	204.9	306.6	17.6
784	784	JHARKHAND	1903	25.1	19.5	10.7	32.8	56.4	142.1	206.1	280.8	190.2	210.1
785	785	JHARKHAND	1904	2.5	17.0	38.1	9.1	116.1	308.9	494.1	336.1	125.6	30.6
786	786	JHARKHAND	1905	38.4	53.3	61.6	32.9	66.2	41.5	420.3	293.7	322.8	21.3
...
892	892	JHARKHAND	2011	3.3	2.5	6.4	25.4	55.0	349.0	181.8	403.2	324.6	23.3
893	893	JHARKHAND	2012	34.6	10.3	1.5	9.6	6.6	121.1	287.2	282.4	217.6	37.8
894	894	JHARKHAND	2013	1.1	17.9	1.6	22.3	85.0	181.5	211.1	278.1	173.8	281.1
895	895	JHARKHAND	2014	9.9	47.5	22.9	1.9	98.2	139.7	321.3	290.9	178.2	44.9
896	896	JHARKHAND	2015	12.2	2.6	21.6	55.5	25.5	183.3	429.7	240.7	85.1	22.7

115 rows × 20 columns



```
In [120]: JHARKHAND.fillna(356)
```

```
Out[120]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
782	782	JHARKHAND	1901	92.7	66.6	11.1	18.4	33.5	70.9	269.4	415.1	248.0	37.3
783	783	JHARKHAND	1902	4.2	7.7	13.2	28.5	59.8	89.9	456.1	204.9	306.6	17.6
784	784	JHARKHAND	1903	25.1	19.5	10.7	32.8	56.4	142.1	206.1	280.8	190.2	210.1
785	785	JHARKHAND	1904	2.5	17.0	38.1	9.1	116.1	308.9	494.1	336.1	125.6	30.6
786	786	JHARKHAND	1905	38.4	53.3	61.6	32.9	66.2	41.5	420.3	293.7	322.8	21.3
...
892	892	JHARKHAND	2011	3.3	2.5	6.4	25.4	55.0	349.0	181.8	403.2	324.6	23.3
893	893	JHARKHAND	2012	34.6	10.3	1.5	9.6	6.6	121.1	287.2	282.4	217.6	37.8
894	894	JHARKHAND	2013	1.1	17.9	1.6	22.3	85.0	181.5	211.1	278.1	173.8	281.1
895	895	JHARKHAND	2014	9.9	47.5	22.9	1.9	98.2	139.7	321.3	290.9	178.2	44.9
896	896	JHARKHAND	2015	12.2	2.6	21.6	55.5	25.5	183.3	429.7	240.7	85.1	22.7

115 rows × 20 columns



```
In [121]: np.shape(JHARKHAND)
```

```
Out[121]: (115, 20)
```

```
In [122]: np.size(JHARKHAND)
```

```
Out[122]: 2300
```

```
In [123]: JHARKHAND.isna()
```

Out[123]:

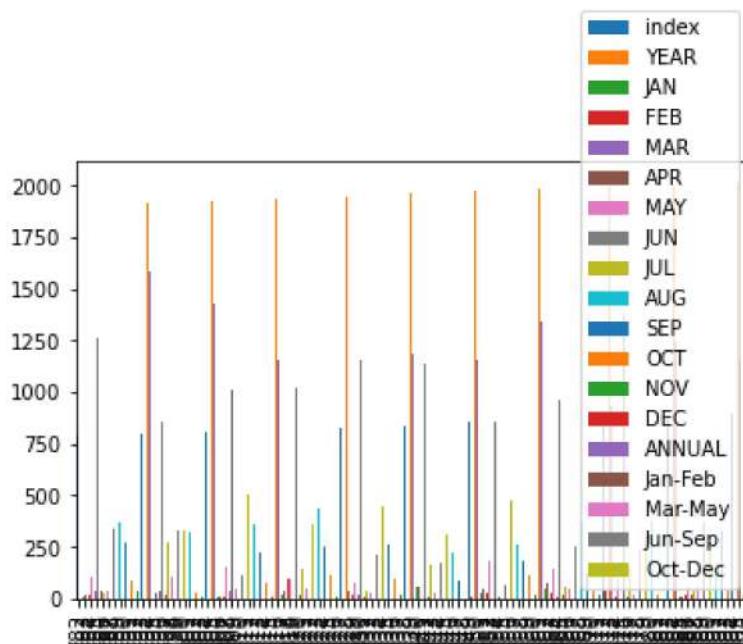
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
782	False		False	False	False	False														
783	False		False	False	False	False														
784	False		False	False	False	False														
785	False		False	False	False	False														
786	False		False	False	False	False														
...	
892	False		False	False	False	False														
893	False		False	False	False	False														
894	False		False	False	False	False														
895	False		False	False	False	False														
896	False		False	False	False	False														

115 rows × 20 columns



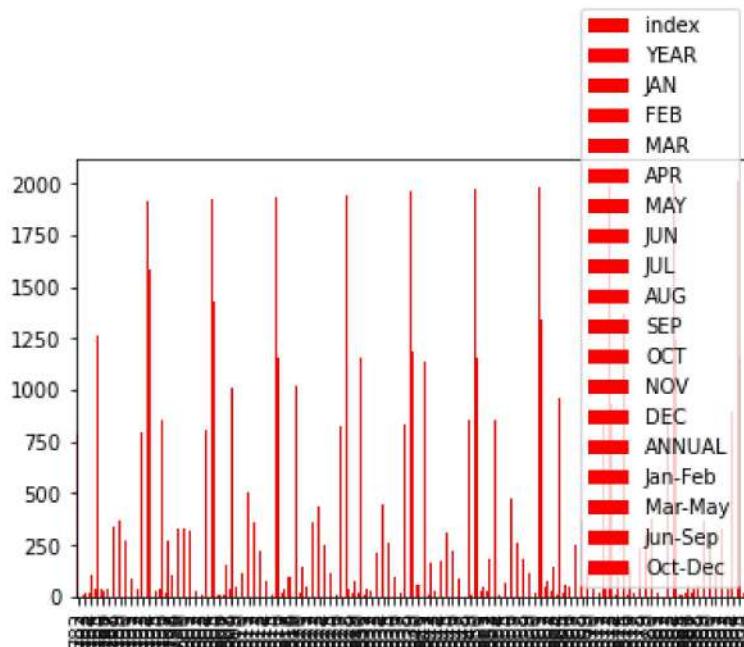
```
In [124]: JHARKHAND.plot.bar()
```

Out[124]: <AxesSubplot:>



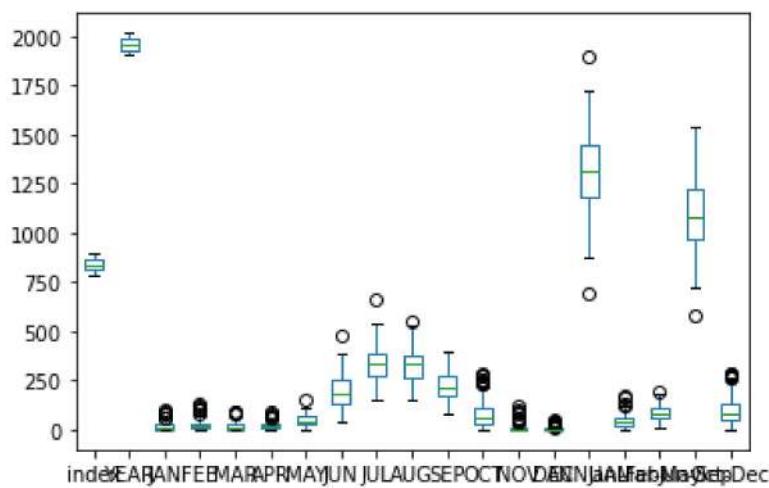
```
In [125]: JHARKHAND.plot.bar(color='r')
```

```
Out[125]: <AxesSubplot:>
```



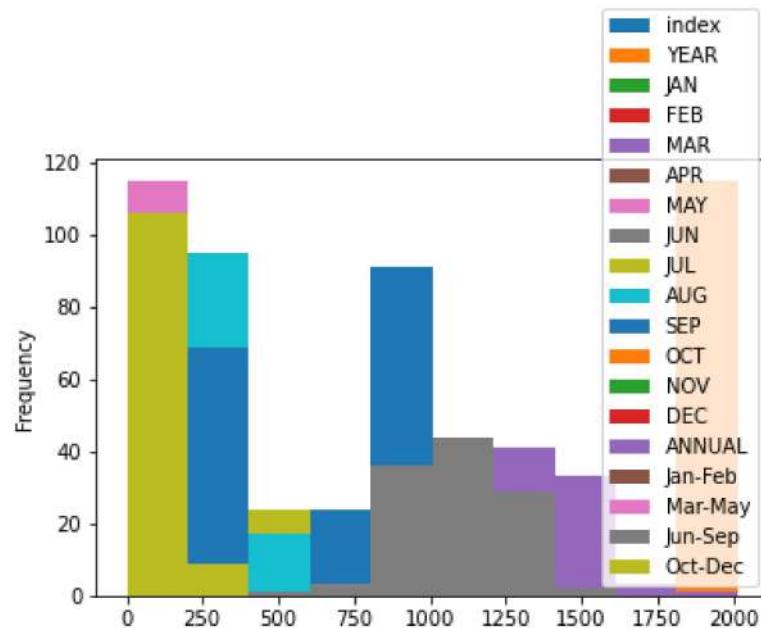
```
In [126]: JHARKHAND.plot.box()
```

```
Out[126]: <AxesSubplot:>
```



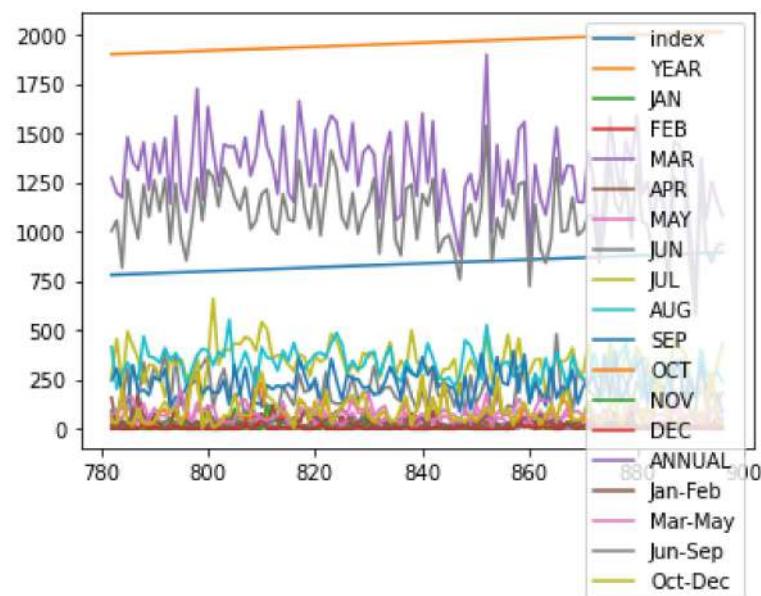
```
In [127]: JHARKHAND.plot.hist()
```

```
Out[127]: <AxesSubplot:ylabel='Frequency'>
```



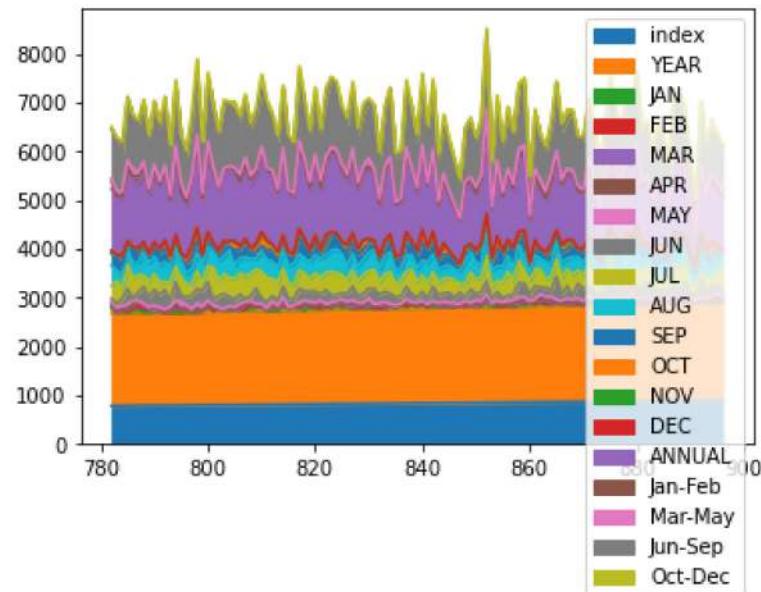
```
In [128]: JHARKHAND.plot.line()
```

```
Out[128]: <AxesSubplot:>
```



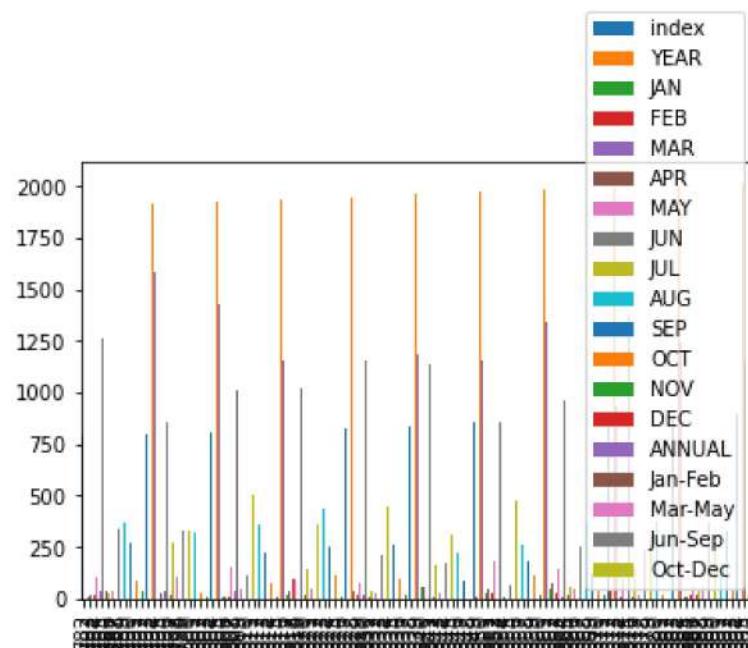
```
In [129]: JHARKHAND.plot.area()
```

```
Out[129]: <AxesSubplot:>
```



```
In [130]: JHARKHAND.plot.bar()
```

```
Out[130]: <AxesSubplot:>
```



BIHAR

```
In [131]: BIHAR=sd[897:1012]  
BIHAR
```

Out[131]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
897	897	BIHAR	1901	51.8	19.6	11.9	1.1	65.6	66.3	245.9	319.4	155.1	8.
898	898	BIHAR	1902	4.6	0.7	24.3	17.3	66.3	118.2	361.0	225.5	358.7	28.
899	899	BIHAR	1903	5.3	4.7	2.0	4.7	28.2	192.9	115.0	342.6	173.9	147.
900	900	BIHAR	1904	6.3	1.7	3.5	5.3	118.7	191.6	394.4	351.3	84.4	98.
901	901	BIHAR	1905	16.0	30.1	32.6	21.4	77.5	50.5	409.1	495.3	353.9	11.
...
1007	1007	BIHAR	2011	4.2	7.7	9.2	23.9	74.5	211.0	241.1	278.7	234.1	10.
1008	1008	BIHAR	2012	18.1	2.7	7.3	20.4	18.8	96.2	354.0	240.4	233.8	34.
1009	1009	BIHAR	2013	5.1	22.6	0.6	32.3	89.5	183.3	182.0	213.6	143.3	197.
1010	1010	BIHAR	2014	17.0	33.5	8.4	0.7	103.9	115.2	265.4	307.6	160.3	47.
1011	1011	BIHAR	2015	12.8	1.8	27.2	38.7	39.5	122.1	231.5	287.0	101.7	10.

115 rows × 20 columns

In [132]: BIHAR.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 897 to 1011
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [133]: BIHAR.describe()

Out[133]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	954.000000	1958.000000	13.386087	14.393913	10.124348	16.918261	53.081739	174
std	33.341666	33.341666	14.791960	15.075036	11.695340	15.978278	27.941714	76
min	897.000000	1901.000000	0.000000	0.000000	0.000000	0.100000	1.300000	48
25%	925.500000	1929.500000	2.350000	2.750000	1.800000	5.250000	31.550000	117
50%	954.000000	1958.000000	9.400000	8.400000	6.500000	12.600000	46.200000	165
75%	982.500000	1986.500000	18.700000	21.400000	12.850000	24.500000	76.200000	211
max	1011.000000	2015.000000	81.200000	66.300000	65.500000	91.400000	118.700000	446



```
In [134]: BIHAR.columns
```

```
Out[134]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [135]: BIHAR.dropna()
```

```
Out[135]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
897	897	BIHAR	1901	51.8	19.6	11.9	1.1	65.6	66.3	245.9	319.4	155.1	8.
898	898	BIHAR	1902	4.6	0.7	24.3	17.3	66.3	118.2	361.0	225.5	358.7	28.
899	899	BIHAR	1903	5.3	4.7	2.0	4.7	28.2	192.9	115.0	342.6	173.9	147.
900	900	BIHAR	1904	6.3	1.7	3.5	5.3	118.7	191.6	394.4	351.3	84.4	98.
901	901	BIHAR	1905	16.0	30.1	32.6	21.4	77.5	50.5	409.1	495.3	353.9	11.
...
1007	1007	BIHAR	2011	4.2	7.7	9.2	23.9	74.5	211.0	241.1	278.7	234.1	10.
1008	1008	BIHAR	2012	18.1	2.7	7.3	20.4	18.8	96.2	354.0	240.4	233.8	34.
1009	1009	BIHAR	2013	5.1	22.6	0.6	32.3	89.5	183.3	182.0	213.6	143.3	197.
1010	1010	BIHAR	2014	17.0	33.5	8.4	0.7	103.9	115.2	265.4	307.6	160.3	47.
1011	1011	BIHAR	2015	12.8	1.8	27.2	38.7	39.5	122.1	231.5	287.0	101.7	10.

115 rows × 20 columns

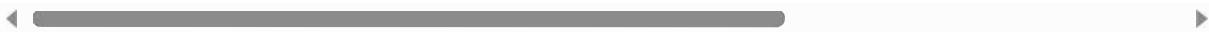


```
In [136]: BIHAR.fillna(356)
```

```
Out[136]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
897	897	BIHAR	1901	51.8	19.6	11.9	1.1	65.6	66.3	245.9	319.4	155.1	8.
898	898	BIHAR	1902	4.6	0.7	24.3	17.3	66.3	118.2	361.0	225.5	358.7	28.
899	899	BIHAR	1903	5.3	4.7	2.0	4.7	28.2	192.9	115.0	342.6	173.9	147.
900	900	BIHAR	1904	6.3	1.7	3.5	5.3	118.7	191.6	394.4	351.3	84.4	98.
901	901	BIHAR	1905	16.0	30.1	32.6	21.4	77.5	50.5	409.1	495.3	353.9	11.
...
1007	1007	BIHAR	2011	4.2	7.7	9.2	23.9	74.5	211.0	241.1	278.7	234.1	10.
1008	1008	BIHAR	2012	18.1	2.7	7.3	20.4	18.8	96.2	354.0	240.4	233.8	34.
1009	1009	BIHAR	2013	5.1	22.6	0.6	32.3	89.5	183.3	182.0	213.6	143.3	197.
1010	1010	BIHAR	2014	17.0	33.5	8.4	0.7	103.9	115.2	265.4	307.6	160.3	47.
1011	1011	BIHAR	2015	12.8	1.8	27.2	38.7	39.5	122.1	231.5	287.0	101.7	10.

115 rows × 20 columns



```
In [137]: np.shape(BIHAR)
```

```
Out[137]: (115, 20)
```

```
In [138]: np.size(BIHAR)
```

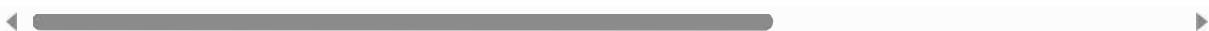
```
Out[138]: 2300
```

In [139]: BIHAR.isna()

Out[139]:

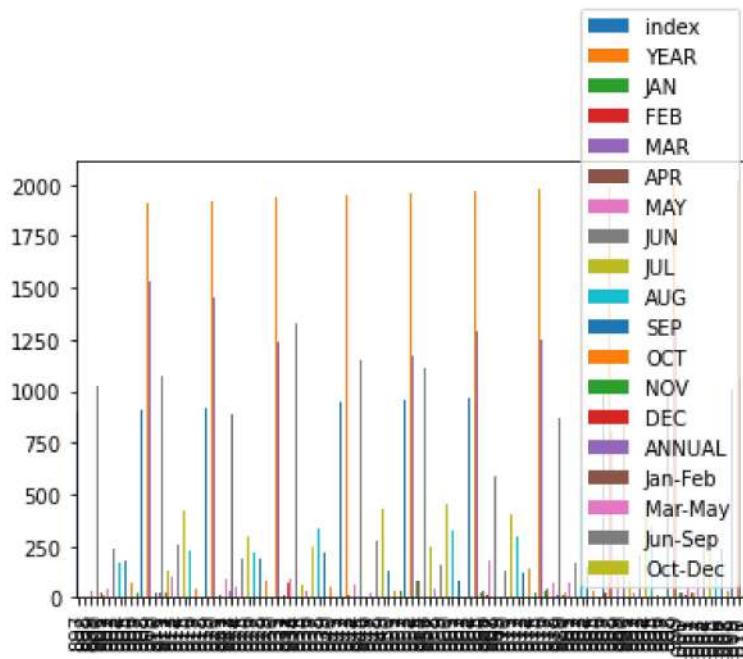
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
897	False		False										
898	False		False										
899	False		False										
900	False		False										
901	False		False										
...
1007	False		False										
1008	False		False										
1009	False		False										
1010	False		False										
1011	False		False										

115 rows × 20 columns



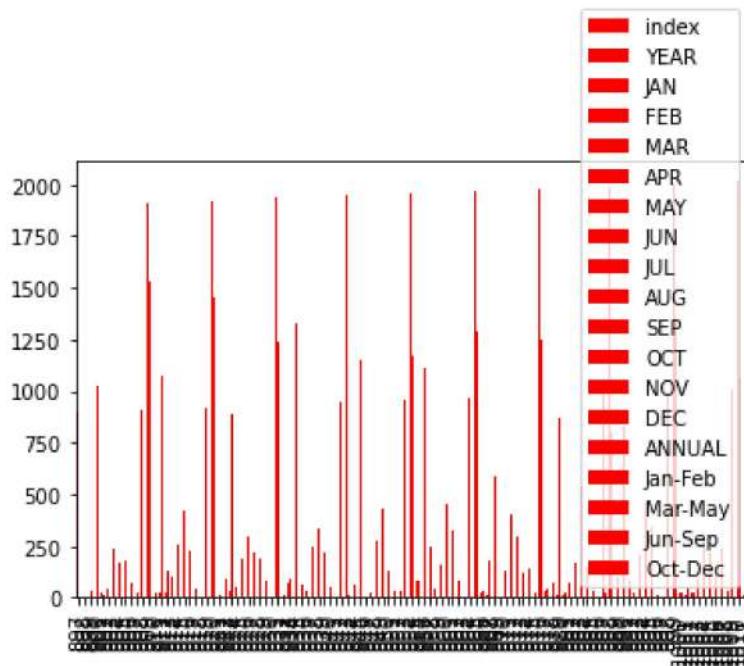
In [140]: BIHAR.plot.bar()

Out[140]: <AxesSubplot:>



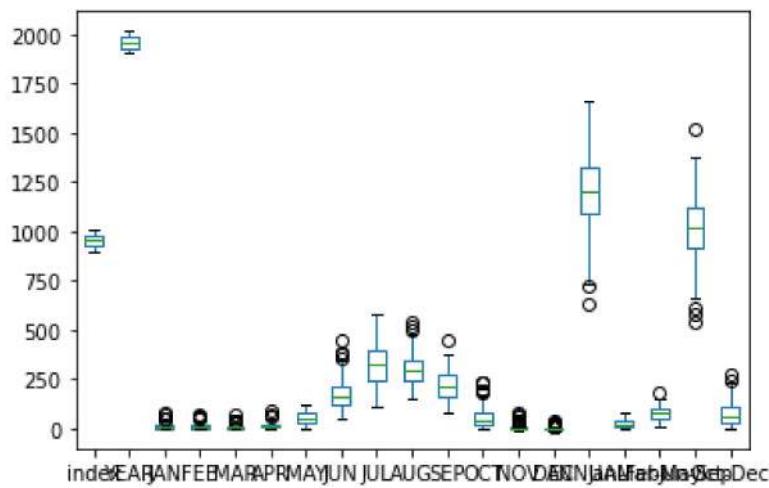
```
In [141]: BIHAR.plot.bar(color='r')
```

```
Out[141]: <AxesSubplot:>
```



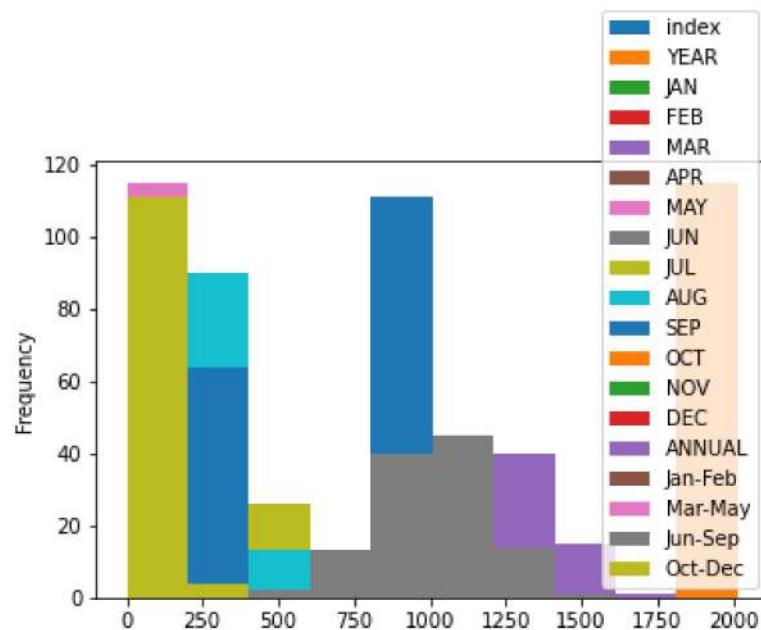
```
In [142]: BIHAR.plot.box()
```

```
Out[142]: <AxesSubplot:>
```



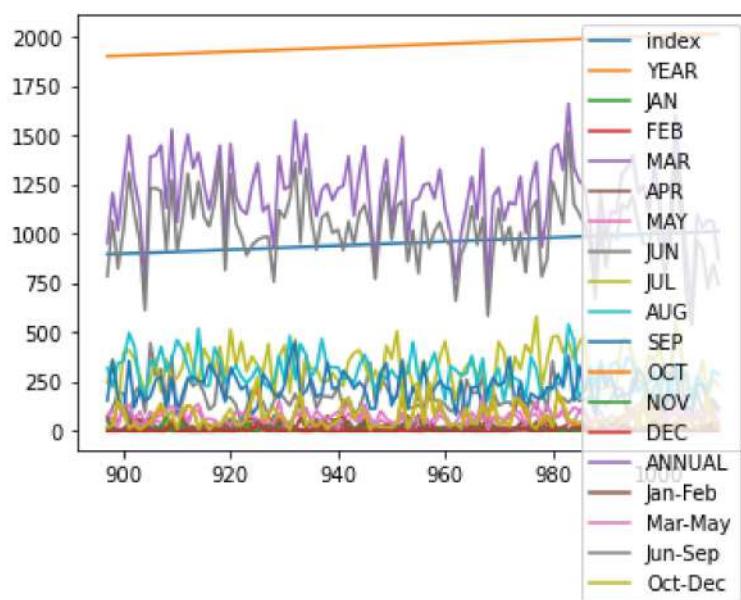
```
In [143]: BIHAR.plot.hist()
```

```
Out[143]: <AxesSubplot:ylabel='Frequency'>
```



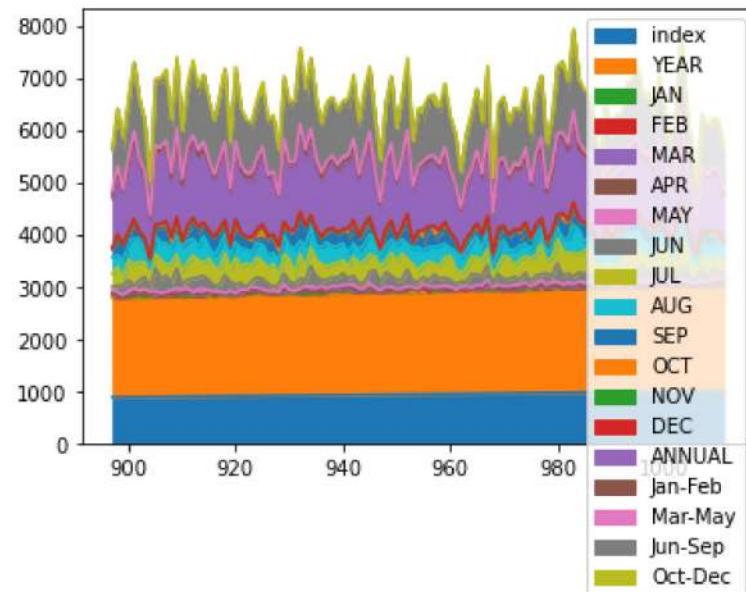
```
In [144]: BIHAR.plot.line()
```

```
Out[144]: <AxesSubplot:>
```



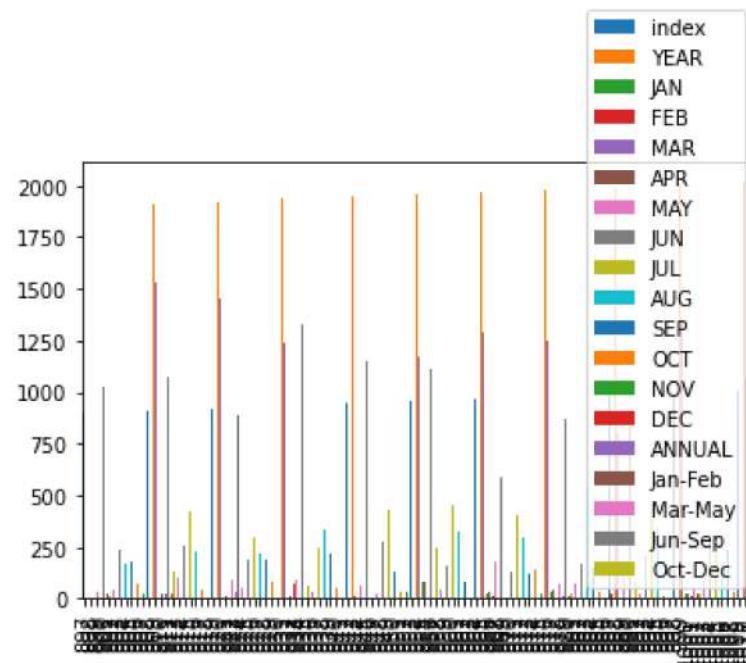
```
In [145]: BIHAR.plot.area()
```

```
Out[145]: <AxesSubplot:>
```



```
In [146]: BIHAR.plot.bar()
```

```
Out[146]: <AxesSubplot:>
```



EAST UTTAR PRADESH

In [147]: EAST=sd[1012:1127]
EAST

Out[147]:

	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	13.2
1014	1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.7
1015	1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.6
1016	1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.3
...
1122	1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.6
1123	1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.7
1124	1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.4
1125	1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.7
1126	1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.8

115 rows × 20 columns



In [148]: EAST.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 1012 to 1126
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [149]: EAST.describe()

Out[149]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000
mean	1069.000000	1958.000000	16.012174	15.873913	8.907826	6.430435	17.211304	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000	110.000000
std	33.341666	33.341666	14.659481	17.263607	11.906840	9.082731	14.095232	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000	64.000000
min	1012.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	1040.500000	1929.500000	3.450000	3.200000	0.700000	1.150000	6.550000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000	61.000000
50%	1069.000000	1958.000000	12.500000	8.800000	3.400000	3.800000	14.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000	99.000000
75%	1097.500000	1986.500000	24.400000	24.150000	12.050000	8.550000	25.900000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000	146.000000
max	1126.000000	2015.000000	62.600000	84.300000	63.700000	66.600000	68.700000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000	309.000000



```
In [150]: EAST.columns
```

```
Out[150]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [151]: EAST.dropna()
```

```
Out[151]:
```

		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	13.2	
1014	1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.7	
1015	1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.6	
1016	1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.3	
...	
1122	1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.6	
1123	1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.7	
1124	1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.4	
1125	1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.7	
1126	1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.8	

115 rows × 20 columns



```
In [152]: EAST.fillna(356)
```

Out[152]:

	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	13.2
1014	1014	EAST UTTAR PRADESH	1903	8.2	0.4	1.3	0.7	15.3	71.6	115.3	420.2	258.7	324.7
1015	1015	EAST UTTAR PRADESH	1904	7.3	1.5	8.3	0.4	28.7	148.0	359.4	328.8	95.0	50.6
1016	1016	EAST UTTAR PRADESH	1905	16.8	23.6	20.0	5.4	15.4	17.3	302.4	316.2	169.5	3.3
...
1122	1122	EAST UTTAR PRADESH	2011	1.0	2.7	1.6	2.9	32.2	163.8	197.9	232.1	146.4	0.6
1123	1123	EAST UTTAR PRADESH	2012	20.3	1.2	3.4	2.8	0.2	18.5	234.2	156.0	164.4	0.7
1124	1124	EAST UTTAR PRADESH	2013	6.1	59.6	2.7	8.7	1.1	309.7	230.0	246.1	78.2	97.4
1125	1125	EAST UTTAR PRADESH	2014	47.4	25.8	15.4	1.7	10.7	47.8	224.5	138.1	106.7	74.7
1126	1126	EAST UTTAR PRADESH	2015	30.0	4.1	48.2	23.2	8.6	95.3	179.0	175.8	21.9	11.8

115 rows × 20 columns



```
In [153]: np.shape(EAST)
```

Out[153]: (115, 20)

```
In [154]: np.size(EAST)
```

Out[154]: 2300

In [155]: EAST.isna()

Out[155]:

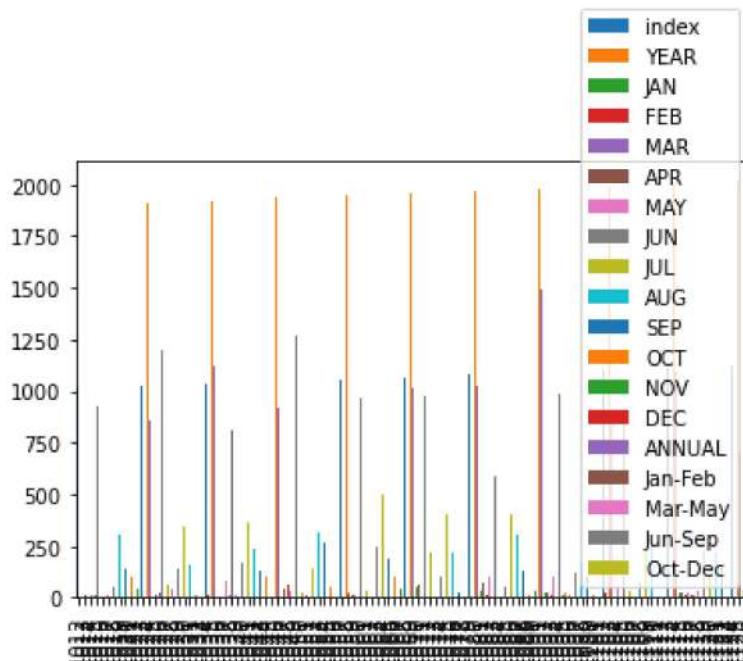
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1012	False		False										
1013	False		False										
1014	False		False										
1015	False		False										
1016	False		False										
...
1122	False		False										
1123	False		False										
1124	False		False										
1125	False		False										
1126	False		False										

115 rows × 20 columns



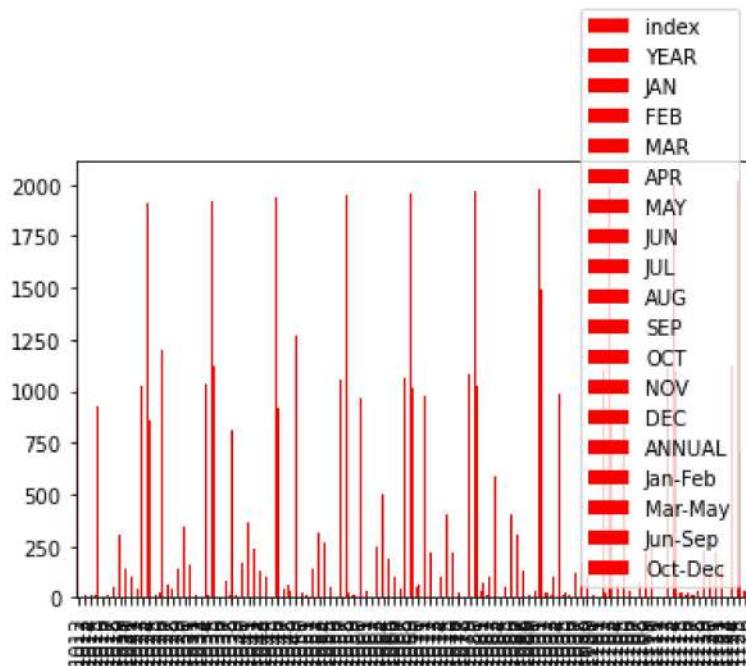
In [156]: EAST.plot.bar()

Out[156]: <AxesSubplot:>



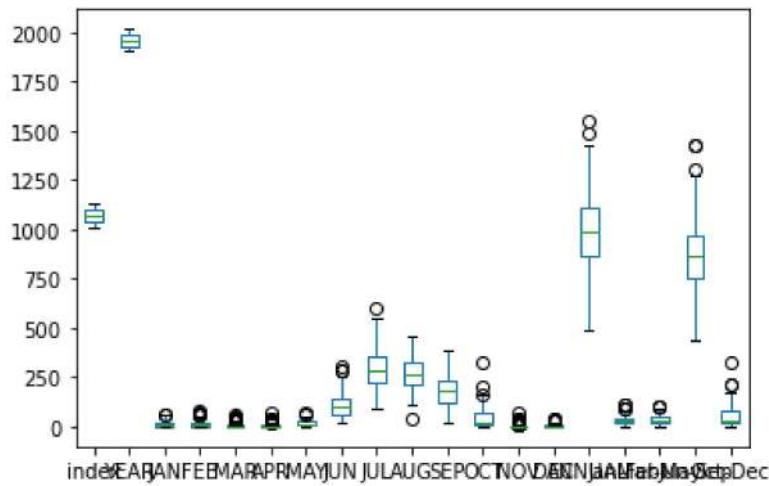
```
In [157]: EAST.plot.bar(color='r')
```

```
Out[157]: <AxesSubplot:>
```



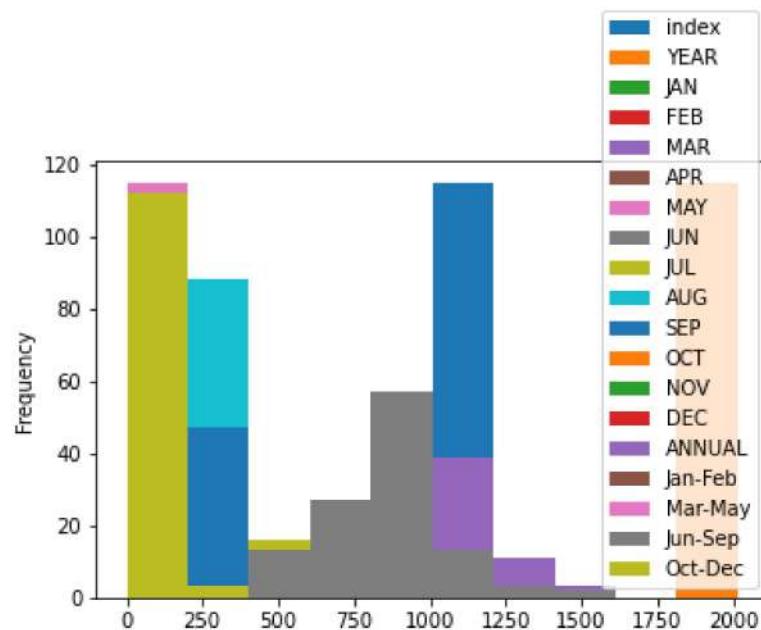
```
In [158]: EAST.plot.box()
```

```
Out[158]: <AxesSubplot:>
```



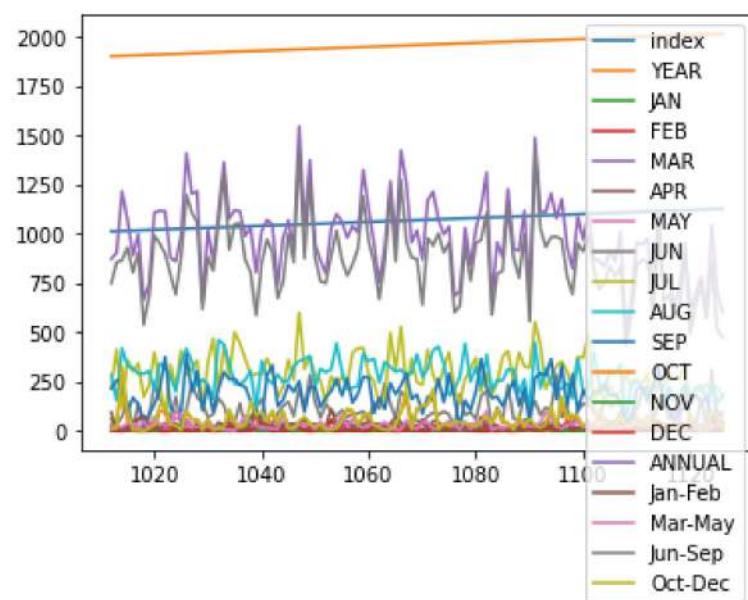
```
In [159]: EAST.plot.hist()
```

```
Out[159]: <AxesSubplot:ylabel='Frequency'>
```



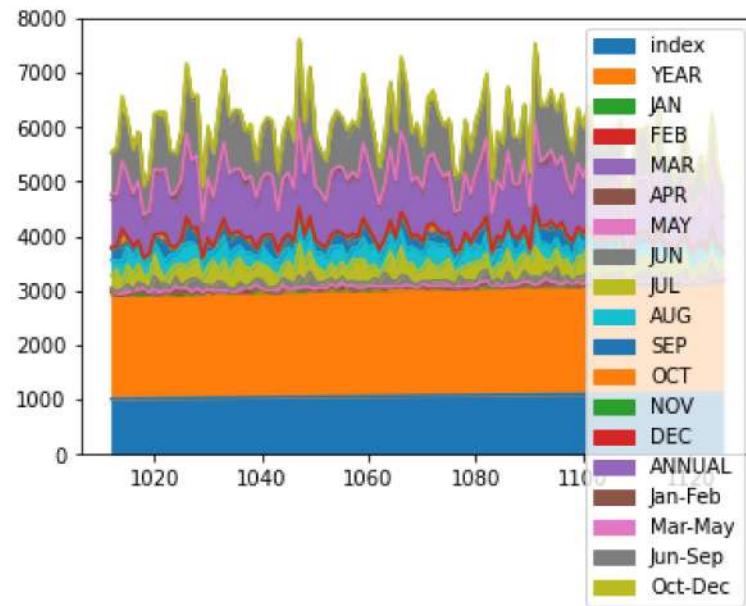
```
In [160]: EAST.plot.line()
```

```
Out[160]: <AxesSubplot:>
```



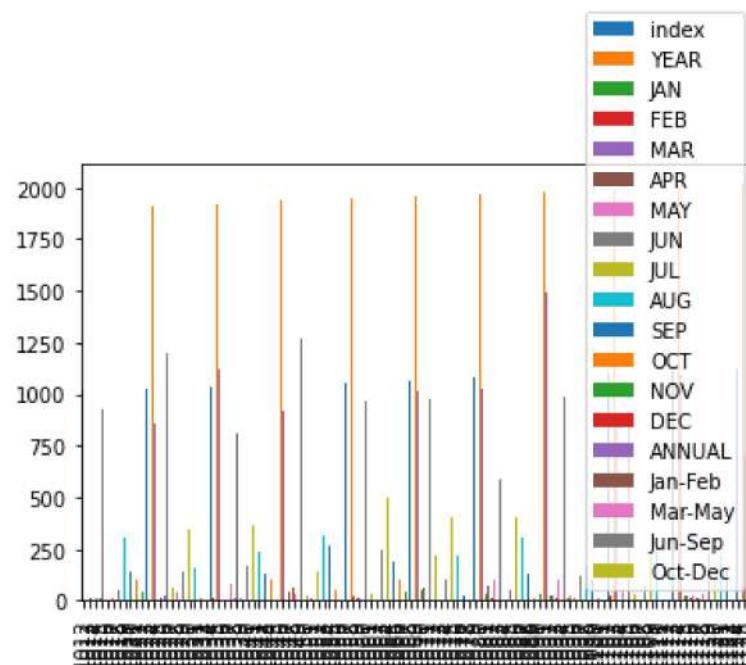
```
In [161]: EAST.plot.area()
```

```
Out[161]: <AxesSubplot:>
```



```
In [162]: EAST.plot.bar()
```

```
Out[162]: <AxesSubplot:>
```



WEST UTTAR PRADESH

```
In [163]: WAST=sd[1127:1242]  
WAST
```

Out[163]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1127	1127	WEST UTTAR PRADESH	1901	51.4	25.6	9.5	0.7	5.6	23.8	201.9	374.3	67.7	7.6
1128	1128	WEST UTTAR PRADESH	1902	4.6	4.6	0.6	4.8	7.2	54.5	325.9	180.6	143.1	9.6
1129	1129	WEST UTTAR PRADESH	1903	13.4	0.4	1.2	0.0	8.2	32.7	145.4	279.1	150.4	177.3
1130	1130	WEST UTTAR PRADESH	1904	6.3	2.0	29.7	0.4	24.8	68.5	358.8	311.1	97.1	2.7
1131	1131	WEST UTTAR PRADESH	1905	32.3	26.6	14.8	3.6	7.1	18.9	139.8	95.0	92.2	0.2
...
1237	1237	WEST UTTAR PRADESH	2011	2.1	10.4	3.9	2.8	29.6	175.9	215.9	232.3	101.7	0.7
1238	1238	WEST UTTAR PRADESH	2012	14.5	0.1	1.4	4.7	0.3	4.0	145.1	149.1	67.8	0.5
1239	1239	WEST UTTAR PRADESH	2013	20.4	69.5	3.5	1.6	2.1	190.6	233.9	287.1	52.2	61.2
1240	1240	WEST UTTAR PRADESH	2014	48.3	29.4	22.6	5.3	11.0	22.0	151.6	81.0	84.7	14.6
1241	1241	WEST UTTAR PRADESH	2015	31.6	7.2	66.8	21.0	8.1	72.0	194.2	143.5	26.5	6.9

115 rows × 20 columns



In [164]: WAST.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 1127 to 1241
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [165]: WAST.describe()

Out[165]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115
mean	1184.000000	1958.000000	17.666087	17.893913	11.461739	6.253043	12.306087	77
std	33.341666	33.341666	15.791531	19.972785	14.286434	10.015552	11.528510	55
min	1127.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3
25%	1155.500000	1929.500000	4.100000	3.450000	1.700000	0.750000	3.750000	39
50%	1184.000000	1958.000000	14.200000	10.400000	5.700000	3.100000	8.100000	67
75%	1212.500000	1986.500000	28.100000	25.600000	18.350000	6.750000	18.300000	96
max	1241.000000	2015.000000	68.600000	89.900000	66.800000	69.000000	52.000000	291



```
In [166]: WAST.columns
```

```
Out[166]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [167]: WAST.dropna()
```

```
Out[167]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1127	1127	WEST UTTAR PRADESH	1901	51.4	25.6	9.5	0.7	5.6	23.8	201.9	374.3	67.7	7.6
1128	1128	WEST UTTAR PRADESH	1902	4.6	4.6	0.6	4.8	7.2	54.5	325.9	180.6	143.1	9.6
1129	1129	WEST UTTAR PRADESH	1903	13.4	0.4	1.2	0.0	8.2	32.7	145.4	279.1	150.4	177.3
1130	1130	WEST UTTAR PRADESH	1904	6.3	2.0	29.7	0.4	24.8	68.5	358.8	311.1	97.1	2.7
1131	1131	WEST UTTAR PRADESH	1905	32.3	26.6	14.8	3.6	7.1	18.9	139.8	95.0	92.2	0.2
...
1237	1237	WEST UTTAR PRADESH	2011	2.1	10.4	3.9	2.8	29.6	175.9	215.9	232.3	101.7	0.7
1238	1238	WEST UTTAR PRADESH	2012	14.5	0.1	1.4	4.7	0.3	4.0	145.1	149.1	67.8	0.5
1239	1239	WEST UTTAR PRADESH	2013	20.4	69.5	3.5	1.6	2.1	190.6	233.9	287.1	52.2	61.2
1240	1240	WEST UTTAR PRADESH	2014	48.3	29.4	22.6	5.3	11.0	22.0	151.6	81.0	84.7	14.6
1241	1241	WEST UTTAR PRADESH	2015	31.6	7.2	66.8	21.0	8.1	72.0	194.2	143.5	26.5	6.9

115 rows × 20 columns



```
In [168]: WAST.fillna(356)
```

```
Out[168]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1127	1127	WEST UTTAR PRADESH	1901	51.4	25.6	9.5	0.7	5.6	23.8	201.9	374.3	67.7	7.6
1128	1128	WEST UTTAR PRADESH	1902	4.6	4.6	0.6	4.8	7.2	54.5	325.9	180.6	143.1	9.6
1129	1129	WEST UTTAR PRADESH	1903	13.4	0.4	1.2	0.0	8.2	32.7	145.4	279.1	150.4	177.3
1130	1130	WEST UTTAR PRADESH	1904	6.3	2.0	29.7	0.4	24.8	68.5	358.8	311.1	97.1	2.7
1131	1131	WEST UTTAR PRADESH	1905	32.3	26.6	14.8	3.6	7.1	18.9	139.8	95.0	92.2	0.2
...
1237	1237	WEST UTTAR PRADESH	2011	2.1	10.4	3.9	2.8	29.6	175.9	215.9	232.3	101.7	0.7
1238	1238	WEST UTTAR PRADESH	2012	14.5	0.1	1.4	4.7	0.3	4.0	145.1	149.1	67.8	0.5
1239	1239	WEST UTTAR PRADESH	2013	20.4	69.5	3.5	1.6	2.1	190.6	233.9	287.1	52.2	61.2
1240	1240	WEST UTTAR PRADESH	2014	48.3	29.4	22.6	5.3	11.0	22.0	151.6	81.0	84.7	14.6
1241	1241	WEST UTTAR PRADESH	2015	31.6	7.2	66.8	21.0	8.1	72.0	194.2	143.5	26.5	6.9

115 rows × 20 columns



```
In [169]: np.shape(WAST)
```

```
Out[169]: (115, 20)
```

```
In [170]: np.size(WAST)
```

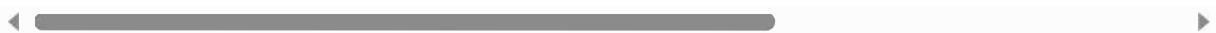
```
Out[170]: 2300
```

In [171]: WAST.isna()

Out[171]:

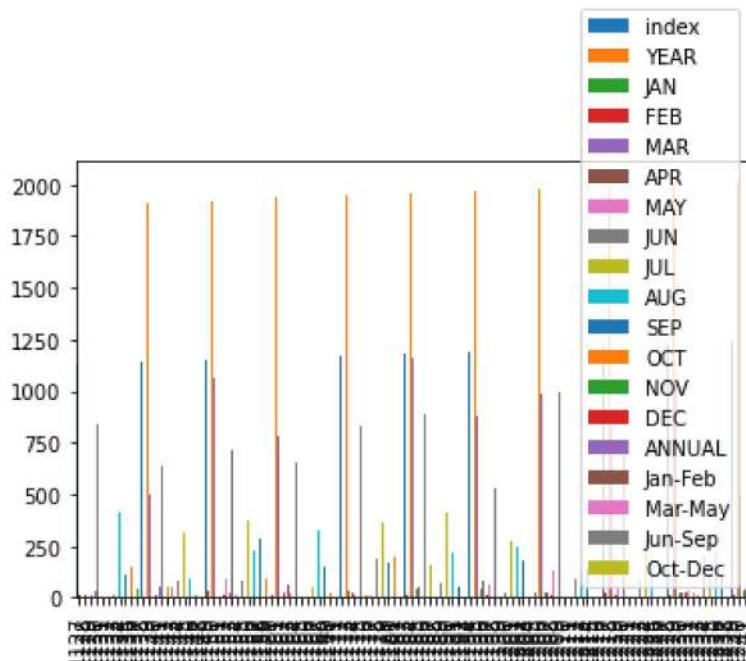
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1127	False		False										
1128	False		False										
1129	False		False										
1130	False		False										
1131	False		False										
...
1237	False		False										
1238	False		False										
1239	False		False										
1240	False		False										
1241	False		False										

115 rows × 20 columns



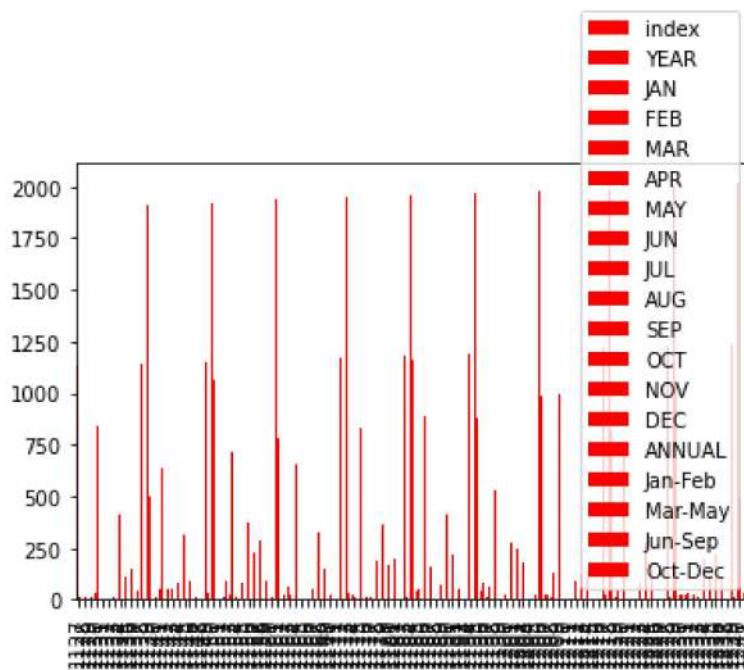
In [172]: WAST.plot.bar()

Out[172]: <AxesSubplot:>



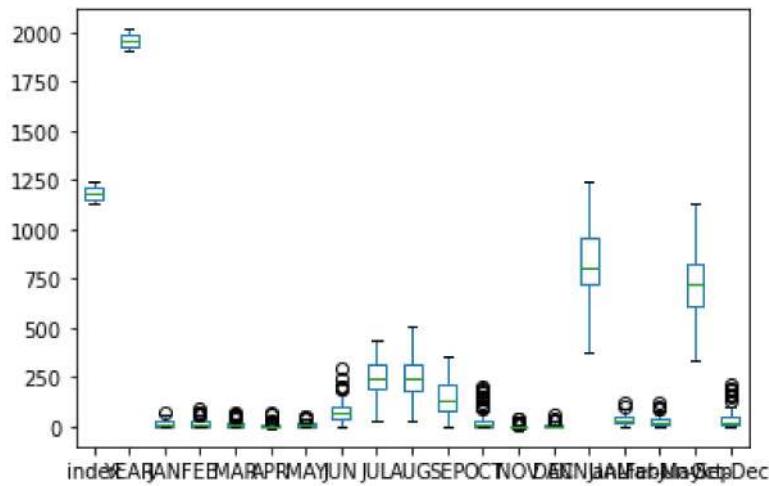
```
In [173]: WAST.plot.bar(color='r')
```

```
Out[173]: <AxesSubplot:>
```



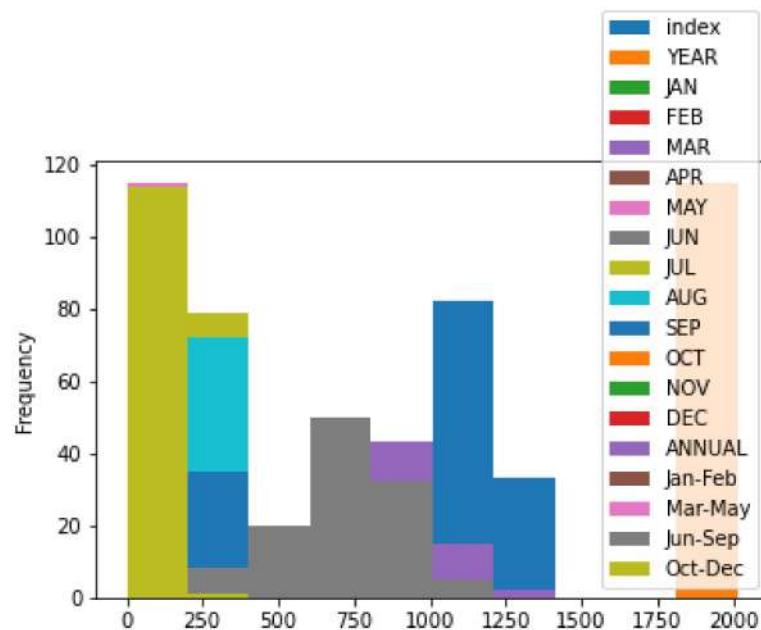
```
In [174]: WAST.plot.box()
```

```
Out[174]: <AxesSubplot:>
```



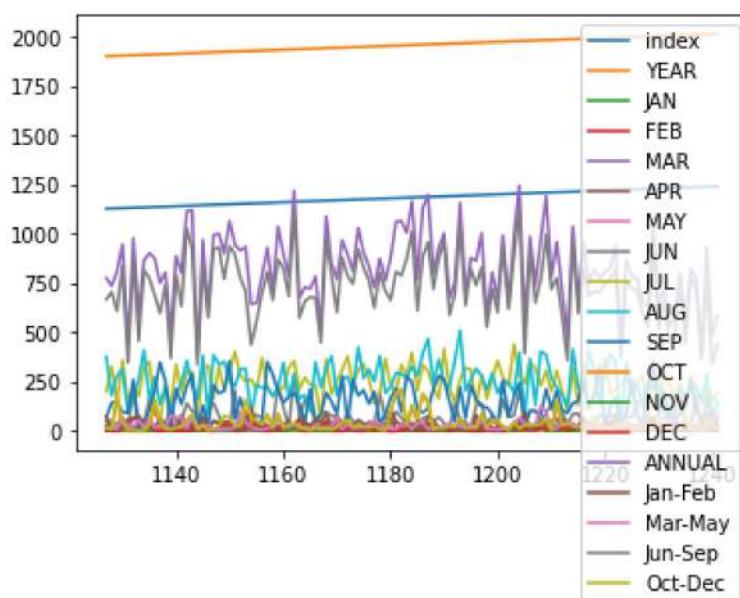
```
In [175]: WAST.plot.hist()
```

```
Out[175]: <AxesSubplot:ylabel='Frequency'>
```



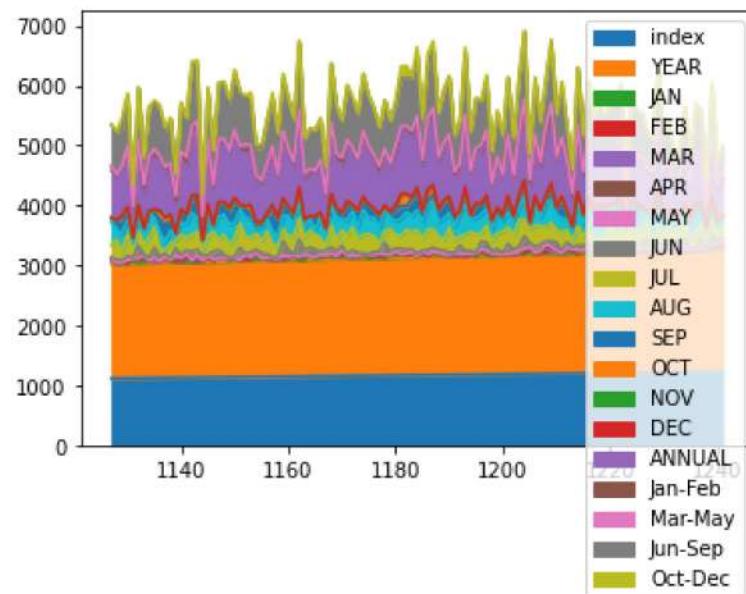
```
In [176]: WAST.plot.line()
```

```
Out[176]: <AxesSubplot:>
```



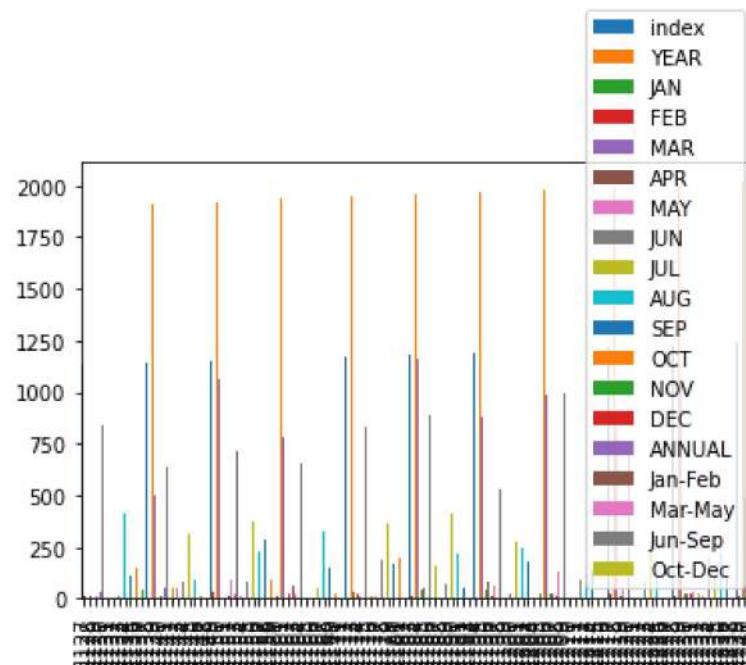
```
In [177]: WAST.plot.area()
```

```
Out[177]: <AxesSubplot:>
```



```
In [178]: WAST.plot.bar()
```

```
Out[178]: <AxesSubplot:>
```



UTTARAKHAND

In [179]: UTTARAKHAND=sd[1244:1357]
UTTARAKHAND

Out[179]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	111.0	111.0	111.0
1245	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	111.0	111.0	111.0
1246	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	111.0	111.0	111.0
1247	1247	UTTARAKHAND	1906	26.1	162.0	36.8	10.1	44.6	195.6	363.9	440.9	232.2	111.0	111.0	111.0
1248	1248	UTTARAKHAND	1907	49.4	131.6	144.4	41.7	57.6	74.8	342.3	323.8	28.2	111.0	111.0	111.0
...
1352	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	111.0	111.0	111.0
1353	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	111.0	111.0	111.0
1354	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	111.0	111.0	111.0
1355	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	111.0	111.0	111.0
1356	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	111.0	111.0	111.0

113 rows × 20 columns



In [180]: UTTARAKHAND.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 1244 to 1356
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [181]: UTTARAKHAND.describe()

Out[181]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	1300.000000	1959.000000	53.559292	63.704425	57.430088	35.172566	55.318584
std	32.76431	32.76431	40.219180	44.181413	42.796003	24.022416	36.918360
min	1244.000000	1903.000000	0.500000	0.000000	0.000000	1.100000	3.600000
25%	1272.000000	1931.000000	21.700000	28.000000	22.300000	18.400000	27.600000
50%	1300.000000	1959.000000	49.700000	60.100000	47.700000	30.700000	49.300000
75%	1328.000000	1987.000000	75.800000	89.600000	81.300000	51.200000	71.700000
max	1356.000000	2015.000000	211.400000	188.300000	190.300000	132.900000	270.200000

```
In [182]: UTTARAKHAND.columns
```

```
Out[182]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [183]: UTTARAKHAND.dropna()
```

```
Out[183]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	
1245	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	
1246	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	
1247	1247	UTTARAKHAND	1906	26.1	162.0	36.8	10.1	44.6	195.6	363.9	440.9	232.2	
1248	1248	UTTARAKHAND	1907	49.4	131.6	144.4	41.7	57.6	74.8	342.3	323.8	28.2	
...	
1352	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	
1353	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	
1354	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	
1355	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	
1356	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	

113 rows × 20 columns

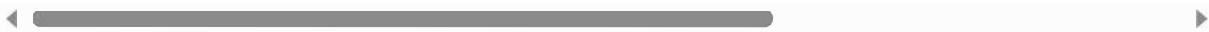


```
In [184]: UTTARAKHAND.fillna(356)
```

```
Out[184]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1244	1244	UTTARAKHAND	1903	68.0	7.9	87.6	10.3	37.5	83.0	251.6	442.7	249.3	113.0	10.3	10.3
1245	1245	UTTARAKHAND	1904	40.0	5.2	78.3	13.6	61.1	180.1	449.6	417.2	174.1	113.0	10.3	10.3
1246	1246	UTTARAKHAND	1905	115.4	80.7	99.8	26.1	70.3	111.5	299.9	349.5	129.5	113.0	10.3	10.3
1247	1247	UTTARAKHAND	1906	26.1	162.0	36.8	10.1	44.6	195.6	363.9	440.9	232.2	113.0	10.3	10.3
1248	1248	UTTARAKHAND	1907	49.4	131.6	144.4	41.7	57.6	74.8	342.3	323.8	28.2	113.0	10.3	10.3
...
1352	1352	UTTARAKHAND	2011	30.9	65.2	18.0	30.9	84.2	223.1	433.3	523.7	148.4	113.0	10.3	10.3
1353	1353	UTTARAKHAND	2012	38.8	11.9	28.1	39.2	9.1	46.0	387.1	419.5	220.6	113.0	10.3	10.3
1354	1354	UTTARAKHAND	2013	73.0	188.3	22.0	24.7	18.2	488.9	413.4	359.4	111.3	113.0	10.3	10.3
1355	1355	UTTARAKHAND	2014	45.9	99.9	68.4	37.6	52.9	62.9	462.7	264.2	107.9	113.0	10.3	10.3
1356	1356	UTTARAKHAND	2015	54.5	62.6	127.3	57.3	38.0	186.6	337.0	305.3	52.6	113.0	10.3	10.3

113 rows × 20 columns



```
In [185]: np.shape(UTTARAKHAND)
```

```
Out[185]: (113, 20)
```

```
In [186]: np.size(UTTARAKHAND)
```

```
Out[186]: 2260
```

```
In [187]: UTTARAKHAND.isna()
```

Out[187]:

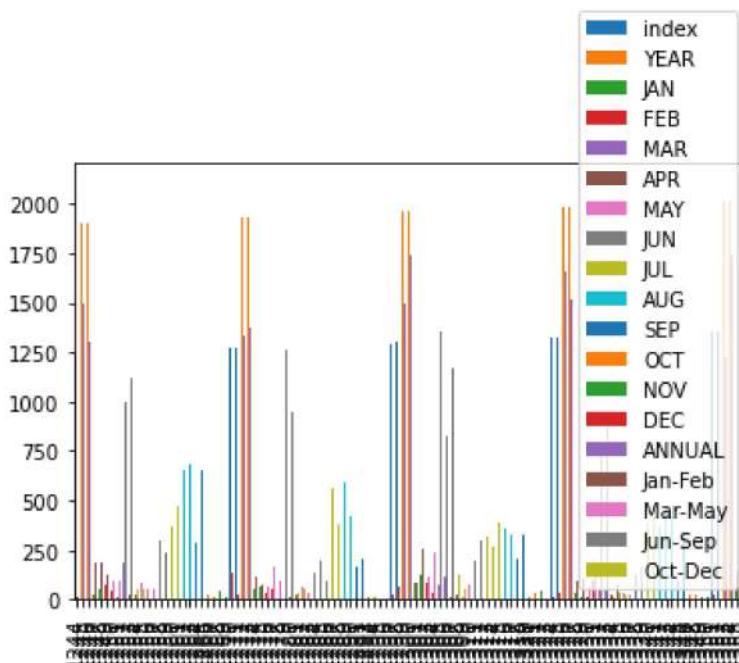
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1244	False		False										
1245	False		False										
1246	False		False										
1247	False		False										
1248	False		False										
...
1352	False		False										
1353	False		False										
1354	False		False										
1355	False		False										
1356	False		False										

113 rows × 20 columns



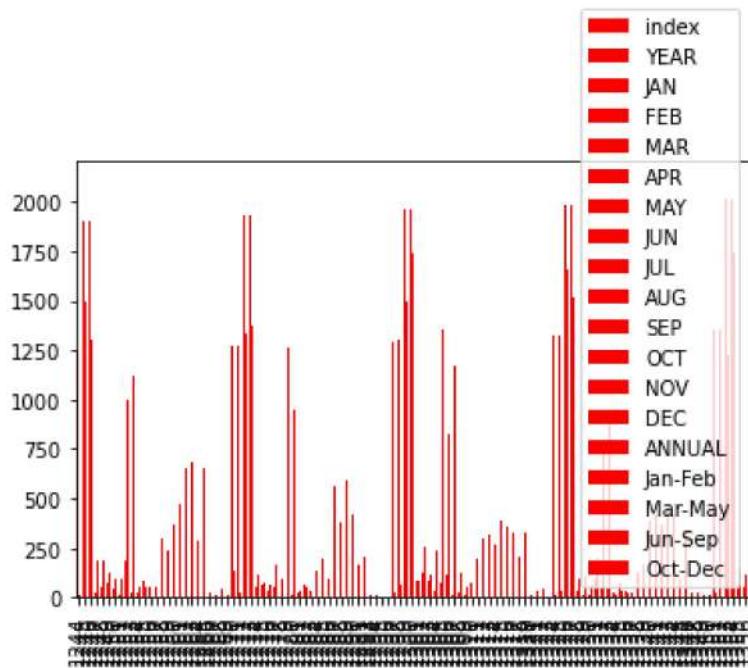
```
In [188]: UTTARAKHAND.plot.bar()
```

Out[188]: <AxesSubplot:>



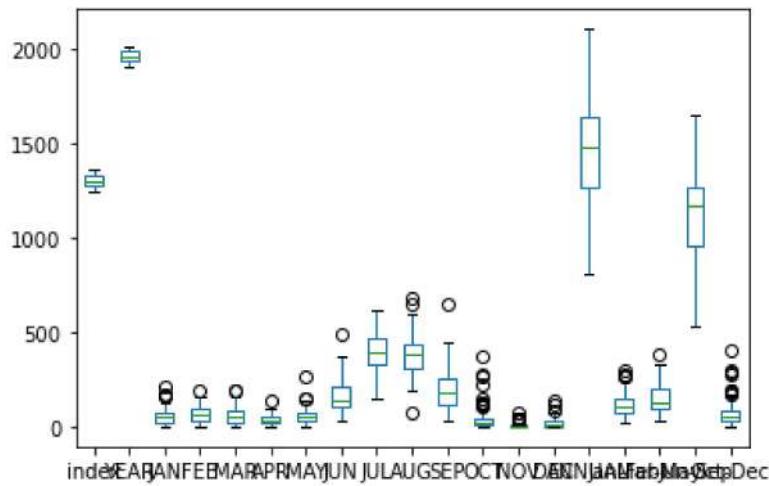
```
In [189]: UTTARAKHAND.plot.bar(color='r')
```

```
Out[189]: <AxesSubplot:>
```



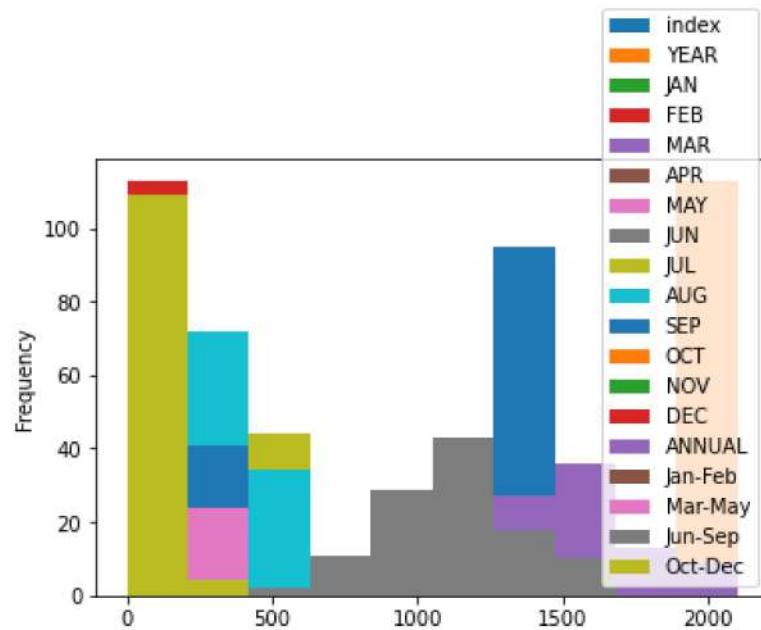
```
In [190]: UTTARAKHAND.plot.box()
```

```
Out[190]: <AxesSubplot:>
```



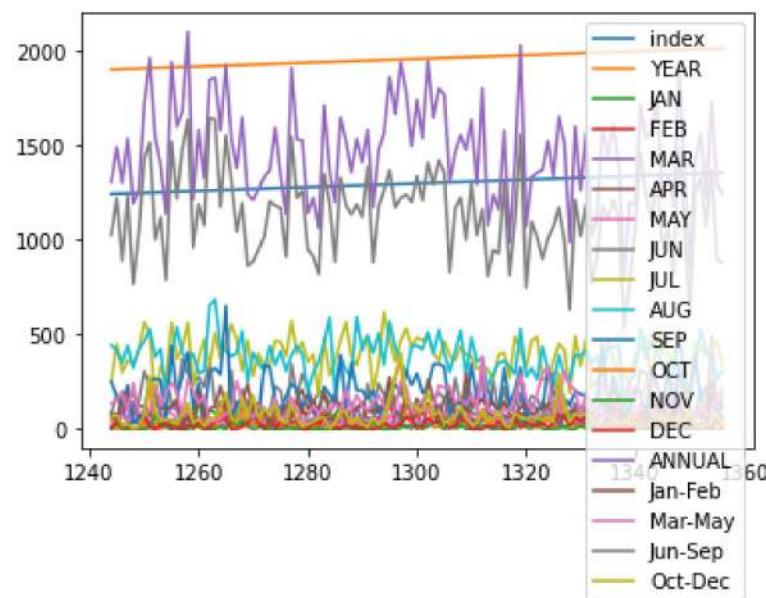
```
In [191]: UTTARAKHAND.plot.hist()
```

```
Out[191]: <AxesSubplot:ylabel='Frequency'>
```



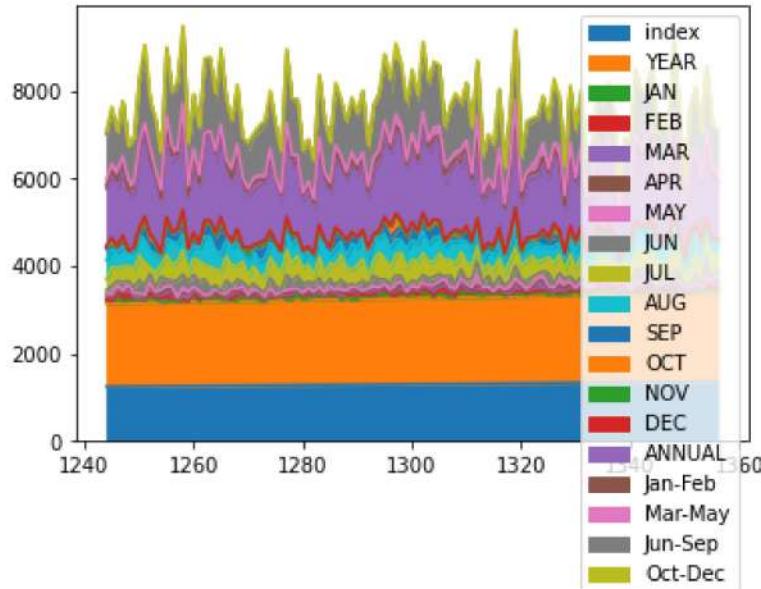
```
In [192]: UTTARAKHAND.plot.line()
```

```
Out[192]: <AxesSubplot:>
```



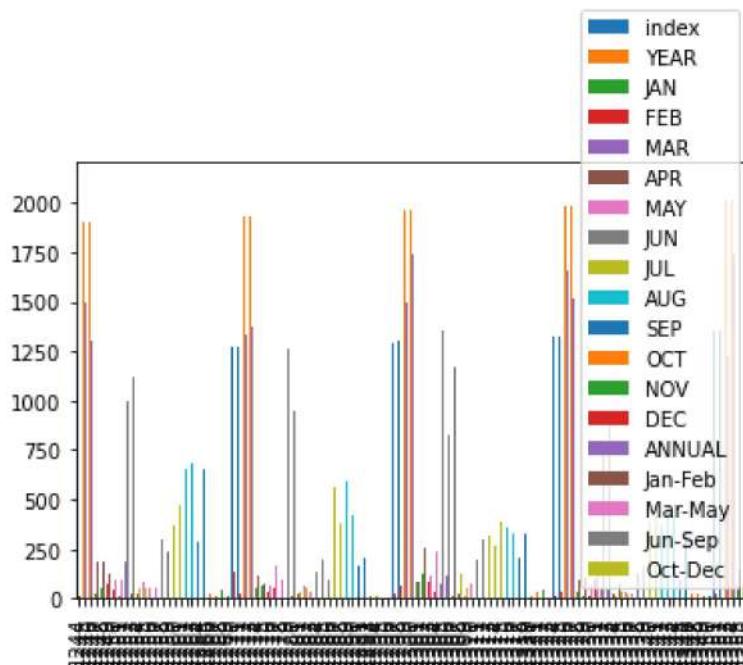
```
In [193]: UTTARAKHAND.plot.area()
```

```
Out[193]: <AxesSubplot:>
```



```
In [194]: UTTARAKHAND.plot.bar()
```

```
Out[194]: <AxesSubplot:>
```



HARYANA DELHI & CHANDIGARH

```
In [195]: HARYANA=sd[1359:1471]  
HARYANA
```

Out[195]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1359	1359	HARYANA DELHI & CHANDIGARH	1903	14.7	0.5	2.3	0.5	8.5	8.6	151.6	138.2	97.7	4.0
1360	1360	HARYANA DELHI & CHANDIGARH	1904	7.6	0.7	48.0	0.5	29.3	34.3	109.7	162.9	102.3	1.5
1361	1361	HARYANA DELHI & CHANDIGARH	1905	44.8	20.8	14.0	1.3	7.4	20.1	93.6	23.1	92.6	0.0
1362	1362	HARYANA DELHI & CHANDIGARH	1906	3.6	64.1	31.4	0.1	1.4	70.2	128.9	103.8	185.2	0.0
1363	1363	HARYANA DELHI & CHANDIGARH	1907	14.3	42.8	25.9	33.5	7.8	20.0	123.2	175.3	1.0	0.1
...
1466	1466	HARYANA DELHI & CHANDIGARH	2010	4.8	10.2	0.5	0.8	5.9	29.1	189.3	198.5	183.9	1.1
1467	1467	HARYANA DELHI & CHANDIGARH	2011	0.7	26.7	6.9	8.9	28.7	94.4	85.0	127.3	133.1	0.0
1468	1468	HARYANA DELHI & CHANDIGARH	2012	8.2	0.2	0.1	11.8	3.8	5.3	68.1	196.6	90.7	2.4
1469	1469	HARYANA DELHI & CHANDIGARH	2013	21.1	52.2	5.3	3.3	1.4	62.1	96.5	161.9	42.8	10.9
1470	1470	HARYANA DELHI & CHANDIGARH	2014	13.0	17.3	26.8	7.5	20.3	25.9	72.3	34.8	67.3	10.5

112 rows × 20 columns



In [196]: HARYANA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 112 entries, 1359 to 1470
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       112 non-null    int64  
 1   SUBDIVISION 112 non-null    object  
 2   YEAR        112 non-null    int64  
 3   JAN         112 non-null    float64 
 4   FEB         112 non-null    float64 
 5   MAR         112 non-null    float64 
 6   APR         112 non-null    float64 
 7   MAY         112 non-null    float64 
 8   JUN         112 non-null    float64 
 9   JUL         112 non-null    float64 
 10  AUG         112 non-null    float64 
 11  SEP         112 non-null    float64 
 12  OCT         112 non-null    float64 
 13  NOV         112 non-null    float64 
 14  DEC         112 non-null    float64 
 15  ANNUAL      112 non-null    float64 
 16  Jan-Feb     112 non-null    float64 
 17  Mar-May     112 non-null    float64 
 18  Jun-Sep     112 non-null    float64 
 19  Oct-Dec     112 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.6+ KB
```

In [197]: HARYANA.describe()

Out[197]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112
mean	1414.500000	1958.500000	16.915179	17.577679	12.516071	7.436607	14.661607	48
std	32.475632	32.475632	15.535940	19.021660	14.372682	12.737658	16.077387	34
min	1359.000000	1903.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2
25%	1386.750000	1930.750000	3.575000	2.275000	1.925000	0.800000	3.625000	24
50%	1414.500000	1958.500000	14.300000	12.300000	7.200000	2.750000	7.850000	42
75%	1442.250000	1986.250000	25.025000	27.825000	17.500000	8.225000	21.000000	66
max	1470.000000	2014.000000	66.500000	91.000000	70.700000	82.500000	72.900000	193



```
In [198]: HARYANA.columns
```

```
Out[198]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [199]: HARYANA.dropna()
```

```
Out[199]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1359	1359		HARYANA DELHI & CHANDIGARH	1903	14.7	0.5	2.3	0.5	8.5	8.6	151.6	138.2	97.7	4.0
1360	1360		HARYANA DELHI & CHANDIGARH	1904	7.6	0.7	48.0	0.5	29.3	34.3	109.7	162.9	102.3	1.5
1361	1361		HARYANA DELHI & CHANDIGARH	1905	44.8	20.8	14.0	1.3	7.4	20.1	93.6	23.1	92.6	0.0
1362	1362		HARYANA DELHI & CHANDIGARH	1906	3.6	64.1	31.4	0.1	1.4	70.2	128.9	103.8	185.2	0.0
1363	1363		HARYANA DELHI & CHANDIGARH	1907	14.3	42.8	25.9	33.5	7.8	20.0	123.2	175.3	1.0	0.1
...
1466	1466		HARYANA DELHI & CHANDIGARH	2010	4.8	10.2	0.5	0.8	5.9	29.1	189.3	198.5	183.9	1.1
1467	1467		HARYANA DELHI & CHANDIGARH	2011	0.7	26.7	6.9	8.9	28.7	94.4	85.0	127.3	133.1	0.0
1468	1468		HARYANA DELHI & CHANDIGARH	2012	8.2	0.2	0.1	11.8	3.8	5.3	68.1	196.6	90.7	2.4
1469	1469		HARYANA DELHI & CHANDIGARH	2013	21.1	52.2	5.3	3.3	1.4	62.1	96.5	161.9	42.8	10.9
1470	1470		HARYANA DELHI & CHANDIGARH	2014	13.0	17.3	26.8	7.5	20.3	25.9	72.3	34.8	67.3	10.5

112 rows × 20 columns



```
In [200]: HARYANA.fillna(356)
```

Out[200]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1359	1359	HARYANA DELHI & CHANDIGARH	1903	14.7	0.5	2.3	0.5	8.5	8.6	151.6	138.2	97.7	4.0
1360	1360	HARYANA DELHI & CHANDIGARH	1904	7.6	0.7	48.0	0.5	29.3	34.3	109.7	162.9	102.3	1.5
1361	1361	HARYANA DELHI & CHANDIGARH	1905	44.8	20.8	14.0	1.3	7.4	20.1	93.6	23.1	92.6	0.0
1362	1362	HARYANA DELHI & CHANDIGARH	1906	3.6	64.1	31.4	0.1	1.4	70.2	128.9	103.8	185.2	0.0
1363	1363	HARYANA DELHI & CHANDIGARH	1907	14.3	42.8	25.9	33.5	7.8	20.0	123.2	175.3	1.0	0.1
...
1466	1466	HARYANA DELHI & CHANDIGARH	2010	4.8	10.2	0.5	0.8	5.9	29.1	189.3	198.5	183.9	1.1
1467	1467	HARYANA DELHI & CHANDIGARH	2011	0.7	26.7	6.9	8.9	28.7	94.4	85.0	127.3	133.1	0.0
1468	1468	HARYANA DELHI & CHANDIGARH	2012	8.2	0.2	0.1	11.8	3.8	5.3	68.1	196.6	90.7	2.4
1469	1469	HARYANA DELHI & CHANDIGARH	2013	21.1	52.2	5.3	3.3	1.4	62.1	96.5	161.9	42.8	10.9
1470	1470	HARYANA DELHI & CHANDIGARH	2014	13.0	17.3	26.8	7.5	20.3	25.9	72.3	34.8	67.3	10.5

112 rows × 20 columns



```
In [201]: np.shape(HARYANA)
```

Out[201]: (112, 20)

```
In [202]: np.size(HARYANA)
```

Out[202]: 2240

In [203]: HARYANA.isna()

Out[203]:

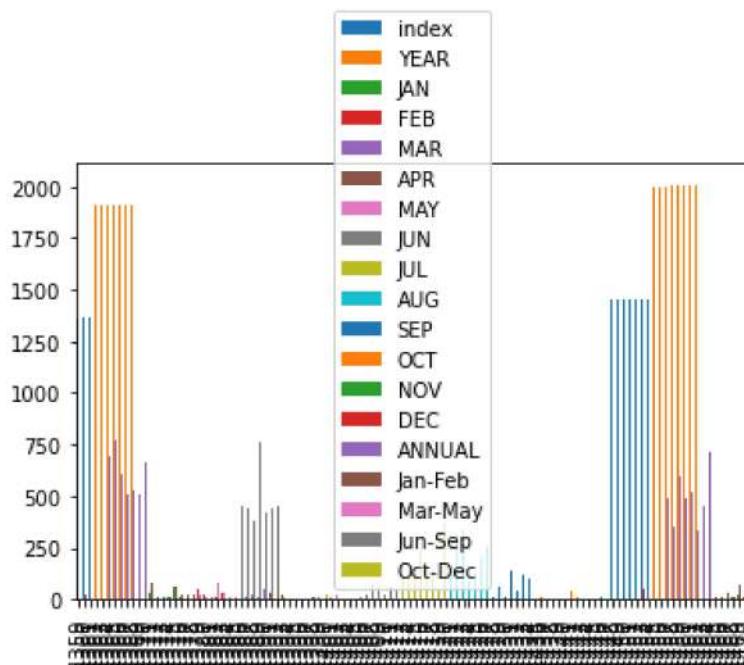
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1359	False		False										
1360	False		False										
1361	False		False										
1362	False		False										
1363	False		False										
...
1466	False		False										
1467	False		False										
1468	False		False										
1469	False		False										
1470	False		False										

112 rows × 20 columns

◀ ▶

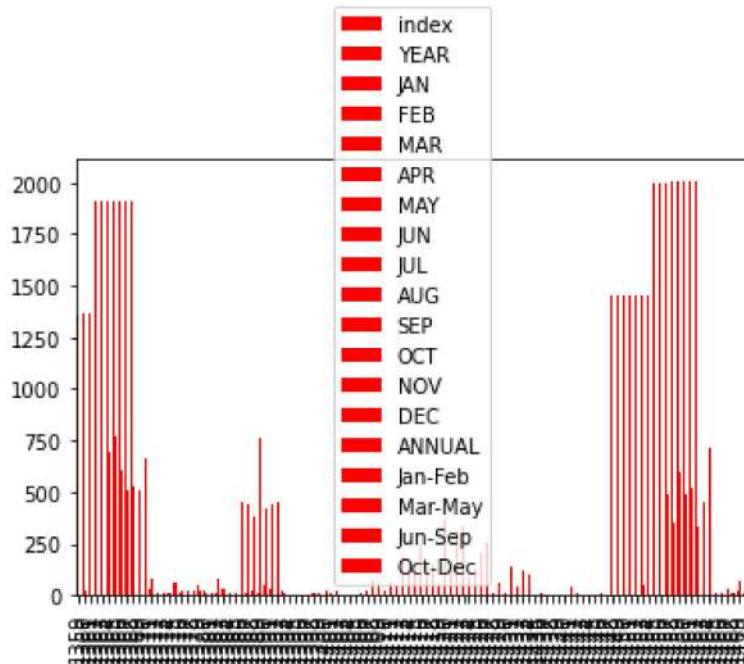
In [204]: HARYANA.plot.bar()

Out[204]: <AxesSubplot:>



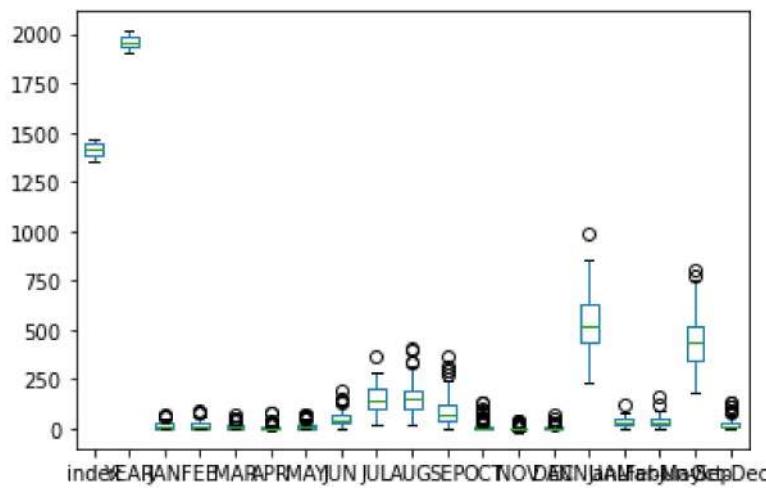
```
In [205]: HARYANA.plot.bar(color='r')
```

```
Out[205]: <AxesSubplot:>
```



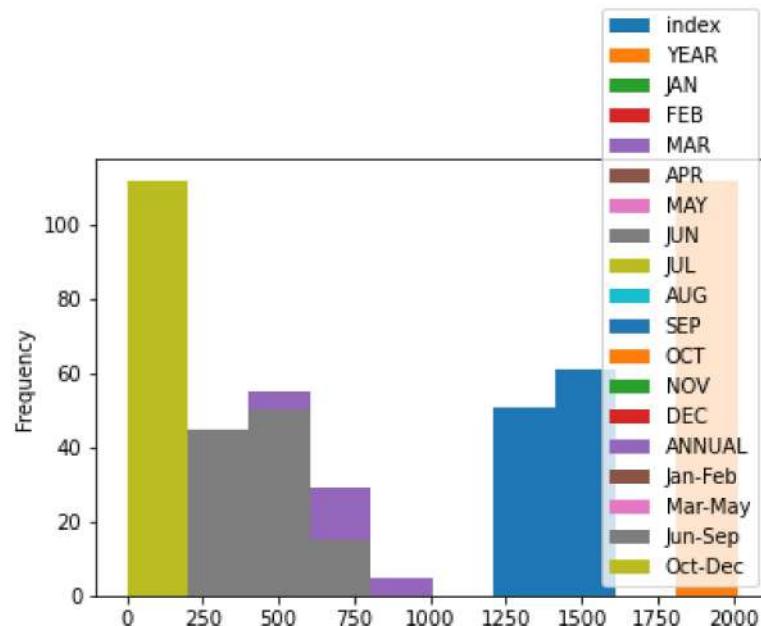
```
In [206]: HARYANA.plot.box()
```

```
Out[206]: <AxesSubplot:>
```



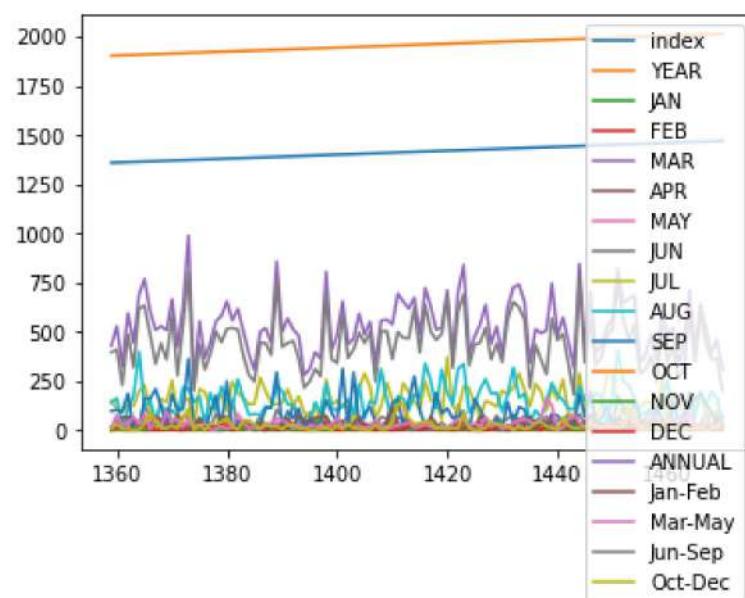
```
In [207]: HARYANA.plot.hist()
```

Out[207]: <AxesSubplot:ylabel='Frequency'>



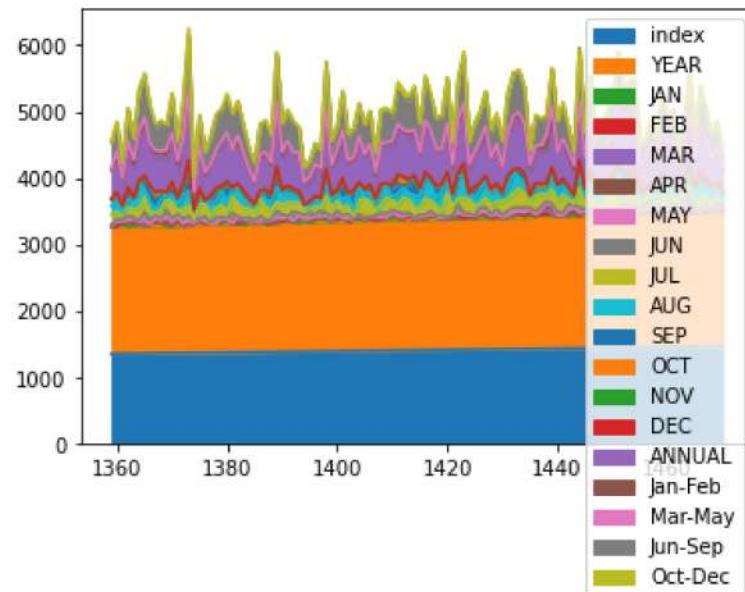
```
In [208]: HARYANA.plot.line()
```

Out[208]: <AxesSubplot:>



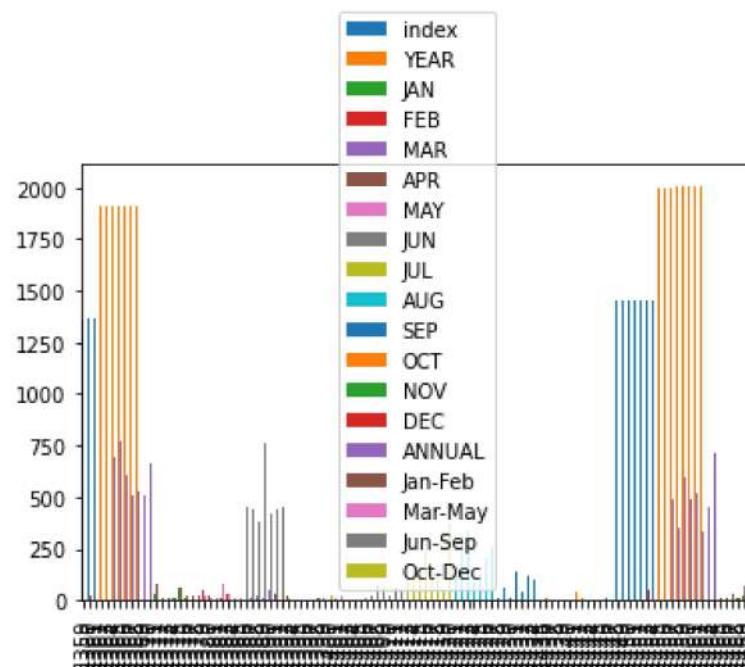
```
In [209]: HARYANA.plot.area()
```

```
Out[209]: <AxesSubplot:>
```



```
In [210]: HARYANA.plot.bar()
```

```
Out[210]: <AxesSubplot:>
```



PUNJAB

```
In [211]: PUNJAB=sd[1474:1587]  
PUNJAB
```

Out[211]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1474	1474	PUNJAB	1903	29.5	0.5	45.0	1.3	9.2	5.2	212.2	119.1	132.5	6.9
1475	1475	PUNJAB	1904	24.2	1.7	87.8	1.2	13.8	22.0	59.9	124.0	73.8	7.4
1476	1476	PUNJAB	1905	53.0	40.3	24.3	0.5	2.2	19.2	122.6	50.3	111.1	1.2
1477	1477	PUNJAB	1906	5.3	83.1	50.5	1.5	4.7	38.3	99.4	190.5	181.5	0.5
1478	1478	PUNJAB	1907	27.3	95.4	53.1	50.7	3.3	20.2	82.8	249.0	6.8	0.4
...
1582	1582	PUNJAB	2011	3.5	35.6	8.2	17.8	18.9	162.9	120.9	193.5	140.2	0.0
1583	1583	PUNJAB	2012	62.6	3.2	1.9	31.1	1.6	11.9	120.2	135.1	112.3	2.2
1584	1584	PUNJAB	2013	9.3	50.1	11.6	3.4	3.6	120.3	117.9	217.1	24.4	16.2
1585	1585	PUNJAB	2014	21.8	20.1	30.3	24.5	20.8	20.6	76.3	41.9	105.8	6.0
1586	1586	PUNJAB	2015	17.7	31.3	68.5	29.8	16.7	48.3	130.2	88.6	69.2	9.0

113 rows × 20 columns



In [212]: PUNJAB.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 1474 to 1586
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [213]: PUNJAB.describe()

Out[213]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	1530.000000	1959.000000	25.200000	26.810619	23.759292	12.769027	13.901770
std	32.76431	32.76431	22.192313	23.451376	23.056277	16.870029	15.212677
min	1474.000000	1903.000000	0.100000	0.000000	0.000000	0.000000	0.100000
25%	1502.000000	1931.000000	8.000000	5.700000	6.900000	2.700000	3.300000
50%	1530.000000	1959.000000	21.600000	21.300000	15.800000	6.700000	8.800000
75%	1558.000000	1987.000000	35.800000	40.300000	34.000000	15.900000	19.300000
max	1586.000000	2015.000000	112.100000	96.000000	108.500000	113.200000	98.300000

```
In [214]: PUNJAB.columns
```

```
Out[214]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [215]: PUNJAB.dropna()
```

```
Out[215]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1474	1474	PUNJAB	1903	29.5	0.5	45.0	1.3	9.2	5.2	212.2	119.1	132.5	6.9
1475	1475	PUNJAB	1904	24.2	1.7	87.8	1.2	13.8	22.0	59.9	124.0	73.8	7.4
1476	1476	PUNJAB	1905	53.0	40.3	24.3	0.5	2.2	19.2	122.6	50.3	111.1	1.2
1477	1477	PUNJAB	1906	5.3	83.1	50.5	1.5	4.7	38.3	99.4	190.5	181.5	0.5
1478	1478	PUNJAB	1907	27.3	95.4	53.1	50.7	3.3	20.2	82.8	249.0	6.8	0.4
...
1582	1582	PUNJAB	2011	3.5	35.6	8.2	17.8	18.9	162.9	120.9	193.5	140.2	0.0
1583	1583	PUNJAB	2012	62.6	3.2	1.9	31.1	1.6	11.9	120.2	135.1	112.3	2.2
1584	1584	PUNJAB	2013	9.3	50.1	11.6	3.4	3.6	120.3	117.9	217.1	24.4	16.2
1585	1585	PUNJAB	2014	21.8	20.1	30.3	24.5	20.8	20.6	76.3	41.9	105.8	6.0
1586	1586	PUNJAB	2015	17.7	31.3	68.5	29.8	16.7	48.3	130.2	88.6	69.2	9.0

113 rows × 20 columns



```
In [216]: PUNJAB.fillna(356)
```

Out[216]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1474	1474	PUNJAB	1903	29.5	0.5	45.0	1.3	9.2	5.2	212.2	119.1	132.5	6.9
1475	1475	PUNJAB	1904	24.2	1.7	87.8	1.2	13.8	22.0	59.9	124.0	73.8	7.4
1476	1476	PUNJAB	1905	53.0	40.3	24.3	0.5	2.2	19.2	122.6	50.3	111.1	1.2
1477	1477	PUNJAB	1906	5.3	83.1	50.5	1.5	4.7	38.3	99.4	190.5	181.5	0.5
1478	1478	PUNJAB	1907	27.3	95.4	53.1	50.7	3.3	20.2	82.8	249.0	6.8	0.4
...
1582	1582	PUNJAB	2011	3.5	35.6	8.2	17.8	18.9	162.9	120.9	193.5	140.2	0.0
1583	1583	PUNJAB	2012	62.6	3.2	1.9	31.1	1.6	11.9	120.2	135.1	112.3	2.2
1584	1584	PUNJAB	2013	9.3	50.1	11.6	3.4	3.6	120.3	117.9	217.1	24.4	16.2
1585	1585	PUNJAB	2014	21.8	20.1	30.3	24.5	20.8	20.6	76.3	41.9	105.8	6.0
1586	1586	PUNJAB	2015	17.7	31.3	68.5	29.8	16.7	48.3	130.2	88.6	69.2	9.0

113 rows × 20 columns



```
In [217]: np.shape(PUNJAB)
```

Out[217]: (113, 20)

```
In [218]: np.size(PUNJAB)
```

Out[218]: 2260

In [219]: PUNJAB.isna()

Out[219]:

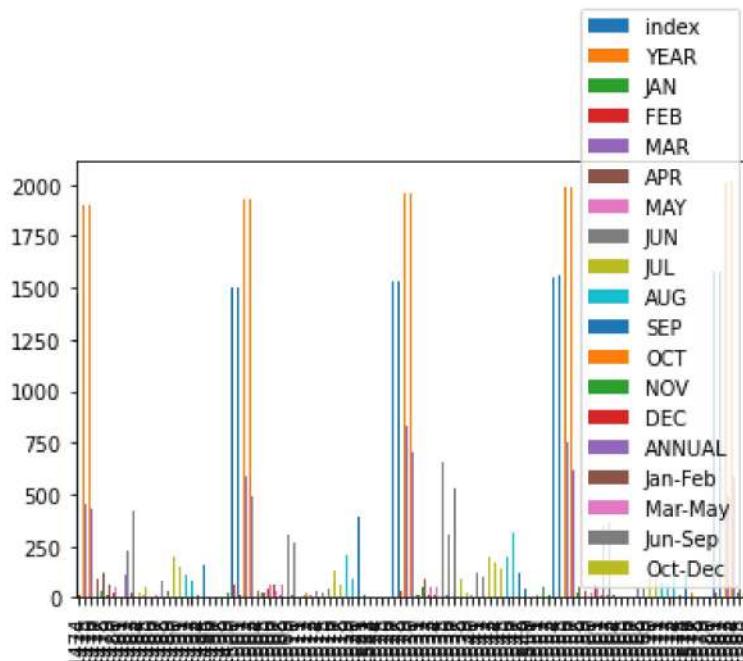
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1474	False		False										
1475	False		False										
1476	False		False										
1477	False		False										
1478	False		False										
...
1582	False		False										
1583	False		False										
1584	False		False										
1585	False		False										
1586	False		False										

113 rows × 20 columns



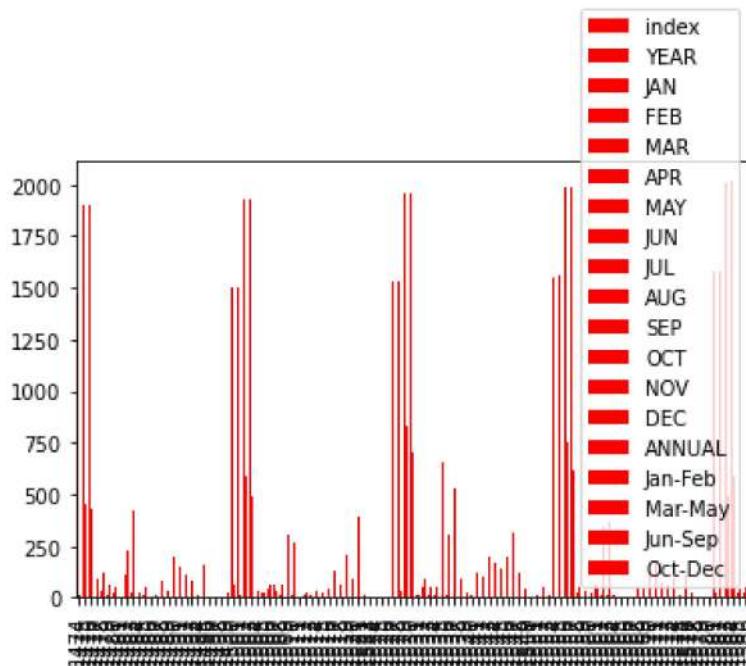
In [220]: PUNJAB.plot.bar()

Out[220]: <AxesSubplot:>



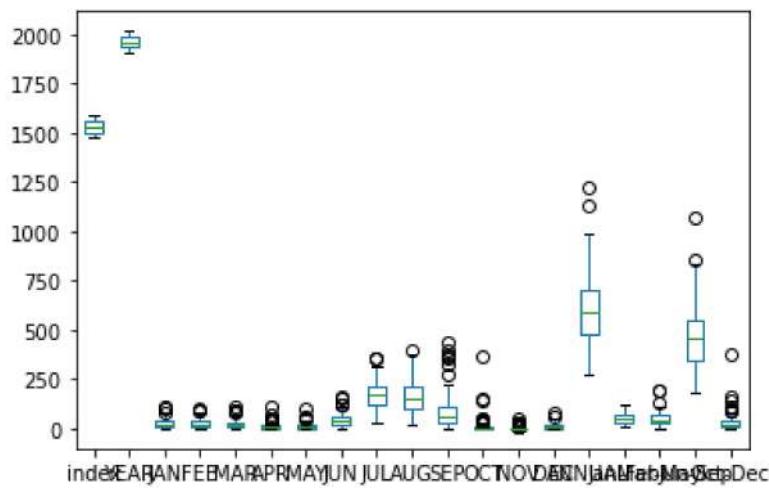
```
In [221]: PUNJAB.plot.bar(color='r')
```

```
Out[221]: <AxesSubplot:>
```



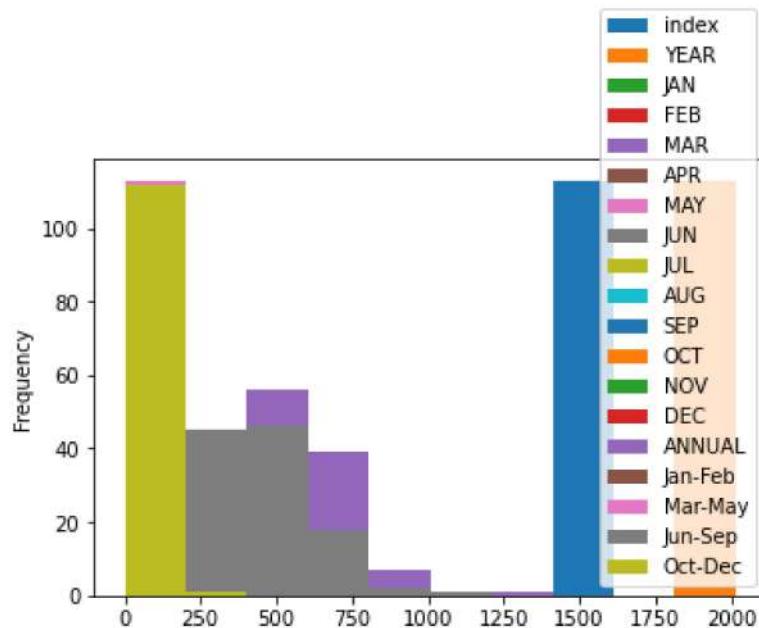
```
In [222]: PUNJAB.plot.box()
```

```
Out[222]: <AxesSubplot:>
```



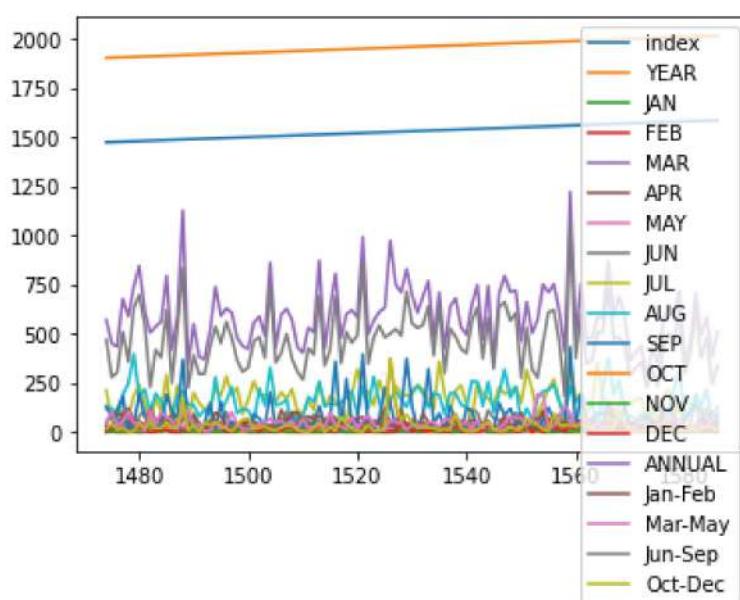
```
In [223]: PUNJAB.plot.hist()
```

```
Out[223]: <AxesSubplot:ylabel='Frequency'>
```



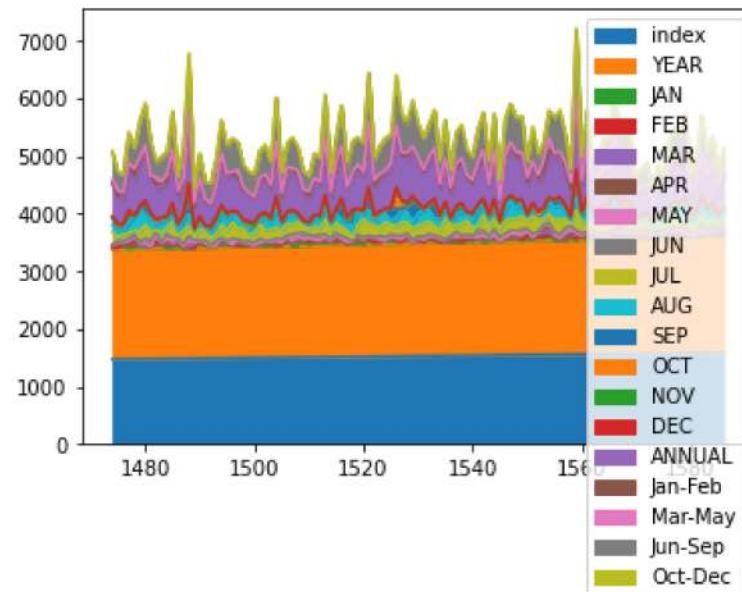
```
In [224]: PUNJAB.plot.line()
```

```
Out[224]: <AxesSubplot:>
```



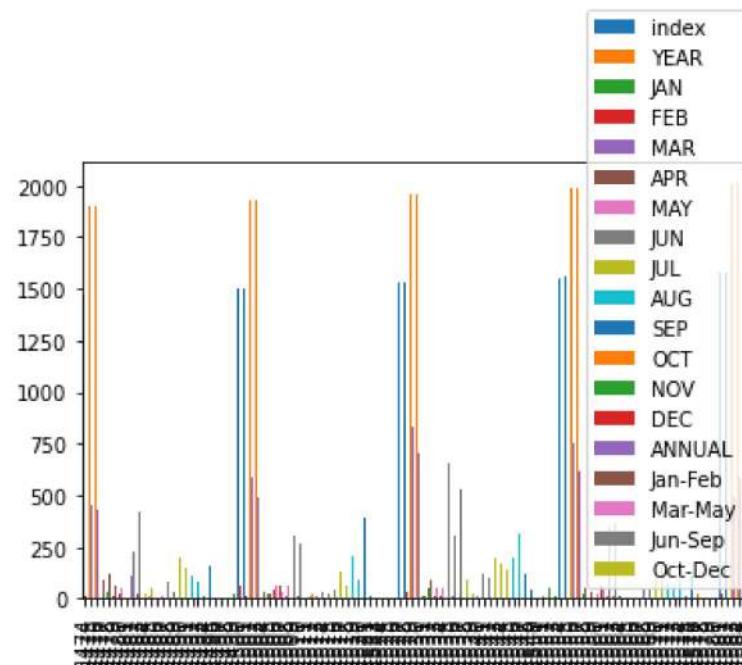
```
In [225]: PUNJAB.plot.area()
```

```
Out[225]: <AxesSubplot:>
```



```
In [226]: PUNJAB.plot.bar()
```

```
Out[226]: <AxesSubplot:>
```



HIMACHAL PRADESH

In [227]: `HIMACHAL=sd[1589:1702]`
HIMACHAL

Out[227]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1589	1589	HIMACHAL PRADESH	1903	76.5	21.4	213.7	25.4	54.7	32.2	157.7	256.5	107.9	5	10	15
1590	1590	HIMACHAL PRADESH	1904	79.3	22.4	131.7	48.0	90.3	33.1	241.1	184.3	56.4	51	11	16
1591	1591	HIMACHAL PRADESH	1905	81.3	76.8	160.2	39.3	50.4	43.6	191.1	132.8	119.1	60	12	17
1592	1592	HIMACHAL PRADESH	1906	44.1	143.9	89.5	5.3	29.9	152.6	168.7	433.7	230.9	2	13	18
1593	1593	HIMACHAL PRADESH	1907	124.2	145.1	144.9	73.0	34.2	23.7	95.7	200.6	18.9	14	23	28
...
1697	1697	HIMACHAL PRADESH	2011	43.9	97.4	49.7	62.4	45.1	118.3	177.7	380.2	120.3	6	11	16
1698	1698	HIMACHAL PRADESH	2012	92.3	51.3	28.4	55.9	9.4	31.1	241.5	280.6	133.1	3	8	13
1699	1699	HIMACHAL PRADESH	2013	79.9	182.6	76.6	28.9	32.6	233.6	208.8	240.0	65.8	21	7	12
1700	1700	HIMACHAL PRADESH	2014	69.6	124.9	125.2	60.6	68.9	51.7	203.6	146.7	84.6	19	6	11
1701	1701	HIMACHAL PRADESH	2015	67.2	156.6	192.5	84.9	45.0	85.8	249.9	195.9	75.5	17	5	10

113 rows × 20 columns



In [228]: HIMACHAL.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 1589 to 1701
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [229]: HIMACHAL.describe()

Out[229]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	1645.000000	1959.000000	84.402655	90.720354	101.348673	62.689381	57.850442
std	32.76431	32.76431	51.615511	51.776172	67.053643	35.948960	34.142776
min	1589.000000	1903.000000	0.300000	0.700000	5.900000	4.500000	8.800000
25%	1617.000000	1931.000000	45.200000	51.300000	53.700000	35.500000	34.200000
50%	1645.000000	1959.000000	78.000000	82.800000	83.600000	55.900000	53.500000
75%	1673.000000	1987.000000	113.400000	124.700000	137.300000	84.900000	78.100000
max	1701.000000	2015.000000	246.300000	271.800000	382.000000	181.700000	214.200000

```
In [230]: HIMACHAL.columns
```

```
Out[230]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [231]: HIMACHAL.dropna()
```

```
Out[231]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
1589	1589	HIMACHAL PRADESH	1903	76.5	21.4	213.7	25.4	54.7	32.2	157.7	256.5	107.9	5	10	10	10	10	10	10	10
1590	1590	HIMACHAL PRADESH	1904	79.3	22.4	131.7	48.0	90.3	33.1	241.1	184.3	56.4	51	10	10	10	10	10	10	10
1591	1591	HIMACHAL PRADESH	1905	81.3	76.8	160.2	39.3	50.4	43.6	191.1	132.8	119.1	10	10	10	10	10	10	10	10
1592	1592	HIMACHAL PRADESH	1906	44.1	143.9	89.5	5.3	29.9	152.6	168.7	433.7	230.9	2	10	10	10	10	10	10	10
1593	1593	HIMACHAL PRADESH	1907	124.2	145.1	144.9	73.0	34.2	23.7	95.7	200.6	18.9	12	10	10	10	10	10	10	10
...
1697	1697	HIMACHAL PRADESH	2011	43.9	97.4	49.7	62.4	45.1	118.3	177.7	380.2	120.3	6	10	10	10	10	10	10	10
1698	1698	HIMACHAL PRADESH	2012	92.3	51.3	28.4	55.9	9.4	31.1	241.5	280.6	133.1	3	10	10	10	10	10	10	10
1699	1699	HIMACHAL PRADESH	2013	79.9	182.6	76.6	28.9	32.6	233.6	208.8	240.0	65.8	21	10	10	10	10	10	10	10
1700	1700	HIMACHAL PRADESH	2014	69.6	124.9	125.2	60.6	68.9	51.7	203.6	146.7	84.6	19	10	10	10	10	10	10	10
1701	1701	HIMACHAL PRADESH	2015	67.2	156.6	192.5	84.9	45.0	85.8	249.9	195.9	75.5	17	10	10	10	10	10	10	10

113 rows × 20 columns



```
In [232]: HIMACHAL.fillna(356)
```

```
Out[232]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1589	1589	HIMACHAL PRADESH	1903	76.5	21.4	213.7	25.4	54.7	32.2	157.7	256.5	107.9	5	10	15
1590	1590	HIMACHAL PRADESH	1904	79.3	22.4	131.7	48.0	90.3	33.1	241.1	184.3	56.4	51	10	15
1591	1591	HIMACHAL PRADESH	1905	81.3	76.8	160.2	39.3	50.4	43.6	191.1	132.8	119.1	10	10	15
1592	1592	HIMACHAL PRADESH	1906	44.1	143.9	89.5	5.3	29.9	152.6	168.7	433.7	230.9	2	10	15
1593	1593	HIMACHAL PRADESH	1907	124.2	145.1	144.9	73.0	34.2	23.7	95.7	200.6	18.9	12	10	15
...
1697	1697	HIMACHAL PRADESH	2011	43.9	97.4	49.7	62.4	45.1	118.3	177.7	380.2	120.3	6	10	15
1698	1698	HIMACHAL PRADESH	2012	92.3	51.3	28.4	55.9	9.4	31.1	241.5	280.6	133.1	3	10	15
1699	1699	HIMACHAL PRADESH	2013	79.9	182.6	76.6	28.9	32.6	233.6	208.8	240.0	65.8	21	10	15
1700	1700	HIMACHAL PRADESH	2014	69.6	124.9	125.2	60.6	68.9	51.7	203.6	146.7	84.6	19	10	15
1701	1701	HIMACHAL PRADESH	2015	67.2	156.6	192.5	84.9	45.0	85.8	249.9	195.9	75.5	17	10	15

113 rows × 20 columns



```
In [233]: np.shape(HIMACHAL)
```

```
Out[233]: (113, 20)
```

```
In [234]: np.size(HIMACHAL)
```

```
Out[234]: 2260
```

In [235]: `HIMACHAL.isna()`

Out[235]:

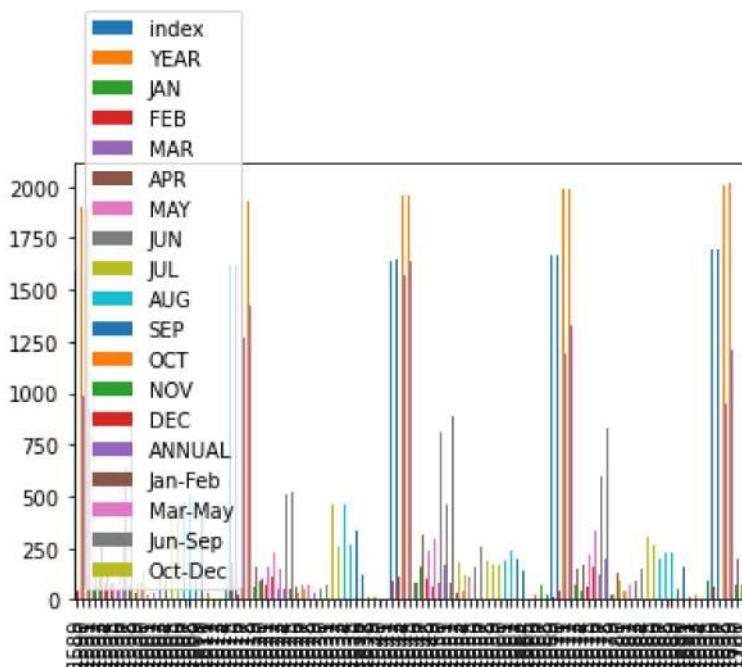
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1589	False		False										
1590	False		False										
1591	False		False										
1592	False		False										
1593	False		False										
...
1697	False		False										
1698	False		False										
1699	False		False										
1700	False		False										
1701	False		False										

113 rows × 20 columns



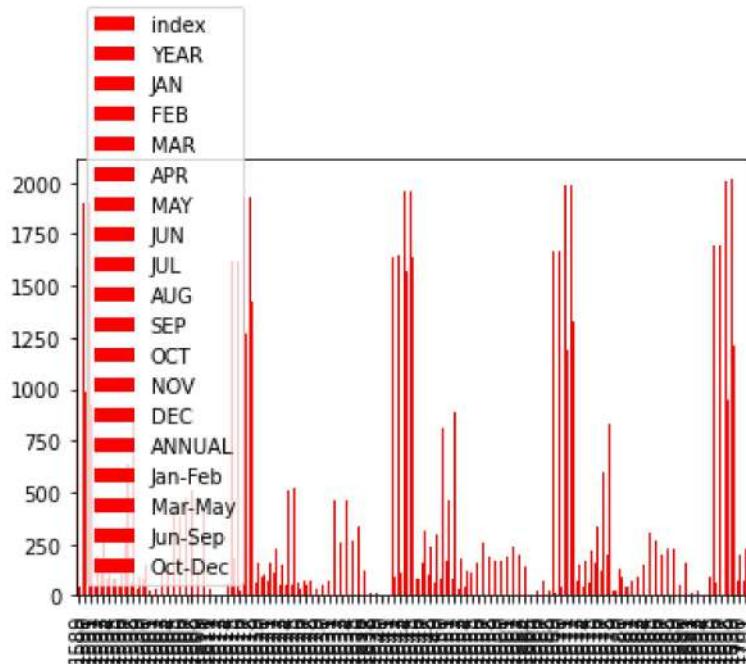
In [236]: `HIMACHAL.plot.bar()`

Out[236]: `<AxesSubplot:>`



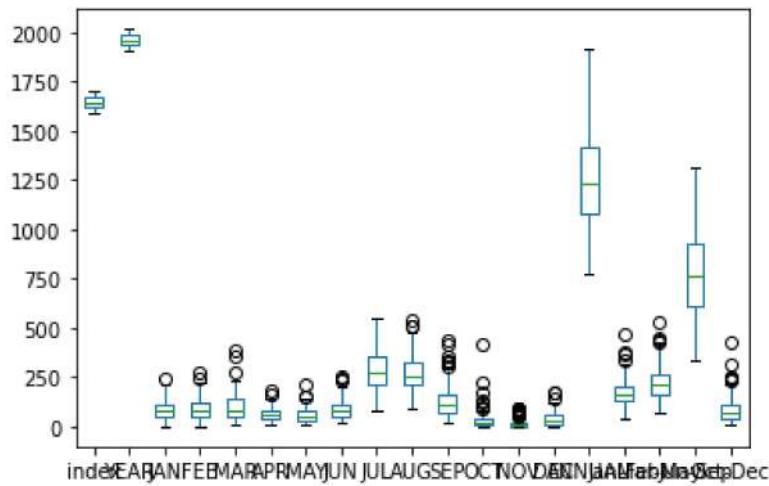
```
In [237]: HIMACHAL.plot.bar(color='r')
```

```
Out[237]: <AxesSubplot:>
```



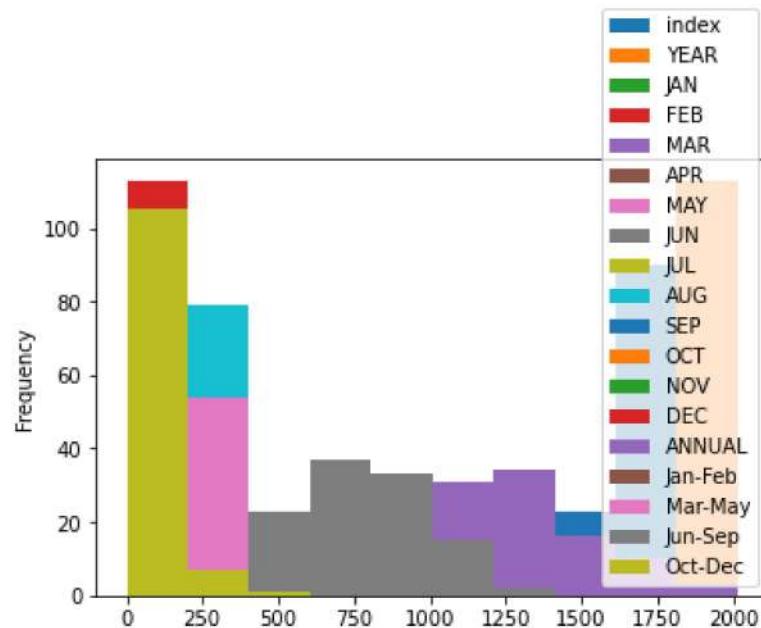
```
In [238]: HIMACHAL.plot.box()
```

```
Out[238]: <AxesSubplot:>
```



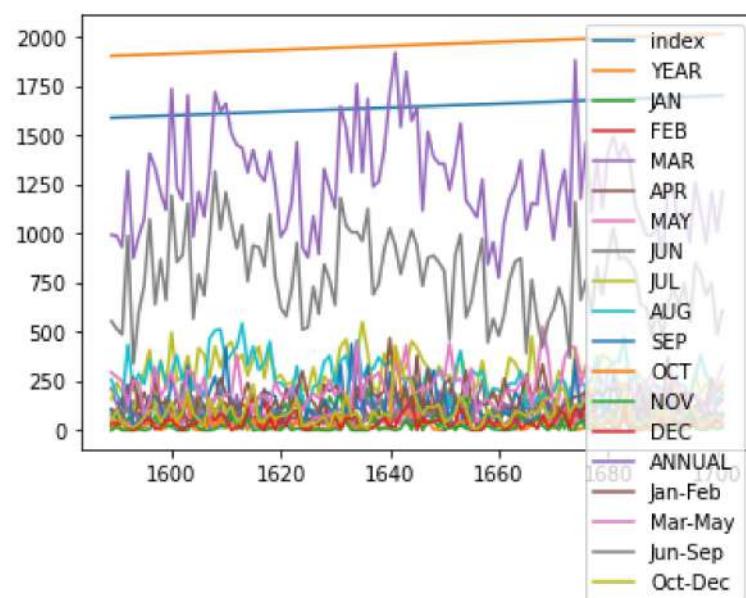
```
In [239]: HIMACHAL.plot.hist()
```

```
Out[239]: <AxesSubplot:ylabel='Frequency'>
```



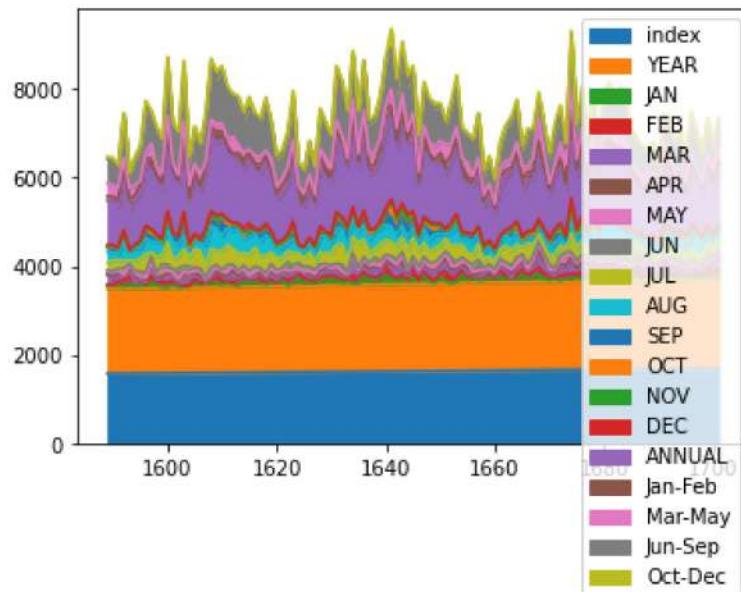
```
In [240]: HIMACHAL.plot.line()
```

```
Out[240]: <AxesSubplot:>
```



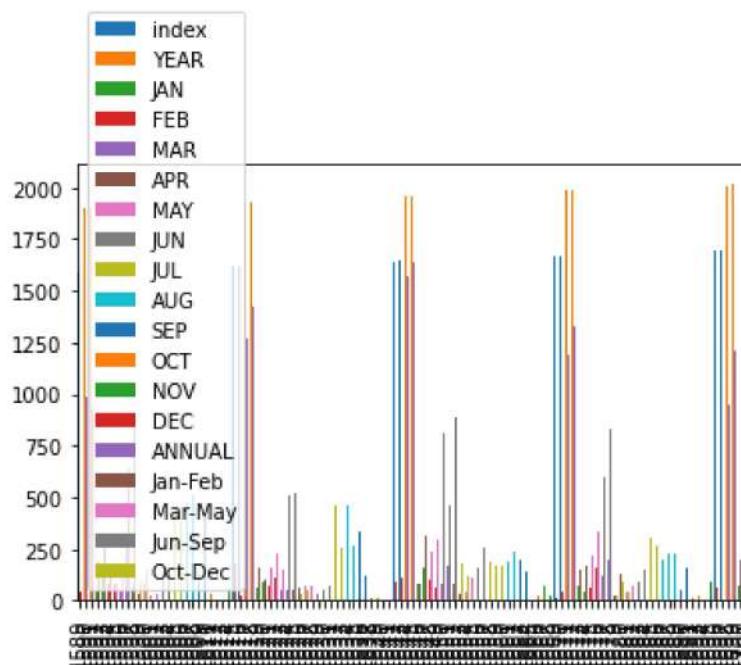
```
In [241]: HIMACHAL.plot.area()
```

```
Out[241]: <AxesSubplot:>
```



```
In [242]: HIMACHAL.plot.bar()
```

```
Out[242]: <AxesSubplot:>
```



JAMMU & KASHMIR

```
In [243]: JAMMU=sd[1702:1817]  
JAMMU
```

Out[243]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1702	1702	JAMMU & KASHMIR	1901	66.4	69.3	69.6	132.2	105.8	53.4	171.7	181.3	101.8	111.1	111.1	111.1
1703	1703	JAMMU & KASHMIR	1902	6.5	9.7	91.3	100.5	70.7	113.3	108.4	136.9	62.2	111.1	111.1	111.1
1704	1704	JAMMU & KASHMIR	1903	96.2	21.5	238.6	58.7	57.3	18.9	332.5	218.6	176.9	111.1	111.1	111.1
1705	1705	JAMMU & KASHMIR	1904	110.6	17.3	145.2	64.5	67.8	25.9	182.3	132.2	62.3	111.1	111.1	111.1
1706	1706	JAMMU & KASHMIR	1905	146.7	76.3	161.4	71.7	65.2	43.3	145.2	111.5	239.7	111.1	111.1	111.1
...
1812	1812	JAMMU & KASHMIR	2011	43.4	211.6	97.8	89.0	32.4	72.5	81.6	131.2	72.0	111.1	111.1	111.1
1813	1813	JAMMU & KASHMIR	2012	150.9	95.8	45.2	86.6	48.9	32.6	118.8	264.9	106.7	111.1	111.1	111.1
1814	1814	JAMMU & KASHMIR	2013	52.2	136.4	41.9	47.4	47.4	80.5	125.1	219.1	41.2	111.1	111.1	111.1
1815	1815	JAMMU & KASHMIR	2014	75.8	64.0	153.1	76.1	52.7	25.3	100.5	134.6	362.8	111.1	111.1	111.1
1816	1816	JAMMU & KASHMIR	2015	27.9	187.2	341.4	173.3	64.6	121.4	233.2	129.2	130.2	111.1	111.1	111.1

115 rows × 20 columns



In [244]: JAMMU.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 1702 to 1816
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [245]: JAMMU.describe()

Out[245]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	11
mean	1759.000000	1958.000000	102.030435	115.450435	131.378261	93.702609	67.476522	6
std	33.341666	33.341666	66.226797	66.933995	71.709964	48.381444	37.439217	3
min	1702.000000	1901.000000	0.000000	9.700000	9.900000	5.700000	4.700000	
25%	1730.500000	1929.500000	59.300000	65.200000	83.800000	59.850000	40.150000	3
50%	1759.000000	1958.000000	90.400000	102.700000	116.000000	86.800000	61.300000	5
75%	1787.500000	1986.500000	129.700000	149.700000	173.500000	119.400000	91.750000	8
max	1816.000000	2015.000000	367.800000	403.500000	341.400000	233.200000	234.400000	18

```
In [246]: JAMMU.columns
```

```
Out[246]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [247]: JAMMU.dropna()
```

```
Out[247]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
1702	1702	JAMMU & KASHMIR	1901	66.4	69.3	69.6	132.2	105.8	53.4	171.7	181.3	101.8	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1703	1703	JAMMU & KASHMIR	1902	6.5	9.7	91.3	100.5	70.7	113.3	108.4	136.9	62.2	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1704	1704	JAMMU & KASHMIR	1903	96.2	21.5	238.6	58.7	57.3	18.9	332.5	218.6	176.9	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1705	1705	JAMMU & KASHMIR	1904	110.6	17.3	145.2	64.5	67.8	25.9	182.3	132.2	62.3	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1706	1706	JAMMU & KASHMIR	1905	146.7	76.3	161.4	71.7	65.2	43.3	145.2	111.5	239.7	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
...	
1812	1812	JAMMU & KASHMIR	2011	43.4	211.6	97.8	89.0	32.4	72.5	81.6	131.2	72.0	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1813	1813	JAMMU & KASHMIR	2012	150.9	95.8	45.2	86.6	48.9	32.6	118.8	264.9	106.7	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1814	1814	JAMMU & KASHMIR	2013	52.2	136.4	41.9	47.4	47.4	80.5	125.1	219.1	41.2	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1815	1815	JAMMU & KASHMIR	2014	75.8	64.0	153.1	76.1	52.7	25.3	100.5	134.6	362.8	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1816	1816	JAMMU & KASHMIR	2015	27.9	187.2	341.4	173.3	64.6	121.4	233.2	129.2	130.2	110.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

114 rows × 20 columns



```
In [248]: JAMMU.fillna(356)
```

```
Out[248]:
```

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

115 rows × 20 columns



```
In [249]: np.shape(JAMMU)
```

```
Out[249]: (115, 20)
```

```
In [250]: np.size(JAMMU)
```

```
Out[250]: 2300
```

```
In [251]: JAMMU.isna()
```

Out[251]:

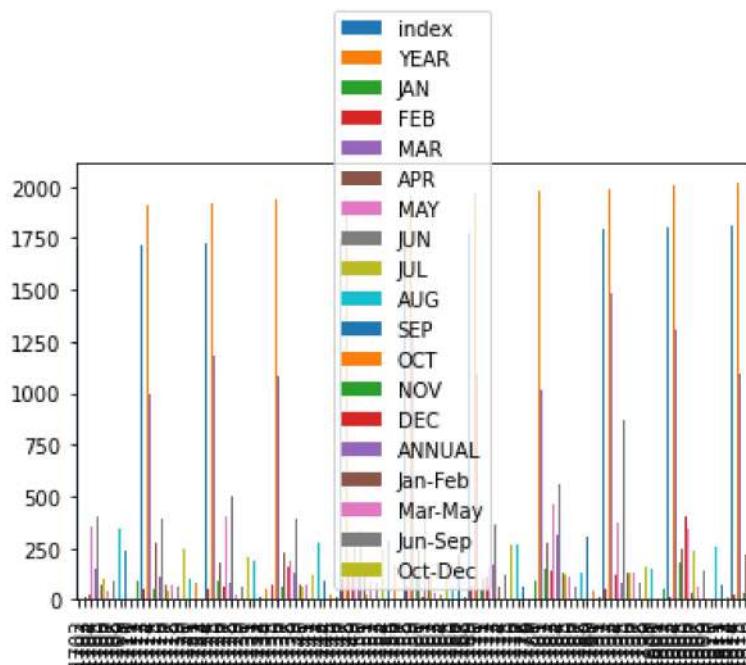
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1702	False		False										
1703	False		False										
1704	False		False										
1705	False		False										
1706	False		False										
...
1812	False		False										
1813	False		False										
1814	False		False										
1815	False		False										
1816	False		False										

115 rows × 20 columns



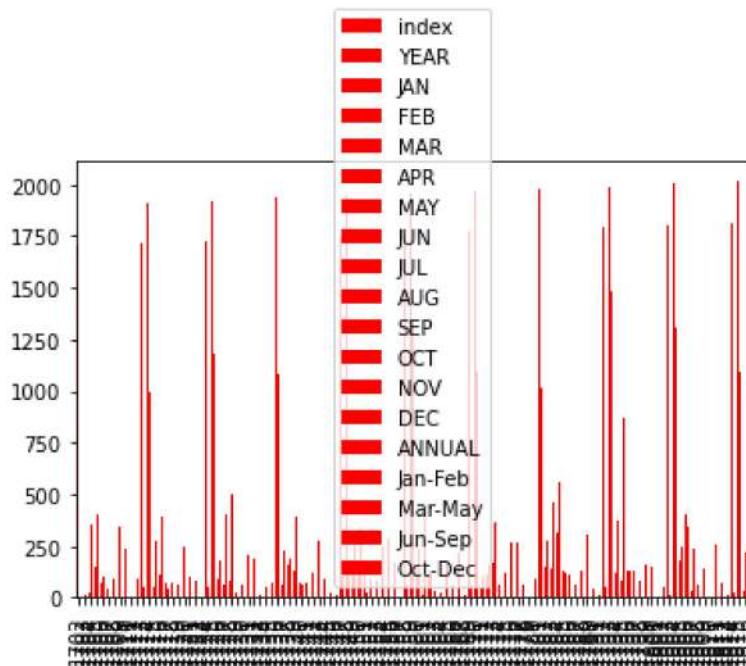
```
In [252]: JAMMU.plot.bar()
```

Out[252]: <AxesSubplot:>



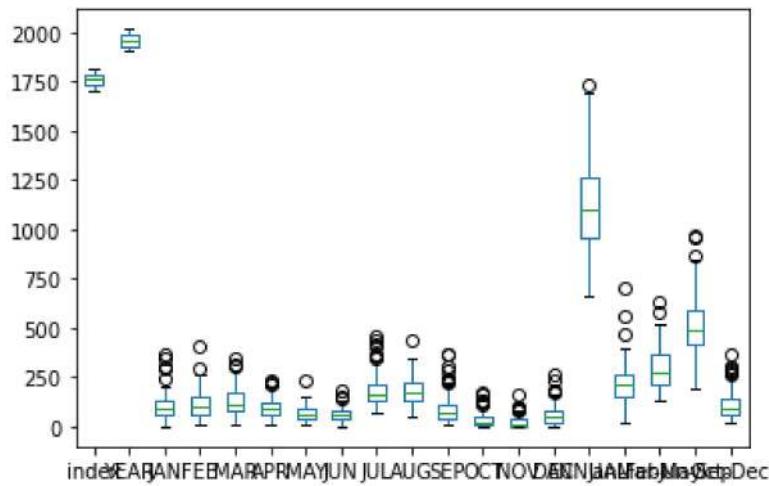
```
In [253]: JAMMU.plot.bar(color='r')
```

```
Out[253]: <AxesSubplot:>
```



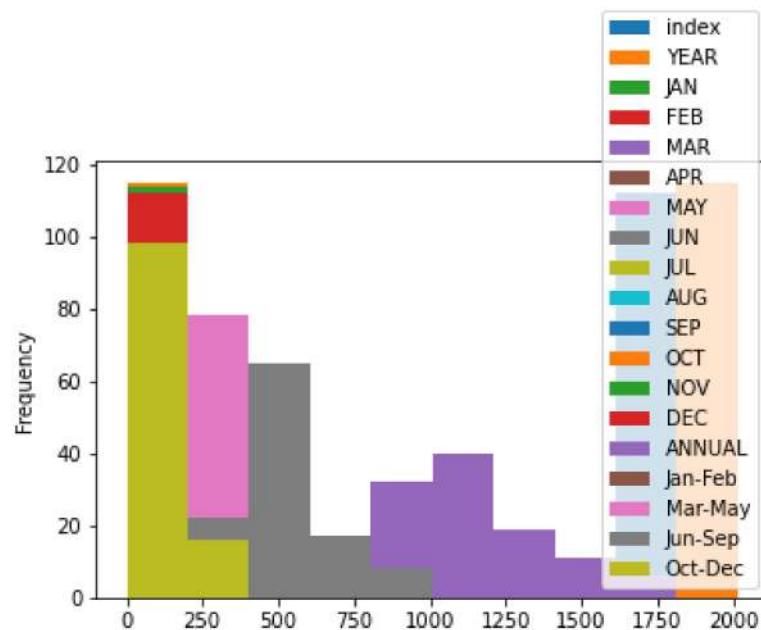
```
In [254]: JAMMU.plot.box()
```

```
Out[254]: <AxesSubplot:>
```



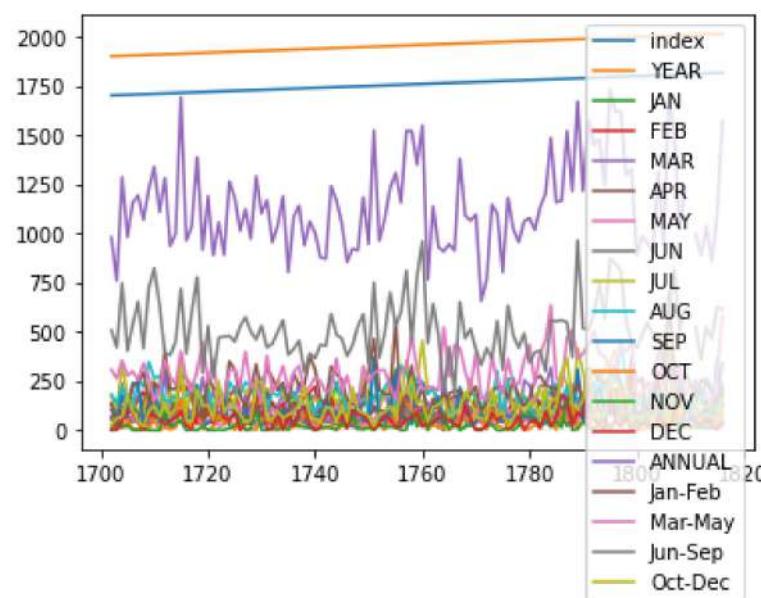
```
In [255]: JAMMU.plot.hist()
```

```
Out[255]: <AxesSubplot:ylabel='Frequency'>
```



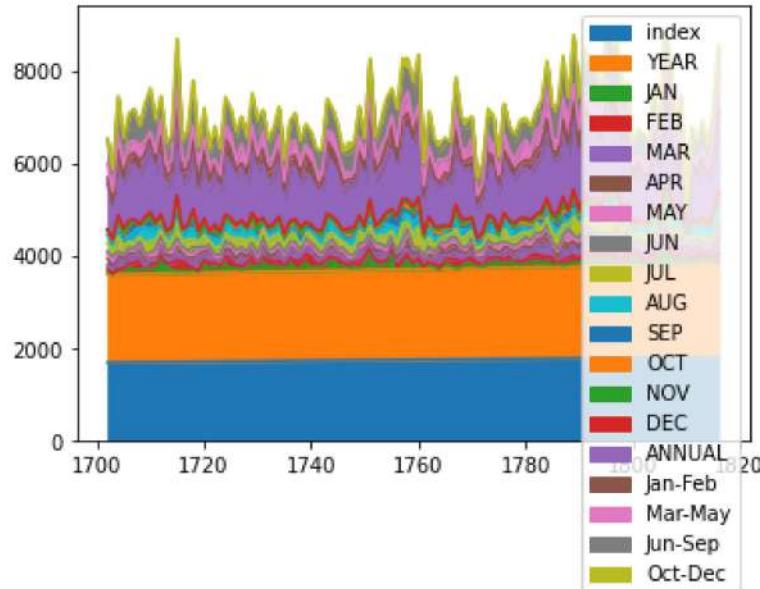
```
In [256]: JAMMU.plot.line()
```

```
Out[256]: <AxesSubplot:>
```



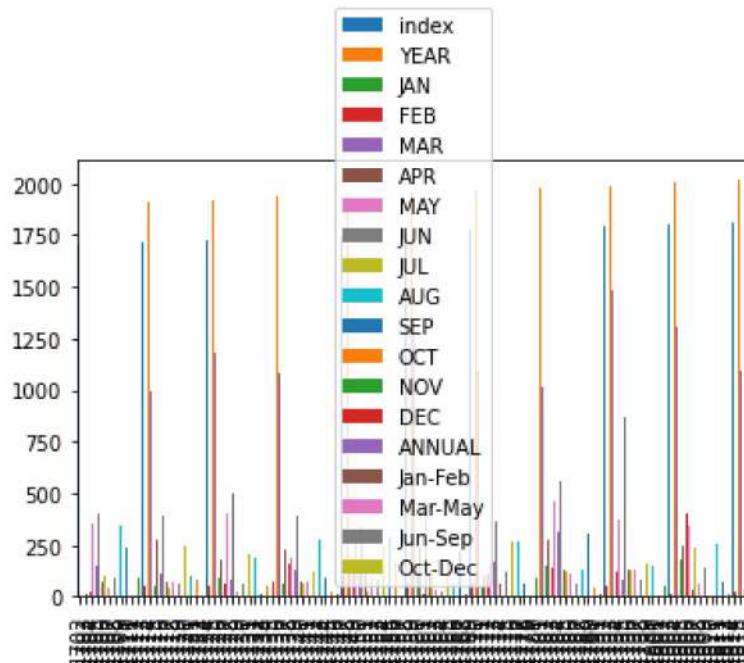
```
In [257]: JAMMU.plot.area()
```

```
Out[257]: <AxesSubplot:>
```



```
In [258]: JAMMU.plot.bar()
```

```
Out[258]: <AxesSubplot:>
```



WEST_RAJASTHAN

```
In [259]: WEST_RAJASTHAN=sd[1817:1931]  
WEST_RAJASTHAN
```

Out[259]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1817	1817	WEST RAJASTHAN	1901	6.7	0.0	1.1	0.0	6.1	3.0	79.0	59.2	1.0	2.1
1818	1818	WEST RAJASTHAN	1902	0.0	0.0	0.0	0.5	4.0	49.1	27.0	71.3	41.8	1.8
1819	1819	WEST RAJASTHAN	1903	1.7	1.3	5.5	0.0	4.2	2.7	154.8	87.1	49.3	0.1
1820	1820	WEST RAJASTHAN	1904	3.8	2.9	16.3	0.7	11.4	14.6	39.8	45.6	21.4	1.4
1821	1821	WEST RAJASTHAN	1905	6.3	4.8	0.7	1.3	0.3	4.9	30.1	0.6	64.5	0.0
...
1926	1926	WEST RAJASTHAN	2010	1.9	1.7	0.6	0.6	3.0	49.5	129.9	163.4	96.5	0.9
1927	1927	WEST RAJASTHAN	2011	0.0	11.8	1.5	1.5	7.8	24.4	88.5	166.8	116.3	0.1
1928	1928	WEST RAJASTHAN	2012	0.5	0.0	0.0	9.5	10.4	5.3	40.4	166.7	92.0	1.9
1929	1929	WEST RAJASTHAN	2013	8.6	21.8	4.2	3.1	1.7	37.6	104.5	138.2	58.7	10.1
1930	1930	WEST RAJASTHAN	2014	0.8	2.2	4.7	8.4	23.0	13.8	94.3	69.6	84.9	0.5

114 rows × 20 columns



In [260]: WEST_RAJASTHAN.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 1817 to 1930
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [261]: WEST_RAJASTHAN.describe()

Out[261]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114
mean	1873.500000	1957.500000	3.344737	4.965789	3.755263	3.381579	9.390351	28
std	33.052988	33.052988	4.568381	7.884305	7.444260	5.580522	10.886055	22
min	1817.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0
25%	1845.250000	1929.250000	0.325000	0.200000	0.200000	0.400000	1.925000	13
50%	1873.500000	1957.500000	1.650000	1.300000	1.100000	1.400000	6.050000	21
75%	1901.750000	1985.750000	4.100000	6.075000	5.000000	3.675000	12.000000	39
max	1930.000000	2014.000000	21.400000	39.100000	59.000000	36.100000	56.800000	143

```
In [262]: WEST_RAJASTHAN.columns
```

```
Out[262]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [263]: WEST_RAJASTHAN.dropna()
```

```
Out[263]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1817	1817		WEST RAJASTHAN	1901	6.7	0.0	1.1	0.0	6.1	3.0	79.0	59.2	1.0	2.1
1818	1818		WEST RAJASTHAN	1902	0.0	0.0	0.0	0.5	4.0	49.1	27.0	71.3	41.8	1.8
1819	1819		WEST RAJASTHAN	1903	1.7	1.3	5.5	0.0	4.2	2.7	154.8	87.1	49.3	0.1
1820	1820		WEST RAJASTHAN	1904	3.8	2.9	16.3	0.7	11.4	14.6	39.8	45.6	21.4	1.4
1821	1821		WEST RAJASTHAN	1905	6.3	4.8	0.7	1.3	0.3	4.9	30.1	0.6	64.5	0.0
...
1926	1926		WEST RAJASTHAN	2010	1.9	1.7	0.6	0.6	3.0	49.5	129.9	163.4	96.5	0.9
1927	1927		WEST RAJASTHAN	2011	0.0	11.8	1.5	1.5	7.8	24.4	88.5	166.8	116.3	0.1
1928	1928		WEST RAJASTHAN	2012	0.5	0.0	0.0	9.5	10.4	5.3	40.4	166.7	92.0	1.9
1929	1929		WEST RAJASTHAN	2013	8.6	21.8	4.2	3.1	1.7	37.6	104.5	138.2	58.7	10.1
1930	1930		WEST RAJASTHAN	2014	0.8	2.2	4.7	8.4	23.0	13.8	94.3	69.6	84.9	0.5

114 rows × 20 columns



```
In [264]: WEST_RAJASTHAN.fillna(356)
```

Out[264]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1817	1817	WEST RAJASTHAN	1901	6.7	0.0	1.1	0.0	6.1	3.0	79.0	59.2	1.0	2.1
1818	1818	WEST RAJASTHAN	1902	0.0	0.0	0.0	0.5	4.0	49.1	27.0	71.3	41.8	1.8
1819	1819	WEST RAJASTHAN	1903	1.7	1.3	5.5	0.0	4.2	2.7	154.8	87.1	49.3	0.1
1820	1820	WEST RAJASTHAN	1904	3.8	2.9	16.3	0.7	11.4	14.6	39.8	45.6	21.4	1.4
1821	1821	WEST RAJASTHAN	1905	6.3	4.8	0.7	1.3	0.3	4.9	30.1	0.6	64.5	0.0
...
1926	1926	WEST RAJASTHAN	2010	1.9	1.7	0.6	0.6	3.0	49.5	129.9	163.4	96.5	0.9
1927	1927	WEST RAJASTHAN	2011	0.0	11.8	1.5	1.5	7.8	24.4	88.5	166.8	116.3	0.1
1928	1928	WEST RAJASTHAN	2012	0.5	0.0	0.0	9.5	10.4	5.3	40.4	166.7	92.0	1.9
1929	1929	WEST RAJASTHAN	2013	8.6	21.8	4.2	3.1	1.7	37.6	104.5	138.2	58.7	10.1
1930	1930	WEST RAJASTHAN	2014	0.8	2.2	4.7	8.4	23.0	13.8	94.3	69.6	84.9	0.5

114 rows × 20 columns



```
In [265]: np.shape(WEST_RAJASTHAN)
```

Out[265]: (114, 20)

```
In [266]: np.size(WEST_RAJASTHAN)
```

Out[266]: 2280

```
In [267]: WEST_RAJASTHAN.isna()
```

Out[267]:

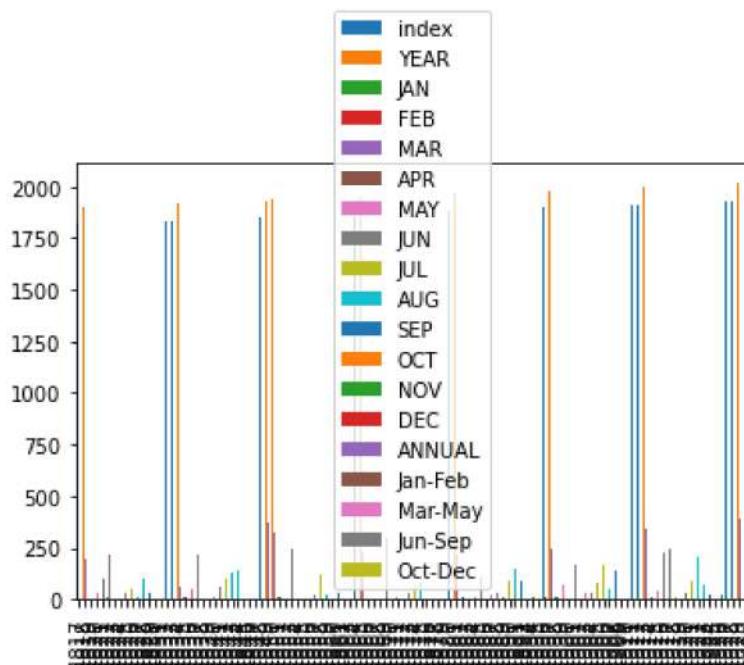
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1817	False		False										
1818	False		False										
1819	False		False										
1820	False		False										
1821	False		False										
...
1926	False		False										
1927	False		False										
1928	False		False										
1929	False		False										
1930	False		False										

114 rows × 20 columns



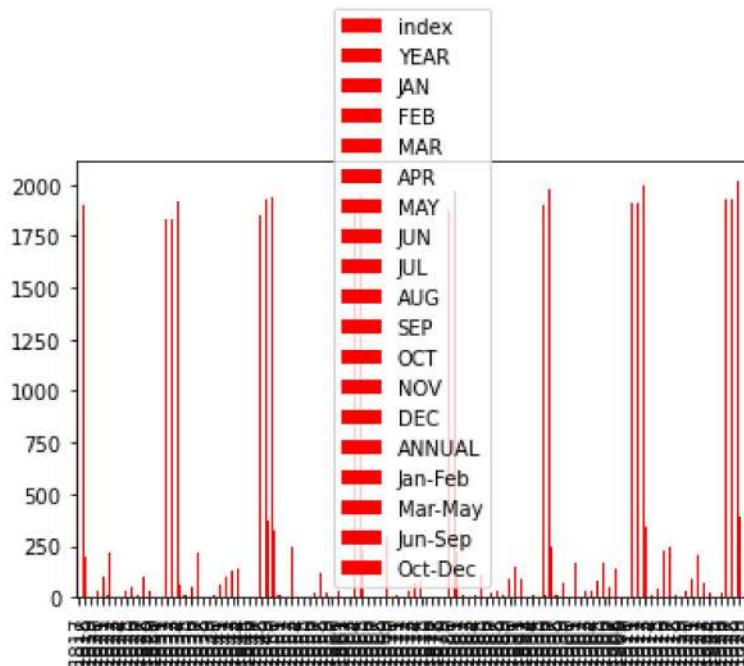
```
In [268]: WEST_RAJASTHAN.plot.bar()
```

Out[268]: <AxesSubplot:>



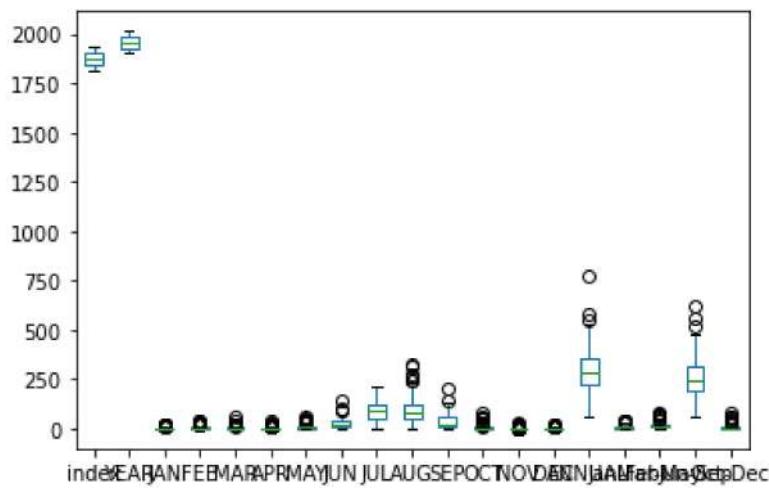
```
In [269]: WEST_RAJASTHAN.plot.bar(color='r')
```

```
Out[269]: <AxesSubplot:>
```



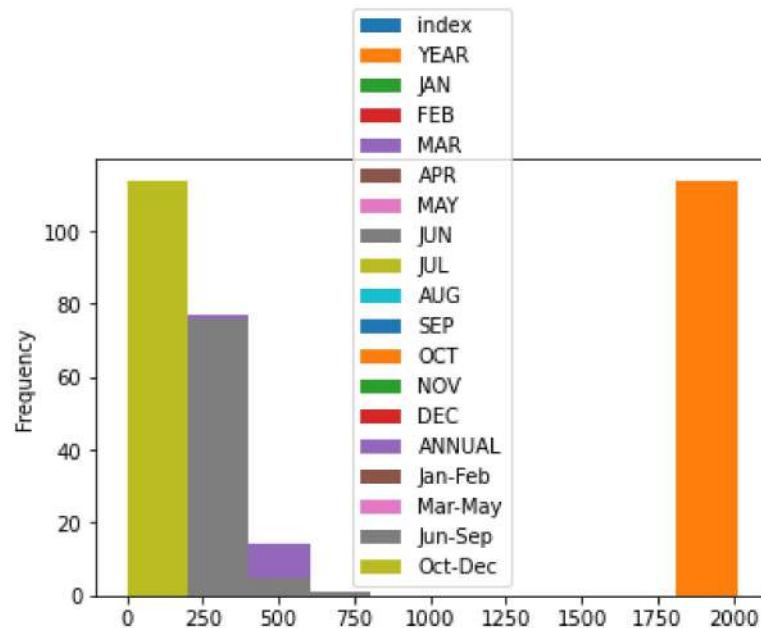
```
In [270]: WEST_RAJASTHAN.plot.box()
```

```
Out[270]: <AxesSubplot:>
```



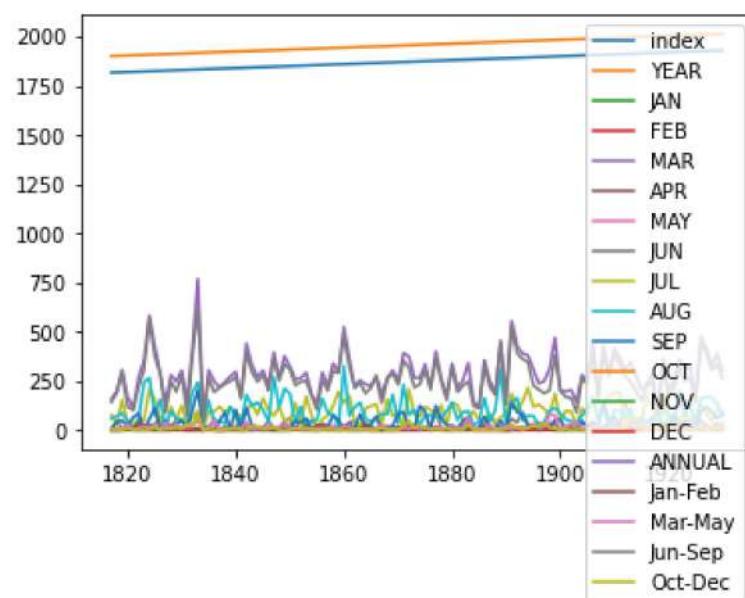
```
In [271]: WEST_RAJASTHAN.plot.hist()
```

```
Out[271]: <AxesSubplot:ylabel='Frequency'>
```



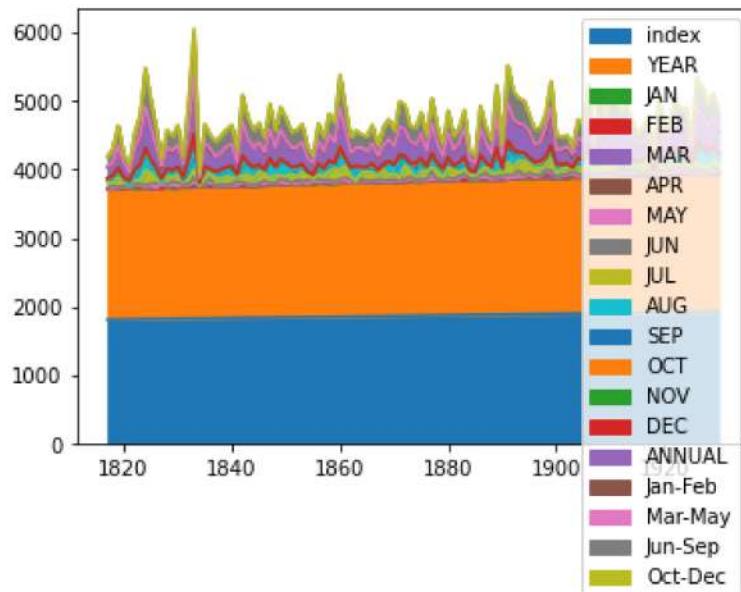
```
In [272]: WEST_RAJASTHAN.plot.line()
```

```
Out[272]: <AxesSubplot:>
```



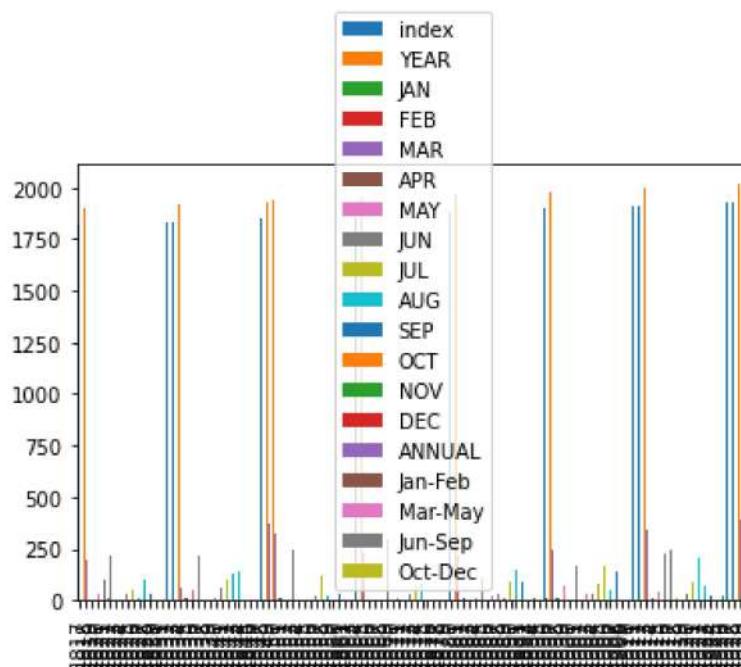
```
In [273]: WEST_RAJASTHAN.plot.area()
```

```
Out[273]: <AxesSubplot:>
```



```
In [274]: WEST_RAJASTHAN.plot.bar()
```

```
Out[274]: <AxesSubplot:>
```



EAST_RAJASTHAN

In [275]: EAST_RAJASTHAN=sd[1933:2046]
EAST_RAJASTHAN

Out[275]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
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
1937	1937	EAST RAJASTHAN	1906	0.2	23.1	6.2	0.0	1.6	61.9	262.5	95.5	191.4	1.9
...
2041	2041	EAST RAJASTHAN	2010	1.9	2.4	0.5	0.4	0.7	27.3	196.2	275.9	128.9	0.8
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

113 rows × 20 columns

```
In [276]: EAST_RAJASTHAN.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 1933 to 2045
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

```
In [277]: EAST_RAJASTHAN.describe()
```

Out[277]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	1989.000000	1958.000000	6.238053	5.433628	4.076106	3.053097	9.918584
std	32.76431	32.76431	8.152315	7.512556	7.832445	5.863630	12.342230
min	1933.000000	1902.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	1961.000000	1930.000000	0.700000	0.500000	0.100000	0.200000	2.300000
50%	1989.000000	1958.000000	3.600000	2.300000	1.100000	1.100000	5.700000
75%	2017.000000	1986.000000	7.900000	8.500000	4.100000	3.100000	12.700000
max	2045.000000	2014.000000	39.200000	35.700000	57.400000	43.200000	90.900000



```
In [278]: EAST_RAJASTHAN.columns
```

```
Out[278]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [279]: EAST_RAJASTHAN.dropna()
```

```
Out[279]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
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
1937	1937	EAST RAJASTHAN	1906	0.2	23.1	6.2	0.0	1.6	61.9	262.5	95.5	191.4	1.9
...
2041	2041	EAST RAJASTHAN	2010	1.9	2.4	0.5	0.4	0.7	27.3	196.2	275.9	128.9	0.8
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

113 rows × 20 columns



```
In [280]: EAST_RAJASTHAN.fillna(356)
```

Out[280]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
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
1937	1937	EAST RAJASTHAN	1906	0.2	23.1	6.2	0.0	1.6	61.9	262.5	95.5	191.4	1.9
...
2041	2041	EAST RAJASTHAN	2010	1.9	2.4	0.5	0.4	0.7	27.3	196.2	275.9	128.9	0.8
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

113 rows × 20 columns



```
In [281]: np.shape(EAST_RAJASTHAN)
```

Out[281]: (113, 20)

```
In [282]: np.size(EAST_RAJASTHAN)
```

Out[282]: 2260

```
In [283]: EAST_RAJASTHAN.isna()
```

Out[283]:

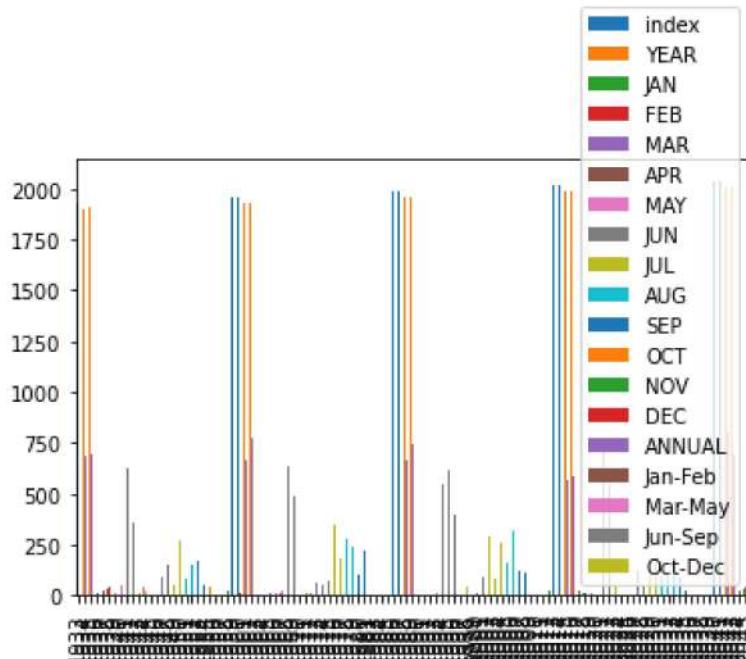
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
1933	False		False										
1934	False		False										
1935	False		False										
1936	False		False										
1937	False		False										
...
2041	False		False										
2042	False		False										
2043	False		False										
2044	False		False										
2045	False		False										

113 rows × 20 columns



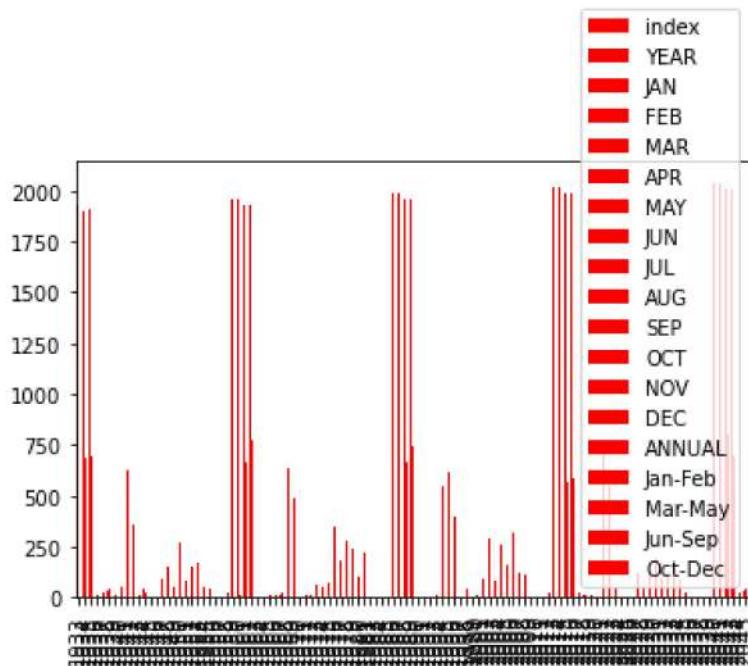
```
In [284]: EAST_RAJASTHAN.plot.bar()
```

Out[284]: <AxesSubplot:>



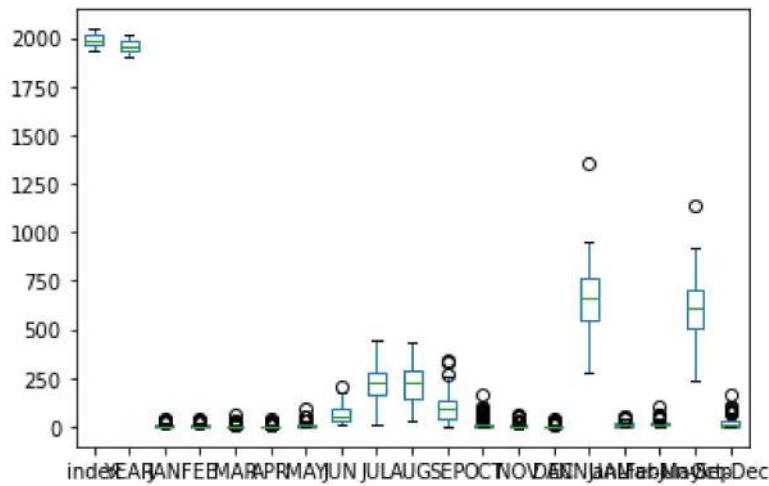
```
In [285]: EAST_RAJASTHAN.plot.bar(color='r')
```

```
Out[285]: <AxesSubplot:>
```



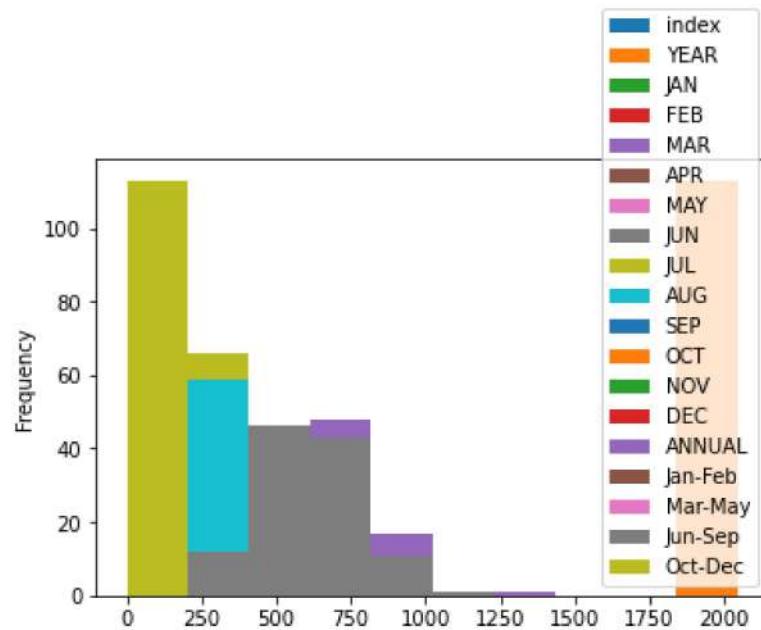
```
In [286]: EAST_RAJASTHAN.plot.box()
```

```
Out[286]: <AxesSubplot:>
```



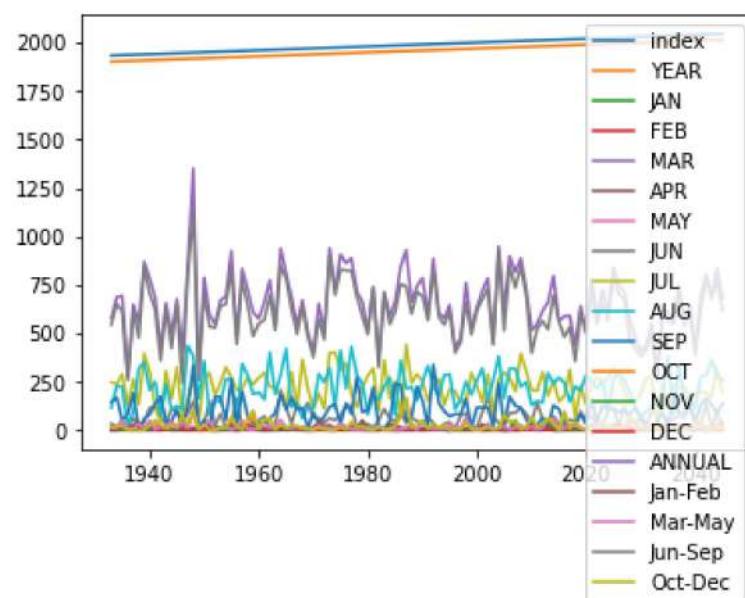
```
In [287]: EAST_RAJASTHAN.plot.hist()
```

```
Out[287]: <AxesSubplot:ylabel='Frequency'>
```



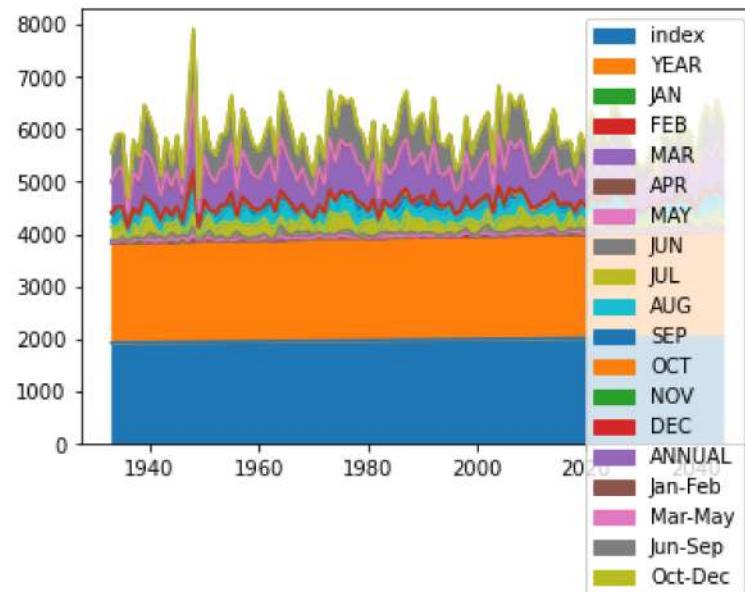
```
In [288]: EAST_RAJASTHAN.plot.line()
```

```
Out[288]: <AxesSubplot:>
```



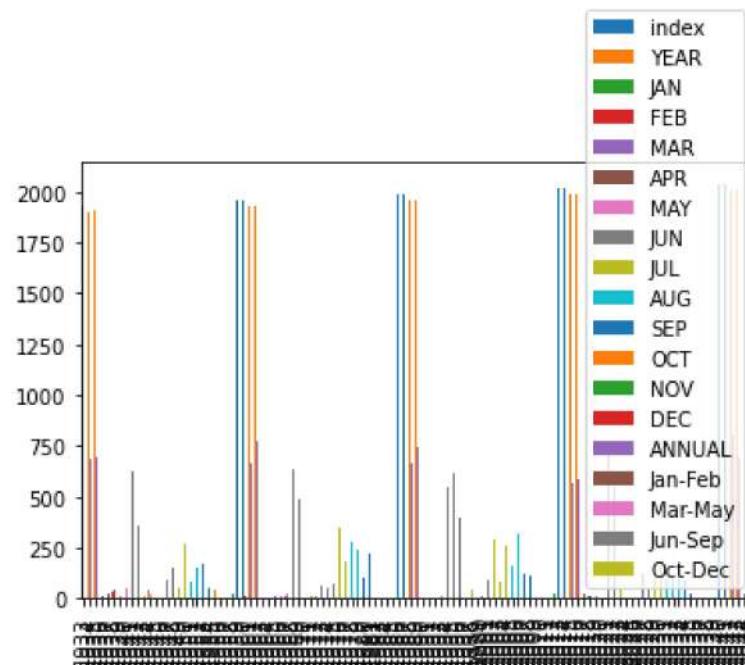
```
In [289]: EAST_RAJASTHAN.plot.area()
```

```
Out[289]: <AxesSubplot:>
```



```
In [290]: EAST_RAJASTHAN.plot.bar()
```

```
Out[290]: <AxesSubplot:>
```



WEST_MADHYA_PRADESH

In [291]: WEST_MADHYA_PRADESH=sd[2049:2162]
WEST_MADHYA_PRADESH

Out[291]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2049	2049	WEST MADHYA PRADESH	1903	5.3	0.0	0.0	0.0	22.3	50.6	304.9	261.1	250.2	55.1
2050	2050	WEST MADHYA PRADESH	1904	3.2	15.5	14.8	0.0	12.0	96.6	273.0	218.6	125.9	3.3
2051	2051	WEST MADHYA PRADESH	1905	3.5	4.4	1.1	0.8	3.0	36.1	326.3	137.6	183.5	0.3
2052	2052	WEST MADHYA PRADESH	1906	0.0	11.0	6.8	0.0	0.5	180.0	344.5	198.6	266.2	1.5
2053	2053	WEST MADHYA PRADESH	1907	5.2	25.1	0.6	12.3	2.8	48.7	202.2	328.5	17.3	0.0
...
2157	2157	WEST MADHYA PRADESH	2011	0.0	1.7	0.1	1.8	3.6	241.5	306.7	343.3	165.0	0.2
2158	2158	WEST MADHYA PRADESH	2012	6.2	0.0	0.0	0.9	3.1	48.2	439.2	341.2	194.3	2.1
2159	2159	WEST MADHYA PRADESH	2013	1.7	31.1	8.5	2.8	0.4	263.7	485.1	432.6	98.9	68.7
2160	2160	WEST MADHYA PRADESH	2014	25.6	34.4	4.6	1.4	1.4	30.6	337.4	211.0	192.6	7.0
2161	2161	WEST MADHYA PRADESH	2015	40.2	6.4	53.5	13.3	2.0	154.1	428.2	276.6	55.6	11.0

113 rows × 20 columns



In [292]: WEST_MADHYA_PRADESH.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 2049 to 2161
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         112 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      112 non-null    float64 
 16  Jan-Feb     112 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [293]: WEST_MADHYA_PRADESH.describe()

Out[293]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	112.000000	113.000000	113.000000	113.000000
mean	2105.000000	1959.000000	8.981416	6.293750	5.213274	2.375221	7.722124
std	32.76431	32.76431	11.180847	9.072106	9.012397	3.513711	10.479476
min	2049.000000	1903.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	2077.000000	1931.000000	0.900000	0.475000	0.200000	0.200000	1.300000
50%	2105.000000	1959.000000	4.800000	2.650000	2.000000	1.300000	3.500000
75%	2133.000000	1987.000000	13.700000	7.800000	6.500000	3.000000	10.200000
max	2161.000000	2015.000000	54.100000	40.500000	53.500000	24.800000	62.700000

```
In [294]: WEST_MADHYA_PRADESH.columns
```

```
Out[294]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [295]: WEST_MADHYA_PRADESH.dropna()
```

```
Out[295]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2049	2049	WEST MADHYA PRADESH	1903	5.3	0.0	0.0	0.0	22.3	50.6	304.9	261.1	250.2	55.1
2050	2050	WEST MADHYA PRADESH	1904	3.2	15.5	14.8	0.0	12.0	96.6	273.0	218.6	125.9	3.3
2051	2051	WEST MADHYA PRADESH	1905	3.5	4.4	1.1	0.8	3.0	36.1	326.3	137.6	183.5	0.3
2052	2052	WEST MADHYA PRADESH	1906	0.0	11.0	6.8	0.0	0.5	180.0	344.5	198.6	266.2	1.5
2053	2053	WEST MADHYA PRADESH	1907	5.2	25.1	0.6	12.3	2.8	48.7	202.2	328.5	17.3	0.0
...
2157	2157	WEST MADHYA PRADESH	2011	0.0	1.7	0.1	1.8	3.6	241.5	306.7	343.3	165.0	0.2
2158	2158	WEST MADHYA PRADESH	2012	6.2	0.0	0.0	0.9	3.1	48.2	439.2	341.2	194.3	2.1
2159	2159	WEST MADHYA PRADESH	2013	1.7	31.1	8.5	2.8	0.4	263.7	485.1	432.6	98.9	68.7
2160	2160	WEST MADHYA PRADESH	2014	25.6	34.4	4.6	1.4	1.4	30.6	337.4	211.0	192.6	7.0
2161	2161	WEST MADHYA PRADESH	2015	40.2	6.4	53.5	13.3	2.0	154.1	428.2	276.6	55.6	11.0

112 rows × 20 columns



```
In [296]: WEST_MADHYA_PRADESH.fillna(356)
```

Out[296]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2049	2049	WEST MADHYA PRADESH	1903	5.3	0.0	0.0	0.0	22.3	50.6	304.9	261.1	250.2	55.1
2050	2050	WEST MADHYA PRADESH	1904	3.2	15.5	14.8	0.0	12.0	96.6	273.0	218.6	125.9	3.3
2051	2051	WEST MADHYA PRADESH	1905	3.5	4.4	1.1	0.8	3.0	36.1	326.3	137.6	183.5	0.3
2052	2052	WEST MADHYA PRADESH	1906	0.0	11.0	6.8	0.0	0.5	180.0	344.5	198.6	266.2	1.5
2053	2053	WEST MADHYA PRADESH	1907	5.2	25.1	0.6	12.3	2.8	48.7	202.2	328.5	17.3	0.0
...
2157	2157	WEST MADHYA PRADESH	2011	0.0	1.7	0.1	1.8	3.6	241.5	306.7	343.3	165.0	0.2
2158	2158	WEST MADHYA PRADESH	2012	6.2	0.0	0.0	0.9	3.1	48.2	439.2	341.2	194.3	2.1
2159	2159	WEST MADHYA PRADESH	2013	1.7	31.1	8.5	2.8	0.4	263.7	485.1	432.6	98.9	68.7
2160	2160	WEST MADHYA PRADESH	2014	25.6	34.4	4.6	1.4	1.4	30.6	337.4	211.0	192.6	7.0
2161	2161	WEST MADHYA PRADESH	2015	40.2	6.4	53.5	13.3	2.0	154.1	428.2	276.6	55.6	11.0

113 rows × 20 columns



```
In [297]: np.shape(WEST_MADHYA_PRADESH)
```

Out[297]: (113, 20)

```
In [298]: np.size(WEST_MADHYA_PRADESH)
```

Out[298]: 2260

```
In [299]: WEST_MADHYA_PRADESH.isna()
```

Out[299]:

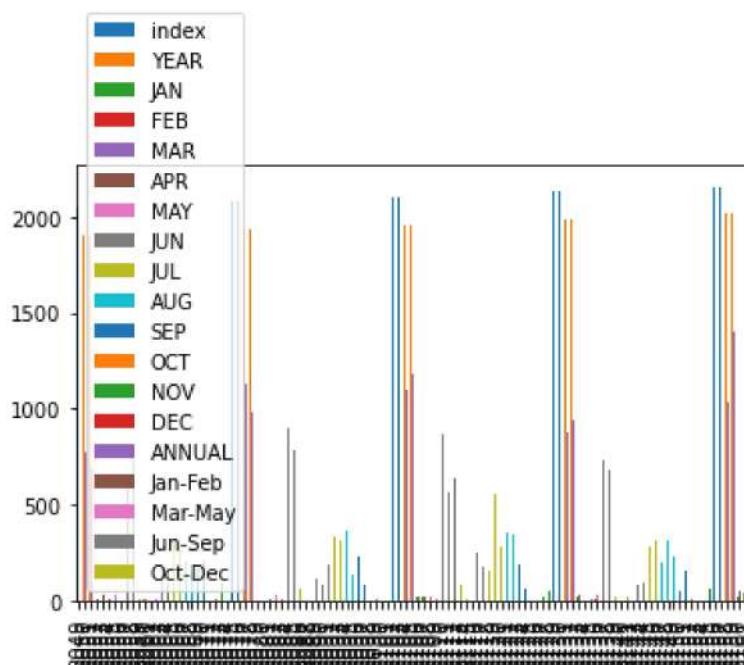
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2049	False		False										
2050	False		False										
2051	False		False										
2052	False		False										
2053	False		False										
...
2157	False		False										
2158	False		False										
2159	False		False										
2160	False		False										
2161	False		False										

113 rows × 20 columns



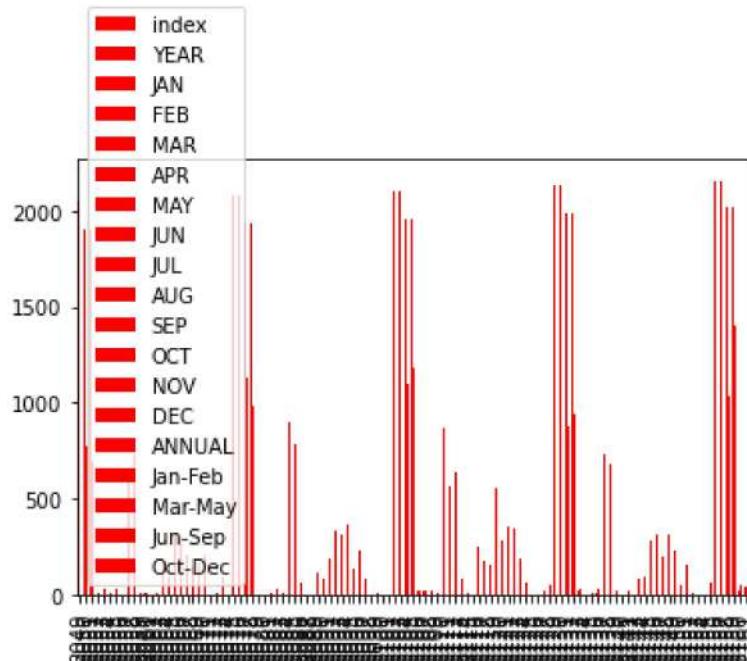
```
In [300]: WEST_MADHYA_PRADESH.plot.bar()
```

Out[300]: <AxesSubplot:>



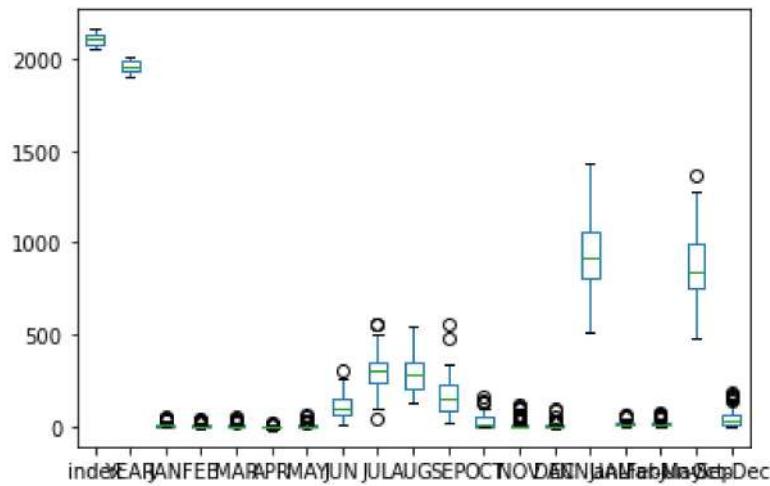
```
In [301]: WEST_MADHYA_PRADESH.plot.bar(color='r')
```

```
Out[301]: <AxesSubplot:>
```



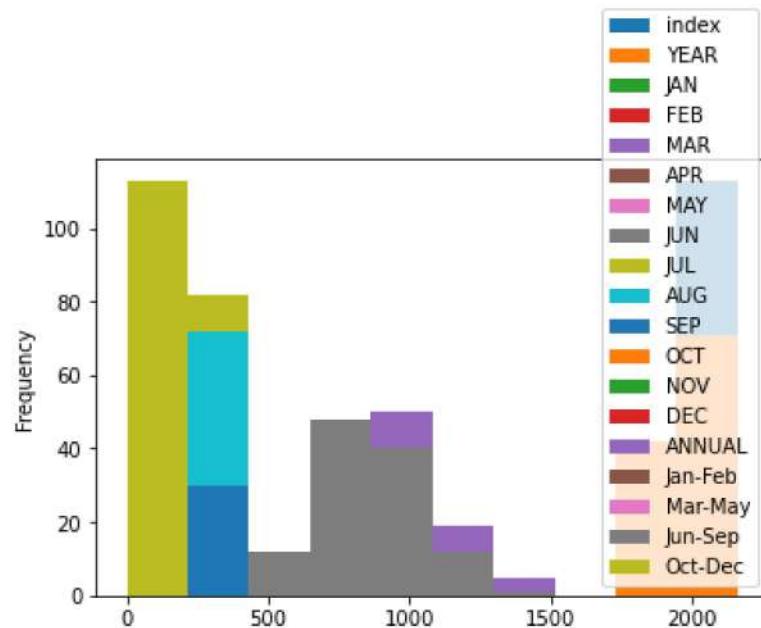
```
In [302]: WEST_MADHYA_PRADESH.plot.box()
```

```
Out[302]: <AxesSubplot:>
```



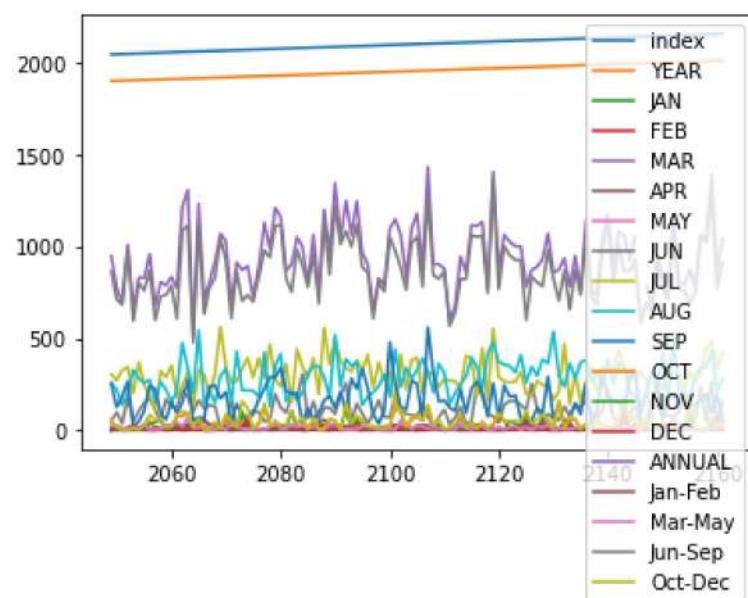
```
In [303]: WEST_MADHYA_PRADESH.plot.hist()
```

```
Out[303]: <AxesSubplot:ylabel='Frequency'>
```



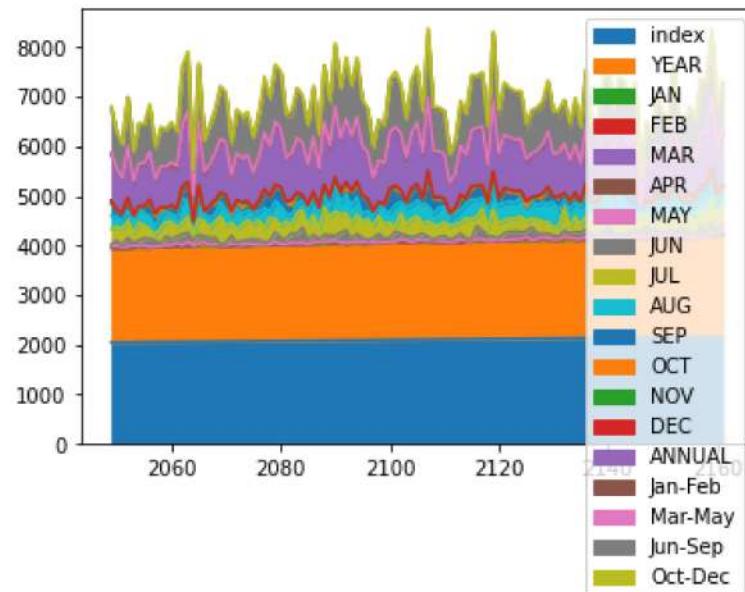
```
In [304]: WEST_MADHYA_PRADESH.plot.line()
```

```
Out[304]: <AxesSubplot:>
```



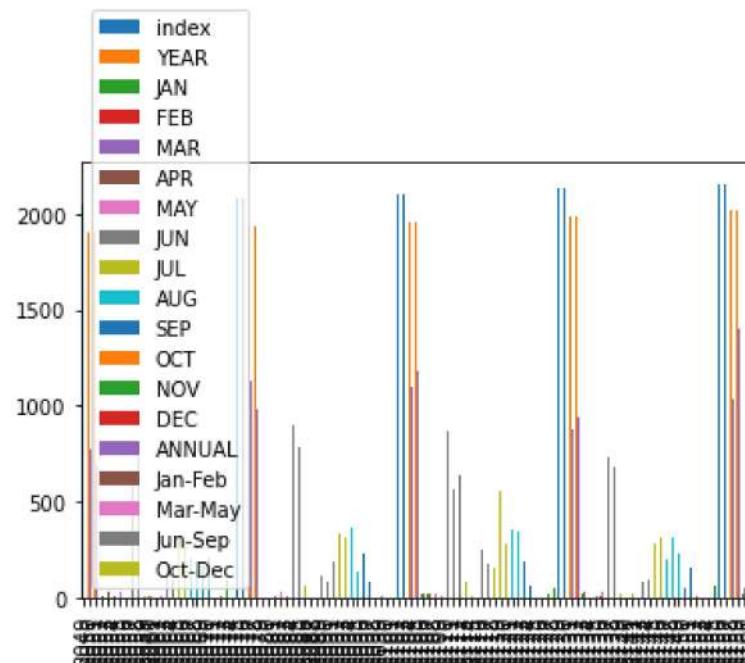
```
In [305]: WEST_MADHYA_PRADESH.plot.area()
```

```
Out[305]: <AxesSubplot:>
```



```
In [306]: WEST_MADHYA_PRADESH.plot.bar()
```

```
Out[306]: <AxesSubplot:>
```



EAST_MADHYA_PRADESH

In [307]: EAST_MADHYA_PRADESH=sd[2164:2276]
EAST_MADHYA_PRADESH

Out[307]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2164	2164	EAST MADHYA PRADESH	1903	5.6	2.9	0.3	0.9	37.5	67.5	261.4	366.7	257.4	177
2165	2165	EAST MADHYA PRADESH	1904	2.0	15.3	48.2	0.0	8.6	109.9	443.2	316.6	135.6	44
2166	2166	EAST MADHYA PRADESH	1905	15.9	8.0	14.3	12.3	10.2	34.4	292.4	243.3	250.9	2
2167	2167	EAST MADHYA PRADESH	1906	12.1	28.3	30.8	0.0	3.5	226.1	444.2	190.1	417.0	7
2168	2168	EAST MADHYA PRADESH	1907	7.0	103.1	4.5	30.5	5.1	90.9	221.9	512.3	20.1	0
...
2271	2271	EAST MADHYA PRADESH	2010	2.9	10.4	0.1	0.7	1.7	58.4	363.3	271.9	213.4	23
2272	2272	EAST MADHYA PRADESH	2011	0.6	1.9	0.3	7.1	4.7	332.5	323.6	326.9	276.5	1
2273	2273	EAST MADHYA PRADESH	2012	39.4	0.7	0.6	1.1	1.2	67.8	398.9	351.7	172.6	12
2274	2274	EAST MADHYA PRADESH	2013	2.0	43.4	14.1	9.5	0.3	311.9	456.2	480.8	78.0	124
2275	2275	EAST MADHYA PRADESH	2014	32.1	49.7	17.8	5.1	2.5	91.8	283.4	231.8	139.6	56

112 rows × 20 columns



In [308]: EAST_MADHYA_PRADESH.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 112 entries, 2164 to 2275
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       112 non-null    int64  
 1   SUBDIVISION 112 non-null    object  
 2   YEAR        112 non-null    int64  
 3   JAN         112 non-null    float64 
 4   FEB         112 non-null    float64 
 5   MAR         112 non-null    float64 
 6   APR         112 non-null    float64 
 7   MAY         112 non-null    float64 
 8   JUN         112 non-null    float64 
 9   JUL         112 non-null    float64 
 10  AUG         112 non-null    float64 
 11  SEP         112 non-null    float64 
 12  OCT         112 non-null    float64 
 13  NOV         112 non-null    float64 
 14  DEC         112 non-null    float64 
 15  ANNUAL      112 non-null    float64 
 16  Jan-Feb     112 non-null    float64 
 17  Mar-May     112 non-null    float64 
 18  Jun-Sep     112 non-null    float64 
 19  Oct-Dec     112 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.6+ KB
```

In [309]: EAST_MADHYA_PRADESH.describe()

Out[309]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000
mean	2219.500000	1958.500000	19.022321	18.676786	13.207143	7.023214	9.385714	14.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000	11.200000
std	32.475632	32.475632	22.376978	20.960705	16.590944	10.453647	12.285367	7.900000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000	10.200000
min	2164.000000	1903.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	2.000000	1.000000	2.000000	2.000000
25%	2191.750000	1930.750000	2.075000	3.475000	1.175000	1.275000	2.075000	4.000000	2.000000	2.000000	2.000000	2.000000	2.000000	2.000000	2.000000	4.000000	1.250000	8.000000	8.000000
50%	2219.500000	1958.500000	12.150000	11.400000	7.600000	3.100000	4.950000	11.000000	7.000000	7.000000	7.000000	7.000000	7.000000	7.000000	7.000000	11.000000	11.000000	11.000000	11.000000
75%	2247.250000	1986.250000	29.450000	27.250000	18.575000	8.150000	10.625000	19.000000	12.000000	12.000000	12.000000	12.000000	12.000000	12.000000	12.000000	19.000000	19.000000	19.000000	19.000000
max	2275.000000	2014.000000	120.700000	103.100000	87.300000	72.400000	74.200000	35.000000	25.000000	25.000000	25.000000	25.000000	25.000000	25.000000	25.000000	35.000000	25.000000	35.000000	35.000000

```
In [310]: EAST_MADHYA_PRADESH.columns
```

```
Out[310]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [311]: EAST_MADHYA_PRADESH.dropna()
```

```
Out[311]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2164	2164	EAST MADHYA PRADESH	1903	5.6	2.9	0.3	0.9	37.5	67.5	261.4	366.7	257.4	177
2165	2165	EAST MADHYA PRADESH	1904	2.0	15.3	48.2	0.0	8.6	109.9	443.2	316.6	135.6	44
2166	2166	EAST MADHYA PRADESH	1905	15.9	8.0	14.3	12.3	10.2	34.4	292.4	243.3	250.9	2
2167	2167	EAST MADHYA PRADESH	1906	12.1	28.3	30.8	0.0	3.5	226.1	444.2	190.1	417.0	7
2168	2168	EAST MADHYA PRADESH	1907	7.0	103.1	4.5	30.5	5.1	90.9	221.9	512.3	20.1	0
...
2271	2271	EAST MADHYA PRADESH	2010	2.9	10.4	0.1	0.7	1.7	58.4	363.3	271.9	213.4	23
2272	2272	EAST MADHYA PRADESH	2011	0.6	1.9	0.3	7.1	4.7	332.5	323.6	326.9	276.5	1
2273	2273	EAST MADHYA PRADESH	2012	39.4	0.7	0.6	1.1	1.2	67.8	398.9	351.7	172.6	12
2274	2274	EAST MADHYA PRADESH	2013	2.0	43.4	14.1	9.5	0.3	311.9	456.2	480.8	78.0	124
2275	2275	EAST MADHYA PRADESH	2014	32.1	49.7	17.8	5.1	2.5	91.8	283.4	231.8	139.6	56

112 rows × 20 columns



```
In [312]: EAST_MADHYA_PRADESH.fillna(356)
```

Out[312]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2164	2164	EAST MADHYA PRADESH	1903	5.6	2.9	0.3	0.9	37.5	67.5	261.4	366.7	257.4	177
2165	2165	EAST MADHYA PRADESH	1904	2.0	15.3	48.2	0.0	8.6	109.9	443.2	316.6	135.6	44
2166	2166	EAST MADHYA PRADESH	1905	15.9	8.0	14.3	12.3	10.2	34.4	292.4	243.3	250.9	2
2167	2167	EAST MADHYA PRADESH	1906	12.1	28.3	30.8	0.0	3.5	226.1	444.2	190.1	417.0	7
2168	2168	EAST MADHYA PRADESH	1907	7.0	103.1	4.5	30.5	5.1	90.9	221.9	512.3	20.1	0
...
2271	2271	EAST MADHYA PRADESH	2010	2.9	10.4	0.1	0.7	1.7	58.4	363.3	271.9	213.4	23
2272	2272	EAST MADHYA PRADESH	2011	0.6	1.9	0.3	7.1	4.7	332.5	323.6	326.9	276.5	1
2273	2273	EAST MADHYA PRADESH	2012	39.4	0.7	0.6	1.1	1.2	67.8	398.9	351.7	172.6	12
2274	2274	EAST MADHYA PRADESH	2013	2.0	43.4	14.1	9.5	0.3	311.9	456.2	480.8	78.0	124
2275	2275	EAST MADHYA PRADESH	2014	32.1	49.7	17.8	5.1	2.5	91.8	283.4	231.8	139.6	56

112 rows × 20 columns



```
In [313]: np.shape(EAST_MADHYA_PRADESH)
```

Out[313]: (112, 20)

```
In [314]: np.size(EAST_MADHYA_PRADESH)
```

Out[314]: 2240

```
In [315]: EAST_MADHYA_PRADESH.isna()
```

Out[315]:

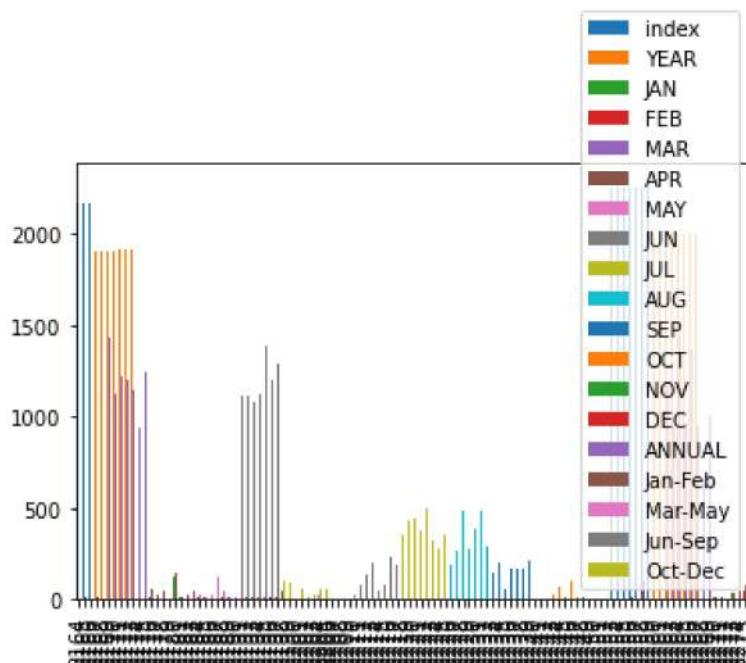
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2164	False		False										
2165	False		False										
2166	False		False										
2167	False		False										
2168	False		False										
...
2271	False		False										
2272	False		False										
2273	False		False										
2274	False		False										
2275	False		False										

112 rows × 20 columns



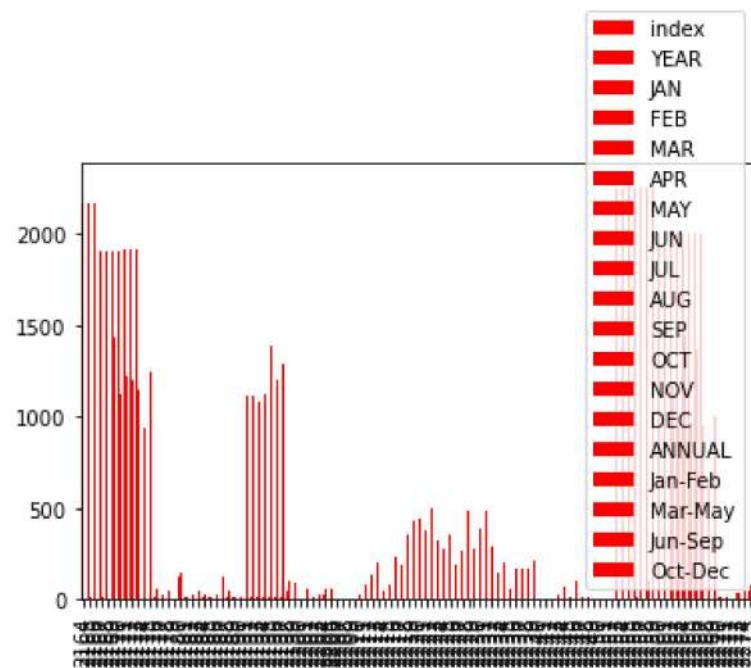
```
In [316]: EAST_MADHYA_PRADESH.plot.bar()
```

Out[316]: <AxesSubplot:>



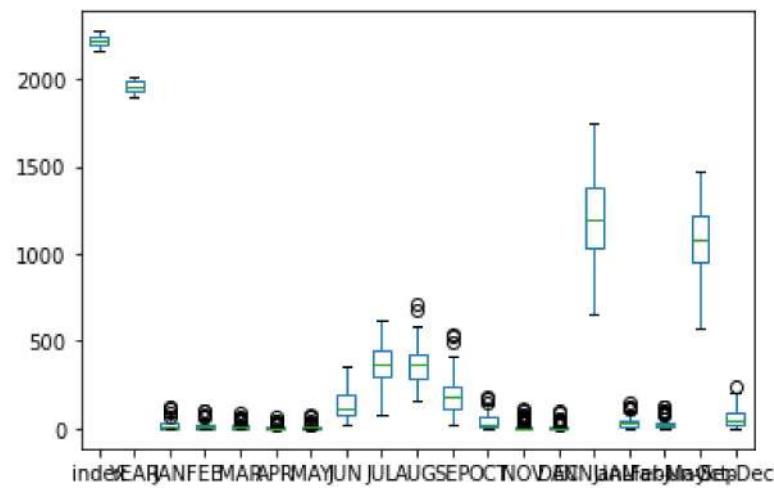
```
In [317]: EAST_MADHYA_PRADESH.plot.bar(color='r')
```

```
Out[317]: <AxesSubplot:>
```



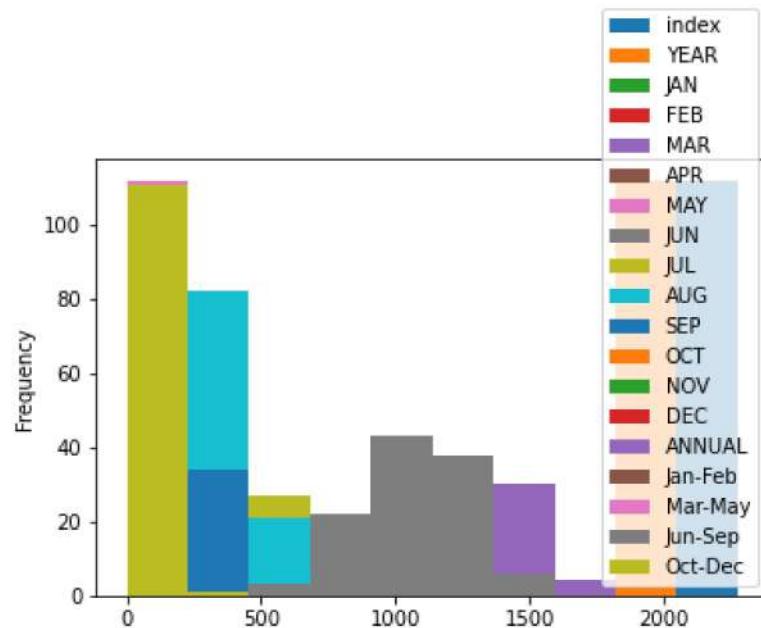
```
In [318]: EAST_MADHYA_PRADESH.plot.box()
```

```
Out[318]: <AxesSubplot:>
```



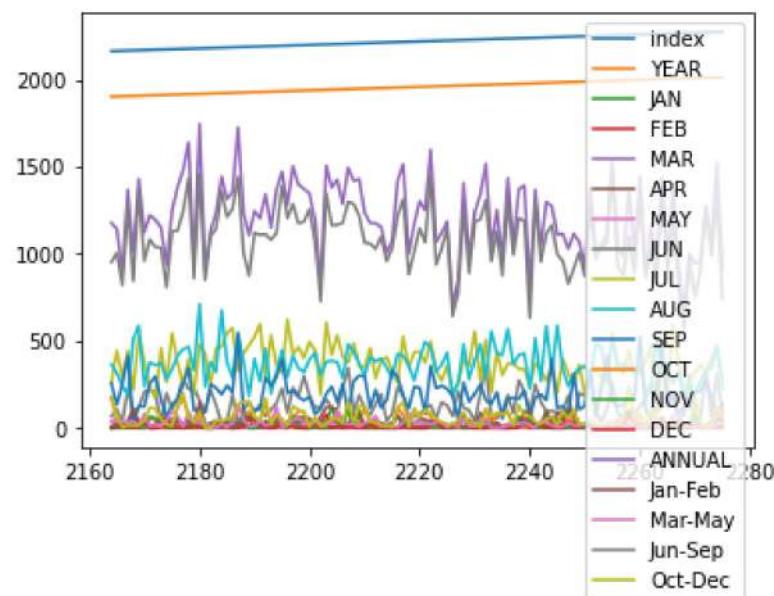
```
In [319]: EAST_MADHYA_PRADESH.plot.hist()
```

```
Out[319]: <AxesSubplot:ylabel='Frequency'>
```



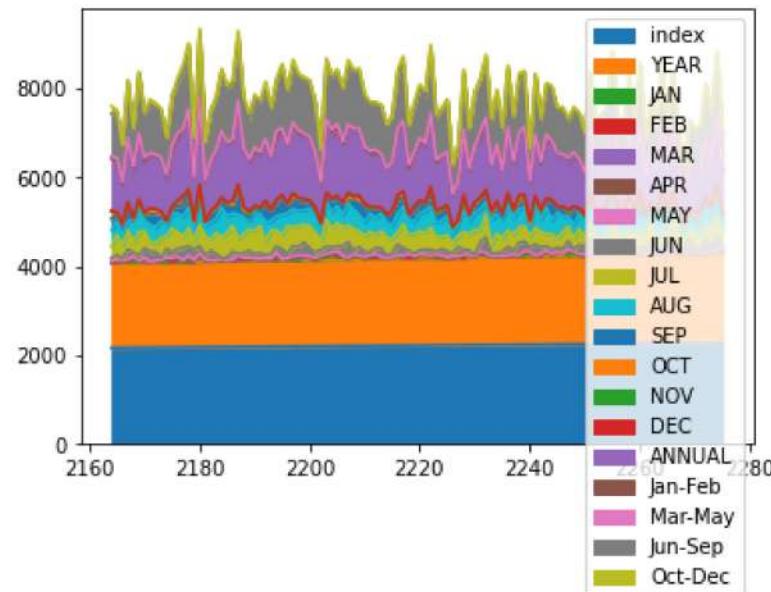
```
In [320]: EAST_MADHYA_PRADESH.plot.line()
```

```
Out[320]: <AxesSubplot:>
```



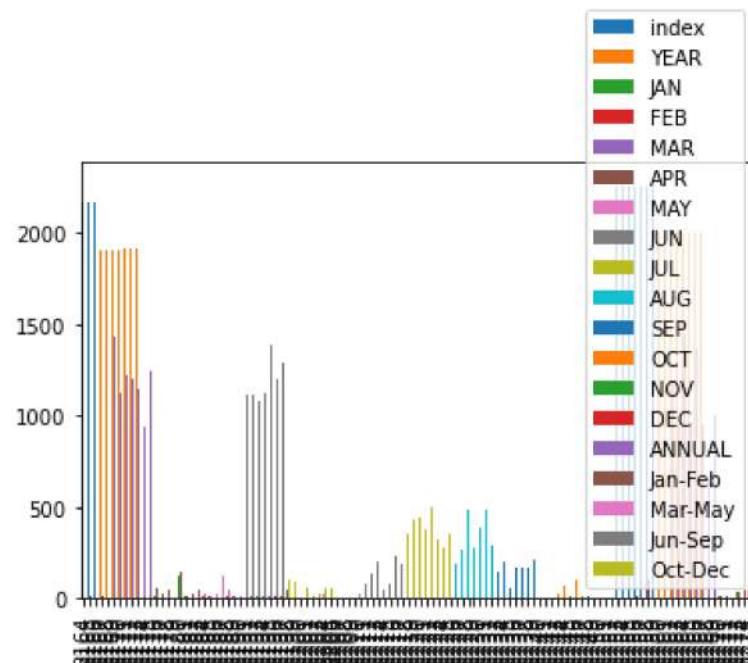
```
In [321]: EAST_MADHYA_PRADESH.plot.area()
```

```
Out[321]: <AxesSubplot:>
```



```
In [322]: EAST_MADHYA_PRADESH.plot.bar()
```

```
Out[322]: <AxesSubplot:>
```



GUJARAT REGION

In [323]: GUJARAT_REGION=sd[2279:2392]
GUJARAT_REGION

Out[323]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2279	2279	GUJARAT REGION	1903	0.3	0.1	1.4	0.0	12.3	30.1	452.9	202.0	183.2	5.4
2280	2280	GUJARAT REGION	1904	0.8	10.6	16.8	0.2	3.9	48.3	194.8	71.8	138.0	6.1
2281	2281	GUJARAT REGION	1905	0.1	0.7	1.1	0.3	0.0	20.1	668.3	37.9	81.3	1.4
2282	2282	GUJARAT REGION	1906	0.0	12.7	0.0	0.0	0.1	177.5	311.5	247.1	134.8	5.9
2283	2283	GUJARAT REGION	1907	0.3	14.6	0.2	2.1	0.4	72.4	325.0	564.4	17.5	0.0
...
2387	2387	GUJARAT REGION	2011	0.0	0.2	0.0	0.0	0.0	16.3	259.2	451.7	162.5	0.4
2388	2388	GUJARAT REGION	2012	0.1	0.0	0.0	0.0	0.0	34.4	178.2	230.3	263.8	7.1
2389	2389	GUJARAT REGION	2013	0.0	0.9	0.1	4.6	0.0	155.7	405.4	211.1	287.3	53.2
2390	2390	GUJARAT REGION	2014	5.7	0.1	0.2	1.0	1.3	11.6	307.5	138.6	235.1	3.3
2391	2391	GUJARAT REGION	2015	1.8	0.0	6.1	5.5	0.9	120.7	354.7	37.4	93.4	2.2

113 rows × 20 columns



In [324]: GUJARAT_REGION.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 2279 to 2391
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [325]: GUJARAT_REGION.describe()

Out[325]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	2335.000000	1959.000000	1.746018	1.212389	1.237168	1.116814	5.841593
std	32.76431	32.76431	4.795181	2.891772	4.824865	4.015214	14.097826
min	2279.000000	1903.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	2307.000000	1931.000000	0.000000	0.000000	0.000000	0.000000	0.100000
50%	2335.000000	1959.000000	0.100000	0.000000	0.000000	0.000000	0.900000
75%	2363.000000	1987.000000	1.400000	0.700000	0.200000	0.700000	4.000000
max	2391.000000	2015.000000	44.100000	14.600000	42.100000	40.400000	98.300000



```
In [326]: GUJARAT_REGION.columns
```

```
Out[326]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [327]: GUJARAT_REGION.dropna()
```

```
Out[327]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2279	2279		GUJARAT REGION	1903	0.3	0.1	1.4	0.0	12.3	30.1	452.9	202.0	183.2	5.4
2280	2280		GUJARAT REGION	1904	0.8	10.6	16.8	0.2	3.9	48.3	194.8	71.8	138.0	6.1
2281	2281		GUJARAT REGION	1905	0.1	0.7	1.1	0.3	0.0	20.1	668.3	37.9	81.3	1.4
2282	2282		GUJARAT REGION	1906	0.0	12.7	0.0	0.0	0.1	177.5	311.5	247.1	134.8	5.9
2283	2283		GUJARAT REGION	1907	0.3	14.6	0.2	2.1	0.4	72.4	325.0	564.4	17.5	0.0
...
2387	2387		GUJARAT REGION	2011	0.0	0.2	0.0	0.0	0.0	16.3	259.2	451.7	162.5	0.4
2388	2388		GUJARAT REGION	2012	0.1	0.0	0.0	0.0	0.0	34.4	178.2	230.3	263.8	7.1
2389	2389		GUJARAT REGION	2013	0.0	0.9	0.1	4.6	0.0	155.7	405.4	211.1	287.3	53.2
2390	2390		GUJARAT REGION	2014	5.7	0.1	0.2	1.0	1.3	11.6	307.5	138.6	235.1	3.3
2391	2391		GUJARAT REGION	2015	1.8	0.0	6.1	5.5	0.9	120.7	354.7	37.4	93.4	2.2

113 rows × 20 columns



```
In [328]: GUJARAT_REGION.fillna(356)
```

```
Out[328]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2279	2279	GUJARAT REGION	1903	0.3	0.1	1.4	0.0	12.3	30.1	452.9	202.0	183.2	5.4
2280	2280	GUJARAT REGION	1904	0.8	10.6	16.8	0.2	3.9	48.3	194.8	71.8	138.0	6.1
2281	2281	GUJARAT REGION	1905	0.1	0.7	1.1	0.3	0.0	20.1	668.3	37.9	81.3	1.4
2282	2282	GUJARAT REGION	1906	0.0	12.7	0.0	0.0	0.1	177.5	311.5	247.1	134.8	5.9
2283	2283	GUJARAT REGION	1907	0.3	14.6	0.2	2.1	0.4	72.4	325.0	564.4	17.5	0.0
...
2387	2387	GUJARAT REGION	2011	0.0	0.2	0.0	0.0	0.0	16.3	259.2	451.7	162.5	0.4
2388	2388	GUJARAT REGION	2012	0.1	0.0	0.0	0.0	0.0	34.4	178.2	230.3	263.8	7.1
2389	2389	GUJARAT REGION	2013	0.0	0.9	0.1	4.6	0.0	155.7	405.4	211.1	287.3	53.2
2390	2390	GUJARAT REGION	2014	5.7	0.1	0.2	1.0	1.3	11.6	307.5	138.6	235.1	3.3
2391	2391	GUJARAT REGION	2015	1.8	0.0	6.1	5.5	0.9	120.7	354.7	37.4	93.4	2.2

113 rows × 20 columns



```
In [329]: np.shape(GUJARAT_REGION)
```

```
Out[329]: (113, 20)
```

```
In [330]: np.size(GUJARAT_REGION)
```

```
Out[330]: 2260
```

```
In [331]: GUJARAT_REGION.isna()
```

Out[331]:

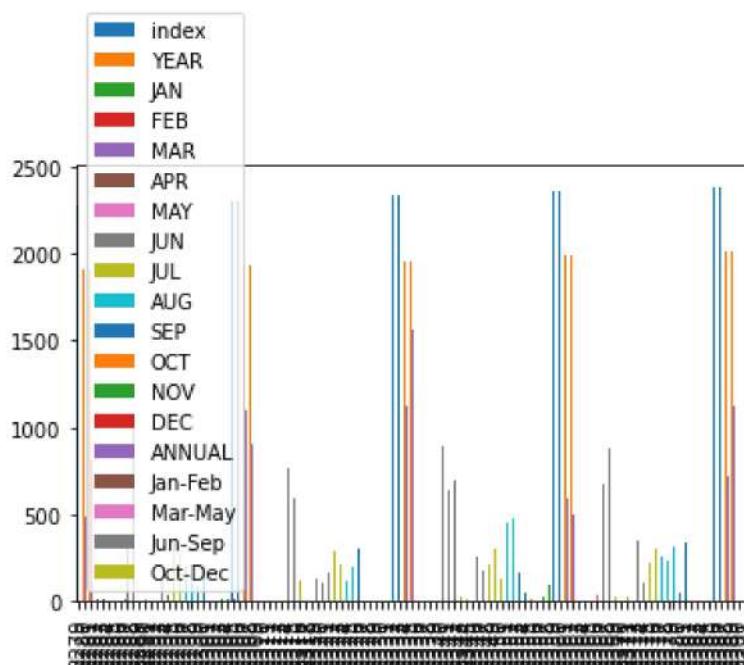
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2279	False		False										
2280	False		False										
2281	False		False										
2282	False		False										
2283	False		False										
...
2387	False		False										
2388	False		False										
2389	False		False										
2390	False		False										
2391	False		False										

113 rows × 20 columns

◀ ▶

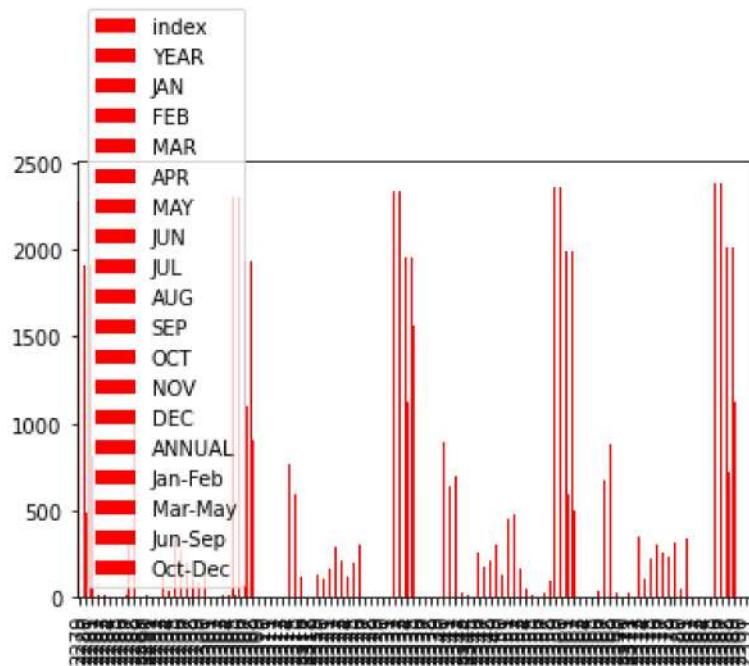
```
In [332]: GUJARAT_REGION.plot.bar()
```

Out[332]: <AxesSubplot:>



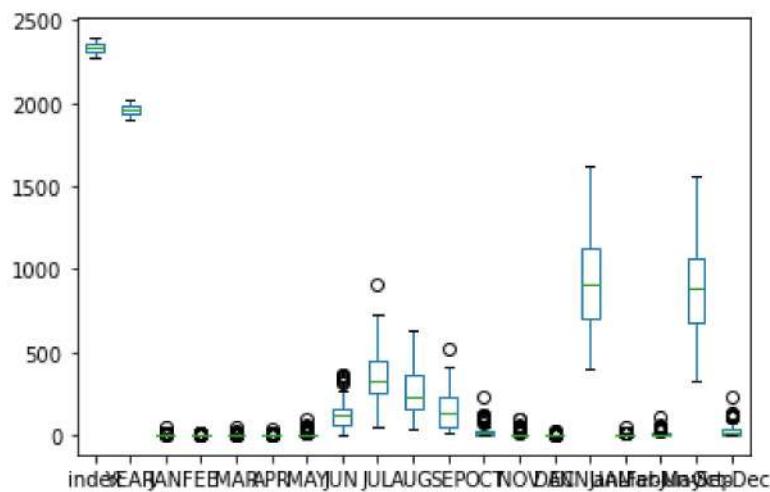
```
In [333]: GUJARAT_REGION.plot.bar(color='r')
```

```
Out[333]: <AxesSubplot:>
```



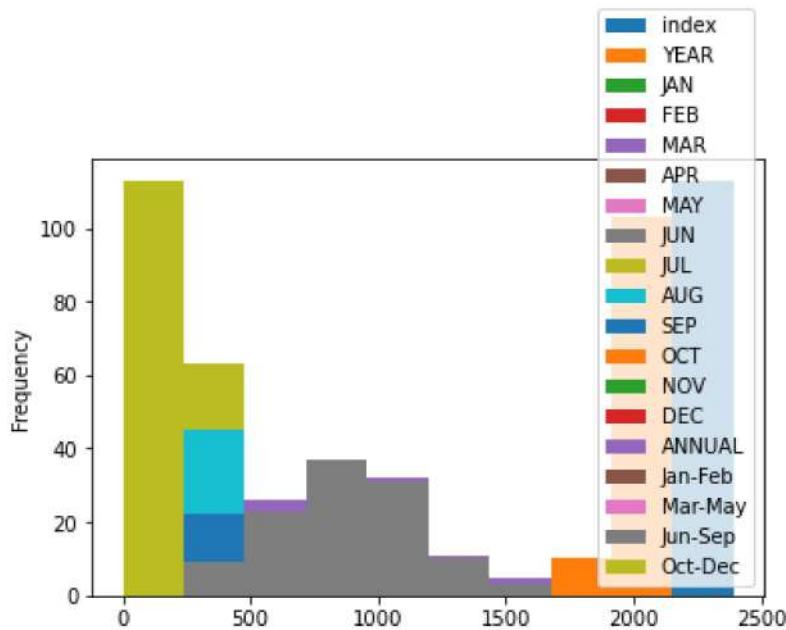
```
In [334]: GUJARAT_REGION.plot.box()
```

```
Out[334]: <AxesSubplot:>
```



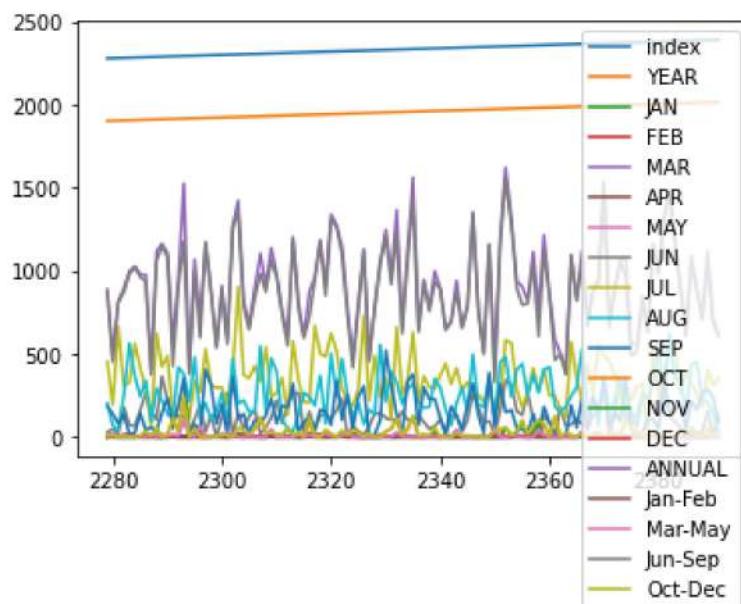
```
In [335]: GUJARAT_REGION.plot.hist()
```

```
Out[335]: <AxesSubplot:ylabel='Frequency'>
```



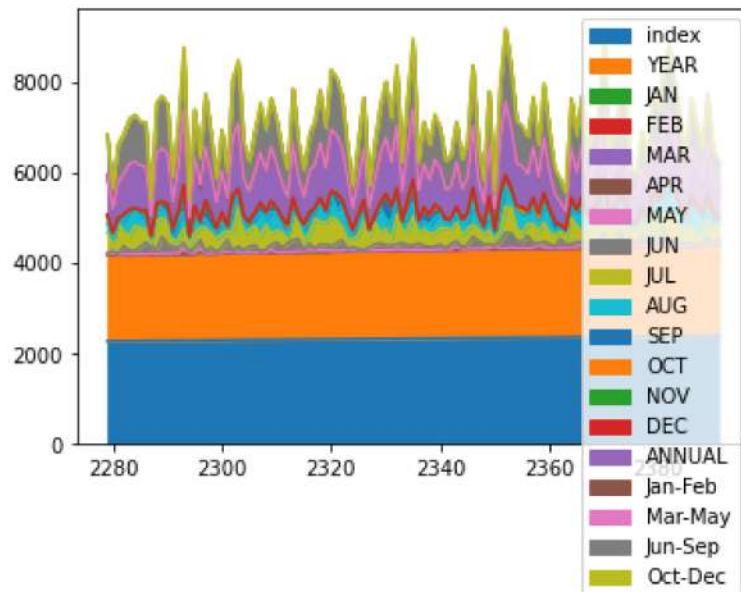
```
In [336]: GUJARAT_REGION.plot.line()
```

```
Out[336]: <AxesSubplot:>
```



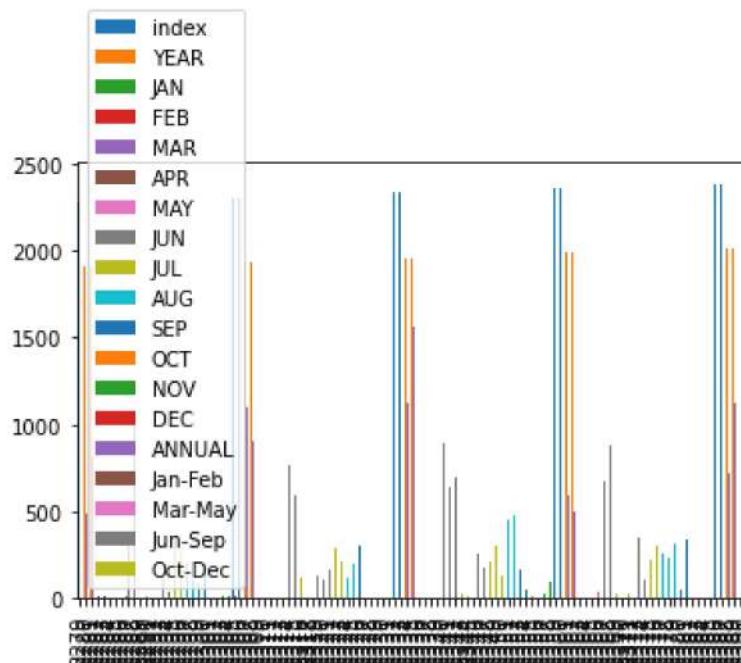
In [337]: GUJARAT_REGION.plot.area()

Out[337]: <AxesSubplot:>



In [338]: GUJARAT_REGION.plot.bar()

Out[338]: <AxesSubplot:>



SAURASHTRA & KUTCH

In [339]: SAURASHTRA_KUTCH=sd[2392:2507]
SAURASHTRA_KUTCH

Out[339]:

	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	11.1
2395	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.3
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	3.3

115 rows × 20 columns



In [340]: SAURASHTRA_KUTCH.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 115 entries, 2392 to 2506
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       115 non-null    int64  
 1   SUBDIVISION 115 non-null    object  
 2   YEAR        115 non-null    int64  
 3   JAN         115 non-null    float64 
 4   FEB         115 non-null    float64 
 5   MAR         115 non-null    float64 
 6   APR         115 non-null    float64 
 7   MAY         115 non-null    float64 
 8   JUN         115 non-null    float64 
 9   JUL         115 non-null    float64 
 10  AUG         115 non-null    float64 
 11  SEP         115 non-null    float64 
 12  OCT         115 non-null    float64 
 13  NOV         115 non-null    float64 
 14  DEC         115 non-null    float64 
 15  ANNUAL      115 non-null    float64 
 16  Jan-Feb     115 non-null    float64 
 17  Mar-May     115 non-null    float64 
 18  Jun-Sep     115 non-null    float64 
 19  Oct-Dec     115 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 18.1+ KB
```

In [341]: SAURASHTRA_KUTCH.describe()

Out[341]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	115.000000	
mean	2449.000000	1958.000000	1.139130	1.615652	1.296522	1.183478	4.662609	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	74.000000	
std	33.341666	33.341666	2.374709	4.270576	5.691544	6.158847	16.587231	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	63.000000	
min	2392.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	
25%	2420.500000	1929.500000	0.000000	0.000000	0.000000	0.000000	0.000000	12.500000	28.200000	46.200000	64.400000	131.900000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	
50%	2449.000000	1958.000000	0.200000	0.000000	0.000000	0.000000	0.000000	12.500000	28.200000	46.200000	64.400000	131.900000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	
75%	2477.500000	1986.500000	1.000000	0.550000	0.400000	0.500000	2.700000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	
max	2506.000000	2015.000000	12.500000	28.200000	46.200000	64.400000	131.900000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	321.000000	



```
In [342]: SAURASHTRA_KUTCH.columns
```

```
Out[342]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [343]: SAURASHTRA_KUTCH.dropna()
```

```
Out[343]:
```

	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	11.1
2395	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.3
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	3.3

115 rows × 20 columns

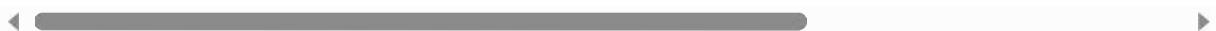


```
In [344]: SAURASHTRA_KUTCH.fillna(356)
```

Out[344]:

	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	11.1
2395	2395	SAURASHTRA & KUTCH	1904	1.4	5.8	17.5	0.0	0.0	9.5	111.2	9.4	28.9	0.3
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	3.3

115 rows × 20 columns



```
In [345]: np.shape(SAURASHTRA_KUTCH)
```

Out[345]: (115, 20)

```
In [346]: np.size(SAURASHTRA_KUTCH)
```

Out[346]: 2300

```
In [347]: SAURASHTRA_KUTCH.isna()
```

Out[347]:

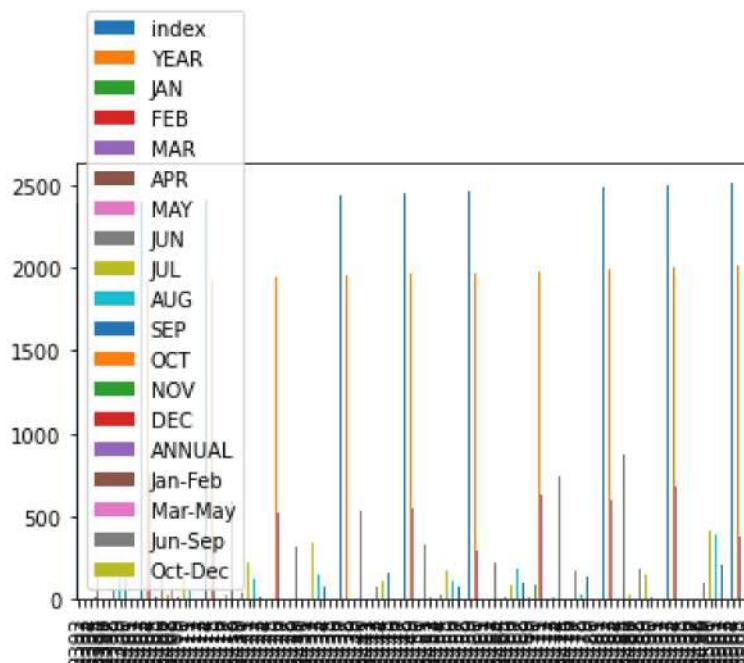
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2392	False		False										
2393	False		False										
2394	False		False										
2395	False		False										
2396	False		False										
...
2502	False		False										
2503	False		False										
2504	False		False										
2505	False		False										
2506	False		False										

115 rows × 20 columns



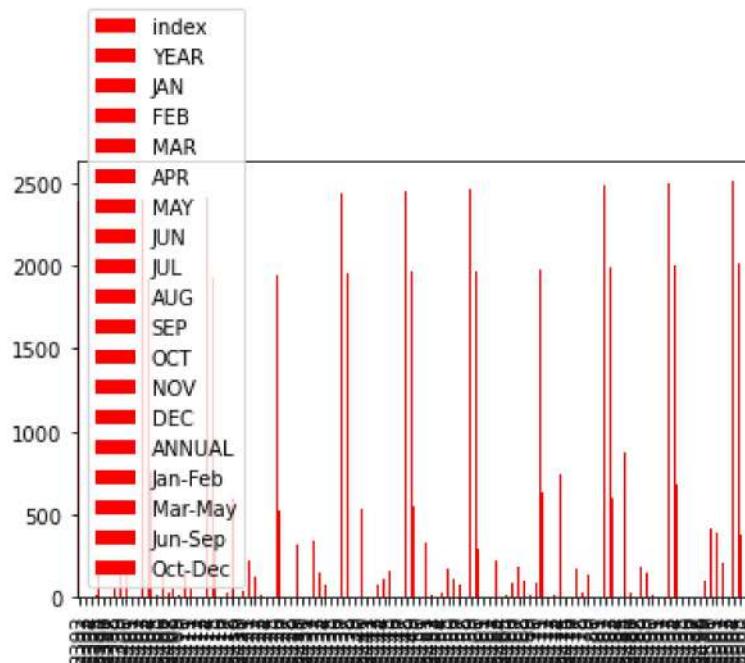
```
In [348]: SAURASHTRA_KUTCH.plot.bar()
```

Out[348]: <AxesSubplot:>



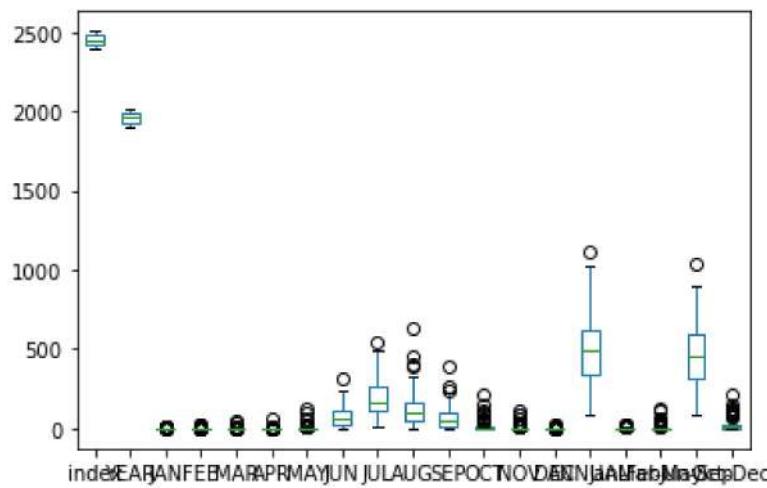
```
In [349]: SAURASHTRA_KUTCH.plot.bar(color='r')
```

```
Out[349]: <AxesSubplot:>
```



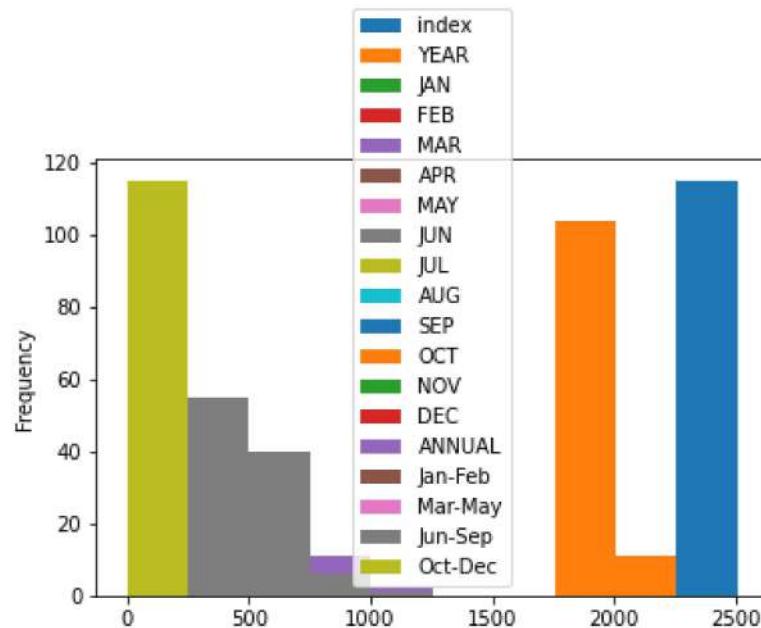
```
In [350]: SAURASHTRA_KUTCH.plot.box()
```

```
Out[350]: <AxesSubplot:>
```



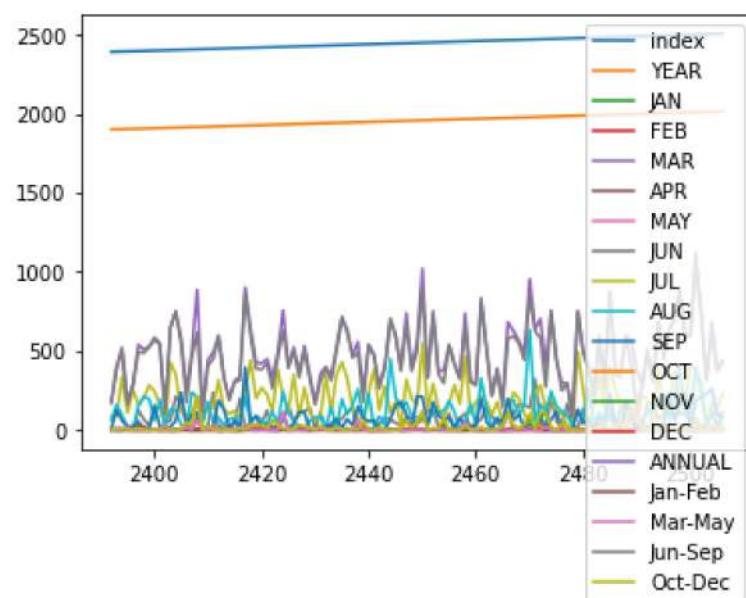
```
In [351]: SAURASHTRA_KUTCH.plot.hist()
```

```
Out[351]: <AxesSubplot:ylabel='Frequency'>
```



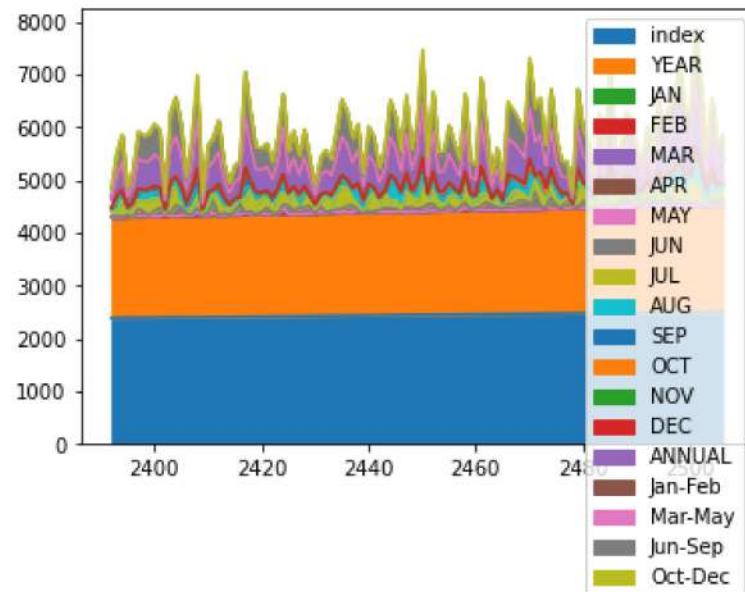
```
In [352]: SAURASHTRA_KUTCH.plot.line()
```

```
Out[352]: <AxesSubplot:>
```



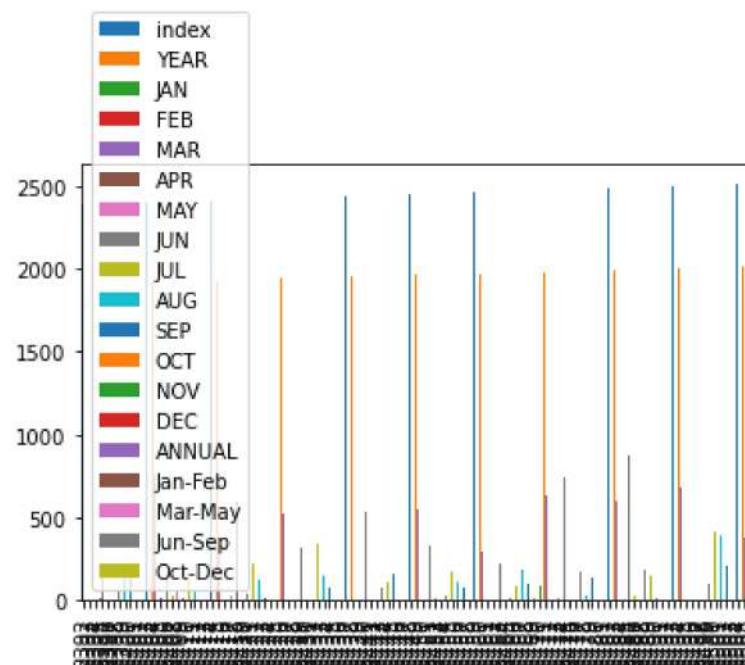
```
In [353]: SAURASHTRA_KUTCH.plot.area()
```

```
Out[353]: <AxesSubplot:>
```



```
In [354]: SAURASHTRA_KUTCH.plot.bar()
```

```
Out[354]: <AxesSubplot:>
```



KONKAN_GOA

```
In [355]: KONKAN_GOA=sd[2509:2621]  
KONKAN_GOA
```

Out[355]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2509	2509	KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	142.1	10.1	1.1
2510	2510	KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	9.9	1.1	1.1
2511	2511	KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8.8	1.1	1.1
2512	2512	KONKAN & GOA	1906	5.0	0.9	0.0	0.0	2.9	547.4	1090.9	506.7	222.5	11.1	1.1	1.1
2513	2513	KONKAN & GOA	1907	1.7	1.0	0.0	20.1	0.0	583.1	1170.9	811.5	164.0	1.1	1.1	1.1
...
2616	2616	KONKAN & GOA	2010	2.7	0.0	0.0	1.5	8.2	680.8	1405.3	850.0	531.3	19.1	1.1	1.1
2617	2617	KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12.1	1.1	1.1
2618	2618	KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	11.1	1.1	1.1
2619	2619	KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14.1	1.1	1.1
2620	2620	KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9.9	1.1	1.1

112 rows × 20 columns



In [356]: KONKAN_GOA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 112 entries, 2509 to 2620
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       112 non-null    int64  
 1   SUBDIVISION 112 non-null    object  
 2   YEAR        112 non-null    int64  
 3   JAN         112 non-null    float64 
 4   FEB         112 non-null    float64 
 5   MAR         112 non-null    float64 
 6   APR         112 non-null    float64 
 7   MAY         112 non-null    float64 
 8   JUN         112 non-null    float64 
 9   JUL         112 non-null    float64 
 10  AUG         112 non-null    float64 
 11  SEP         112 non-null    float64 
 12  OCT         112 non-null    float64 
 13  NOV         112 non-null    float64 
 14  DEC         112 non-null    float64 
 15  ANNUAL      112 non-null    float64 
 16  Jan-Feb     112 non-null    float64 
 17  Mar-May     112 non-null    float64 
 18  Jun-Sep     112 non-null    float64 
 19  Oct-Dec     112 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.6+ KB
```

In [357]: KONKAN_GOA.describe()

Out[357]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	112.000000	11
mean	2564.500000	1958.500000	1.219643	0.560714	1.079464	4.025893	34.066964	68
std	32.475632	32.475632	3.911103	2.073747	3.427266	8.718271	59.004607	19
min	2509.000000	1903.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23
25%	2536.750000	1930.750000	0.000000	0.000000	0.000000	0.300000	2.825000	55
50%	2564.500000	1958.500000	0.000000	0.000000	0.050000	1.250000	9.650000	70
75%	2592.250000	1986.250000	0.350000	0.100000	0.325000	4.150000	31.300000	80
max	2620.000000	2014.000000	31.800000	18.400000	31.500000	67.300000	345.400000	111



```
In [358]: KONKAN_GOA.columns
```

```
Out[358]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [359]: KONKAN_GOA.dropna()
```

```
Out[359]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2509	2509		KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	14
2510	2510		KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	8
2511	2511		KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8
2512	2512		KONKAN & GOA	1906	5.0	0.9	0.0	0.0	2.9	547.4	1090.9	506.7	222.5	8
2513	2513		KONKAN & GOA	1907	1.7	1.0	0.0	20.1	0.0	583.1	1170.9	811.5	164.0	8
...
2616	2616		KONKAN & GOA	2010	2.7	0.0	0.0	1.5	8.2	680.8	1405.3	850.0	531.3	19
2617	2617		KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12
2618	2618		KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	11
2619	2619		KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14
2620	2620		KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9

112 rows × 20 columns



```
In [360]: KONKAN_GOA.fillna(356)
```

```
Out[360]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2509	2509	KONKAN & GOA	1903	0.0	0.0	0.1	0.0	201.1	470.5	1298.6	673.9	285.1	14
2510	2510	KONKAN & GOA	1904	0.0	0.1	6.6	6.3	4.6	975.8	771.7	321.3	217.0	8
2511	2511	KONKAN & GOA	1905	0.1	0.1	0.0	0.4	8.6	293.7	770.6	305.5	208.3	8
2512	2512	KONKAN & GOA	1906	5.0	0.9	0.0	0.0	2.9	547.4	1090.9	506.7	222.5	10
2513	2513	KONKAN & GOA	1907	1.7	1.0	0.0	20.1	0.0	583.1	1170.9	811.5	164.0	10
...
2616	2616	KONKAN & GOA	2010	2.7	0.0	0.0	1.5	8.2	680.8	1405.3	850.0	531.3	18
2617	2617	KONKAN & GOA	2011	0.0	0.0	0.0	3.4	1.1	857.0	1384.1	987.9	468.3	12
2618	2618	KONKAN & GOA	2012	0.0	0.0	0.0	0.6	1.1	633.0	928.5	762.5	515.3	11
2619	2619	KONKAN & GOA	2013	1.8	5.4	0.1	0.1	18.5	1028.3	1478.5	497.6	340.7	14
2620	2620	KONKAN & GOA	2014	1.3	5.3	1.8	0.7	21.3	238.2	1293.2	658.0	419.5	9

112 rows × 20 columns



```
In [361]: np.shape(KONKAN_GOA)
```

```
Out[361]: (112, 20)
```

```
In [362]: np.size(KONKAN_GOA)
```

```
Out[362]: 2240
```

```
In [363]: KONKAN_GOA.isna()
```

Out[363]:

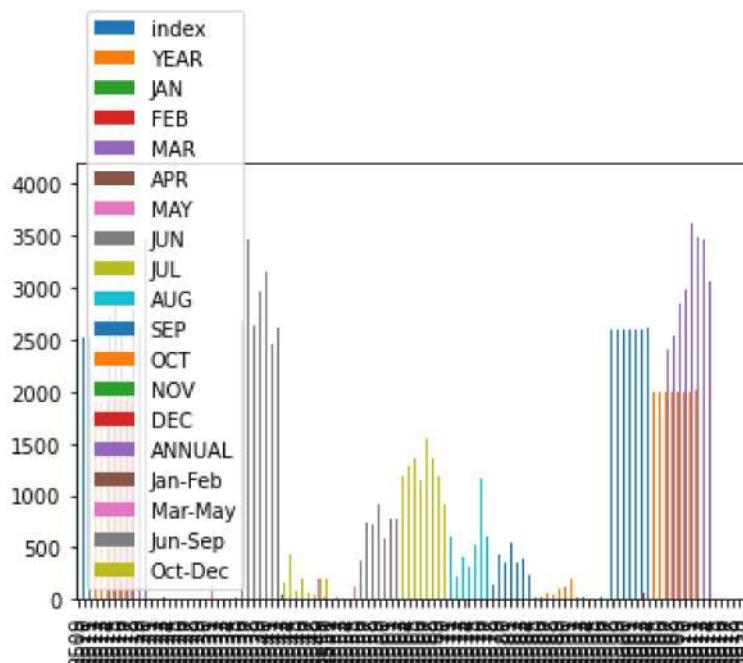
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2509	False		False										
2510	False		False										
2511	False		False										
2512	False		False										
2513	False		False										
...
2616	False		False										
2617	False		False										
2618	False		False										
2619	False		False										
2620	False		False										

112 rows × 20 columns



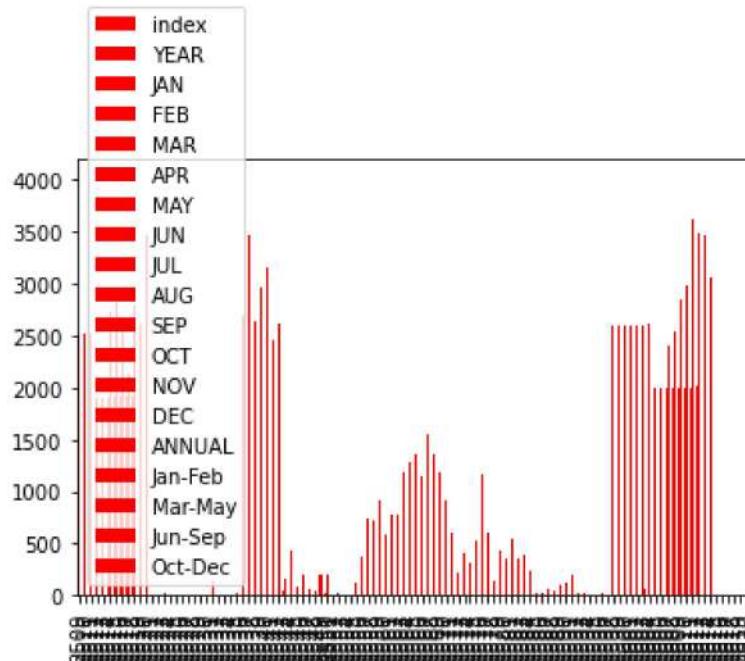
```
In [364]: KONKAN_GOA.plot.bar()
```

Out[364]: <AxesSubplot:>



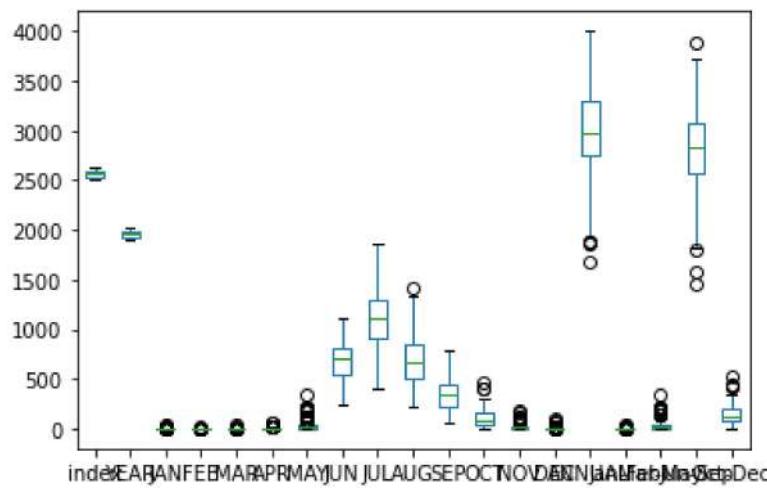
```
In [365]: KONKAN_GOA.plot.bar(color='r')
```

```
Out[365]: <AxesSubplot:>
```



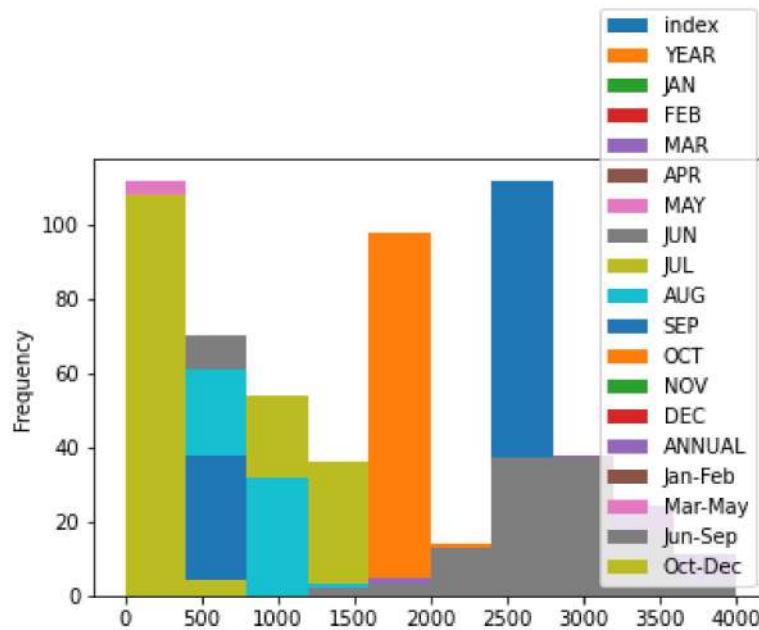
```
In [366]: KONKAN_GOA.plot.box()
```

```
Out[366]: <AxesSubplot:>
```



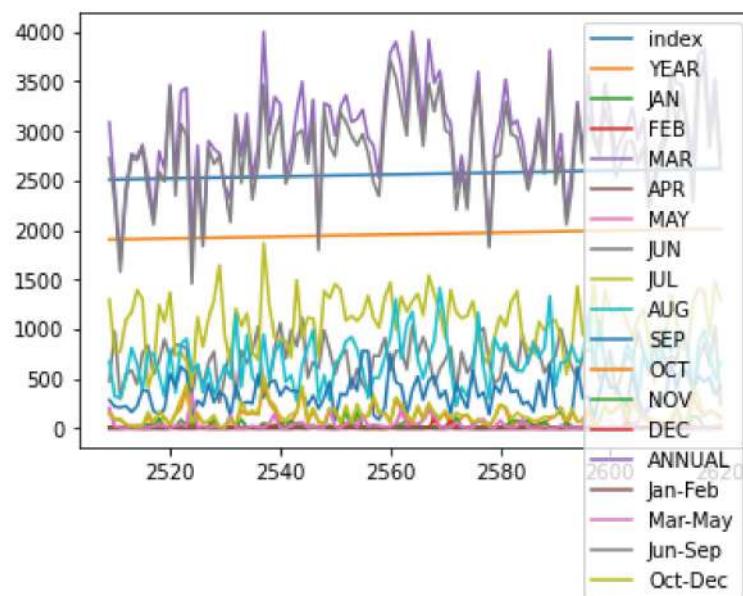
```
In [367]: KONKAN_GOA.plot.hist()
```

```
Out[367]: <AxesSubplot:ylabel='Frequency'>
```



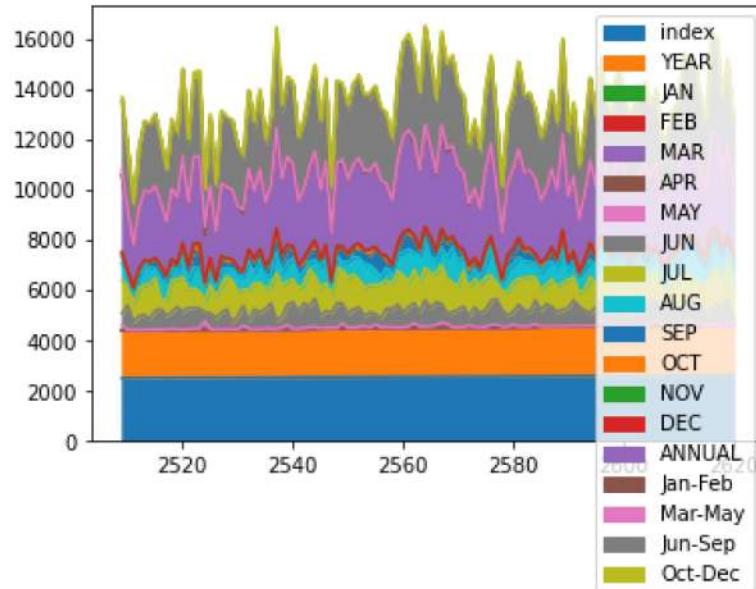
```
In [368]: KONKAN_GOA.plot.line()
```

```
Out[368]: <AxesSubplot:>
```



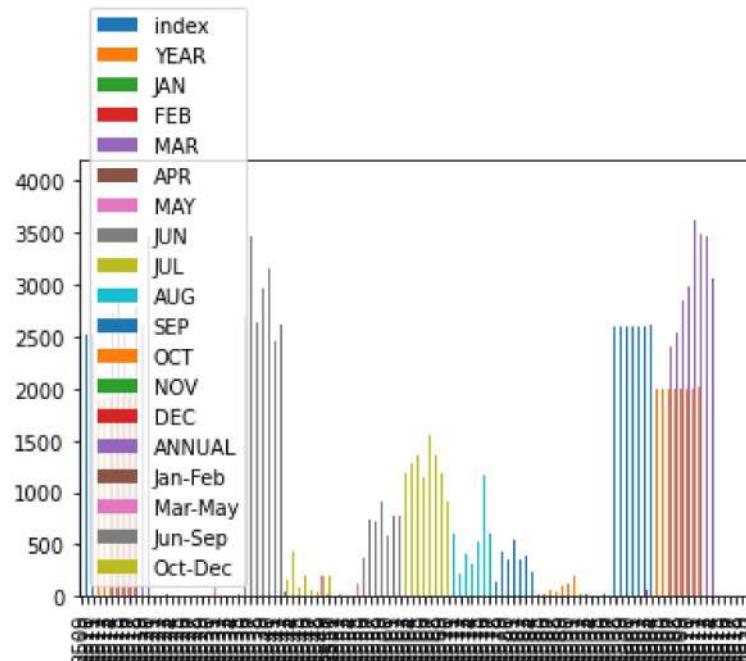
```
In [369]: KONKAN_GOA.plot.area()
```

```
Out[369]: <AxesSubplot:>
```



```
In [370]: KONKAN_GOA.plot.bar()
```

```
Out[370]: <AxesSubplot:>
```



MADHYA_MAHARASHTRA

```
In [371]: MADHYA_MAHARASHTRA=sd[2622:2736]  
MADHYA_MAHARASHTRA
```

Out[371]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2622	2622	MADHYA MAHARASHTRA	1901	18.8	0.6	7.7	36.6	30.4	107.7	215.9	194.1	83.7	68	50	38
2623	2623	MADHYA MAHARASHTRA	1902	7.8	0.0	0.1	5.0	9.8	102.6	210.9	114.5	169.5	60	50	38
2624	2624	MADHYA MAHARASHTRA	1903	7.6	0.0	0.0	3.2	77.2	86.3	281.8	155.5	142.3	74	50	38
2625	2625	MADHYA MAHARASHTRA	1904	0.4	4.7	1.7	3.0	18.7	114.6	126.5	59.5	183.0	91	50	38
2626	2626	MADHYA MAHARASHTRA	1905	0.0	1.2	0.0	2.3	23.6	65.0	252.8	79.0	52.6	52	50	38
...
2731	2731	MADHYA MAHARASHTRA	2010	2.9	0.1	0.9	2.3	5.4	185.6	280.9	233.2	165.6	77	50	38
2732	2732	MADHYA MAHARASHTRA	2011	0.0	0.3	0.3	5.0	2.9	133.3	261.4	238.1	148.4	62	50	38
2733	2733	MADHYA MAHARASHTRA	2012	0.0	0.0	0.0	3.0	1.4	67.9	203.0	187.8	129.5	95	50	38
2734	2734	MADHYA MAHARASHTRA	2013	0.1	5.3	0.8	5.7	6.0	212.4	311.8	147.0	210.3	57	50	38
2735	2735	MADHYA MAHARASHTRA	2014	3.1	6.2	24.4	7.5	29.8	44.0	277.9	240.3	120.4	38	50	38

114 rows × 20 columns



```
In [372]: MADHYA_MAHARASHTRA.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 2622 to 2735
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL     114 non-null    float64 
 16  Jan-Feb    114 non-null    float64 
 17  Mar-May    114 non-null    float64 
 18  Jun-Sep    114 non-null    float64 
 19  Oct-Dec    114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

```
In [373]: MADHYA_MAHARASHTRA.describe()
```

Out[373]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	2678.500000	1957.500000	3.069298	1.473684	3.266667	9.142982	22.930702
std	33.052988	33.052988	6.694260	2.927473	5.371173	9.443413	22.466432
min	2622.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.300000
25%	2650.250000	1929.250000	0.000000	0.000000	0.200000	3.200000	7.225000
50%	2678.500000	1957.500000	0.650000	0.200000	1.450000	6.250000	15.150000
75%	2706.750000	1985.750000	2.600000	1.625000	4.100000	12.150000	33.050000
max	2735.000000	2014.000000	41.500000	20.000000	32.700000	54.500000	104.200000

```
In [374]: MADHYA_MAHARASHTRA.columns
```

```
Out[374]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [375]: MADHYA_MAHARASHTRA.dropna()
```

```
Out[375]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2622	2622	MADHYA MAHARASHTRA	1901	18.8	0.6	7.7	36.6	30.4	107.7	215.9	194.1	83.7	68
2623	2623	MADHYA MAHARASHTRA	1902	7.8	0.0	0.1	5.0	9.8	102.6	210.9	114.5	169.5	60
2624	2624	MADHYA MAHARASHTRA	1903	7.6	0.0	0.0	3.2	77.2	86.3	281.8	155.5	142.3	74
2625	2625	MADHYA MAHARASHTRA	1904	0.4	4.7	1.7	3.0	18.7	114.6	126.5	59.5	183.0	91
2626	2626	MADHYA MAHARASHTRA	1905	0.0	1.2	0.0	2.3	23.6	65.0	252.8	79.0	52.6	52
...
2731	2731	MADHYA MAHARASHTRA	2010	2.9	0.1	0.9	2.3	5.4	185.6	280.9	233.2	165.6	77
2732	2732	MADHYA MAHARASHTRA	2011	0.0	0.3	0.3	5.0	2.9	133.3	261.4	238.1	148.4	62
2733	2733	MADHYA MAHARASHTRA	2012	0.0	0.0	0.0	3.0	1.4	67.9	203.0	187.8	129.5	95
2734	2734	MADHYA MAHARASHTRA	2013	0.1	5.3	0.8	5.7	6.0	212.4	311.8	147.0	210.3	57
2735	2735	MADHYA MAHARASHTRA	2014	3.1	6.2	24.4	7.5	29.8	44.0	277.9	240.3	120.4	38

114 rows × 20 columns



```
In [376]: MADHYA_MAHARASHTRA.fillna(356)
```

Out[376]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2622	2622	MADHYA MAHARASHTRA	1901	18.8	0.6	7.7	36.6	30.4	107.7	215.9	194.1	83.7	66.0	10.0	1.0
2623	2623	MADHYA MAHARASHTRA	1902	7.8	0.0	0.1	5.0	9.8	102.6	210.9	114.5	169.5	60.0	10.0	1.0
2624	2624	MADHYA MAHARASHTRA	1903	7.6	0.0	0.0	3.2	77.2	86.3	281.8	155.5	142.3	74.0	10.0	1.0
2625	2625	MADHYA MAHARASHTRA	1904	0.4	4.7	1.7	3.0	18.7	114.6	126.5	59.5	183.0	91.0	10.0	1.0
2626	2626	MADHYA MAHARASHTRA	1905	0.0	1.2	0.0	2.3	23.6	65.0	252.8	79.0	52.6	52.0	10.0	1.0
...
2731	2731	MADHYA MAHARASHTRA	2010	2.9	0.1	0.9	2.3	5.4	185.6	280.9	233.2	165.6	77.0	10.0	1.0
2732	2732	MADHYA MAHARASHTRA	2011	0.0	0.3	0.3	5.0	2.9	133.3	261.4	238.1	148.4	62.0	10.0	1.0
2733	2733	MADHYA MAHARASHTRA	2012	0.0	0.0	0.0	3.0	1.4	67.9	203.0	187.8	129.5	95.0	10.0	1.0
2734	2734	MADHYA MAHARASHTRA	2013	0.1	5.3	0.8	5.7	6.0	212.4	311.8	147.0	210.3	57.0	10.0	1.0
2735	2735	MADHYA MAHARASHTRA	2014	3.1	6.2	24.4	7.5	29.8	44.0	277.9	240.3	120.4	38.0	10.0	1.0

114 rows × 20 columns



```
In [377]: np.shape(MADHYA_MAHARASHTRA)
```

Out[377]: (114, 20)

```
In [378]: np.size(MADHYA_MAHARASHTRA)
```

Out[378]: 2280

In [379]: MADHYA_MAHARASHTRA.isna()

Out[379]:

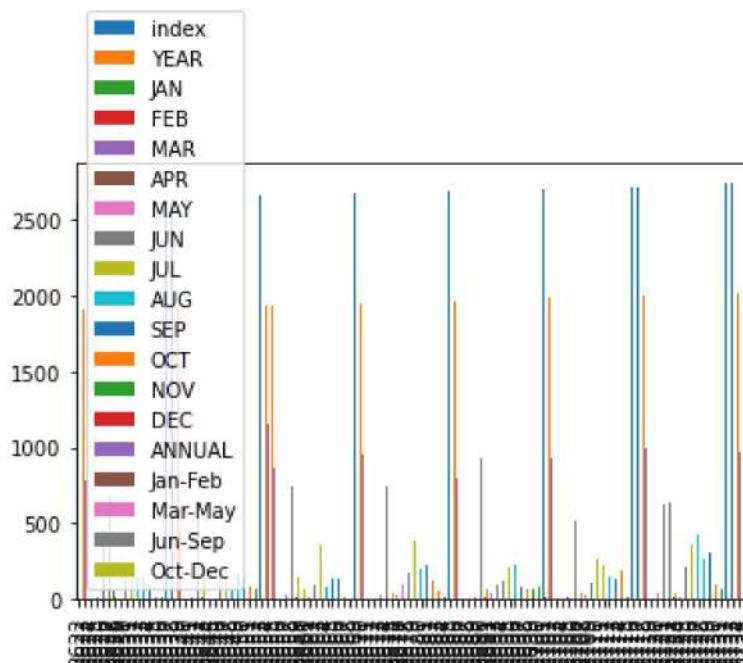
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2622	False		False										
2623	False		False										
2624	False		False										
2625	False		False										
2626	False		False										
...
2731	False		False										
2732	False		False										
2733	False		False										
2734	False		False										
2735	False		False										

114 rows × 20 columns



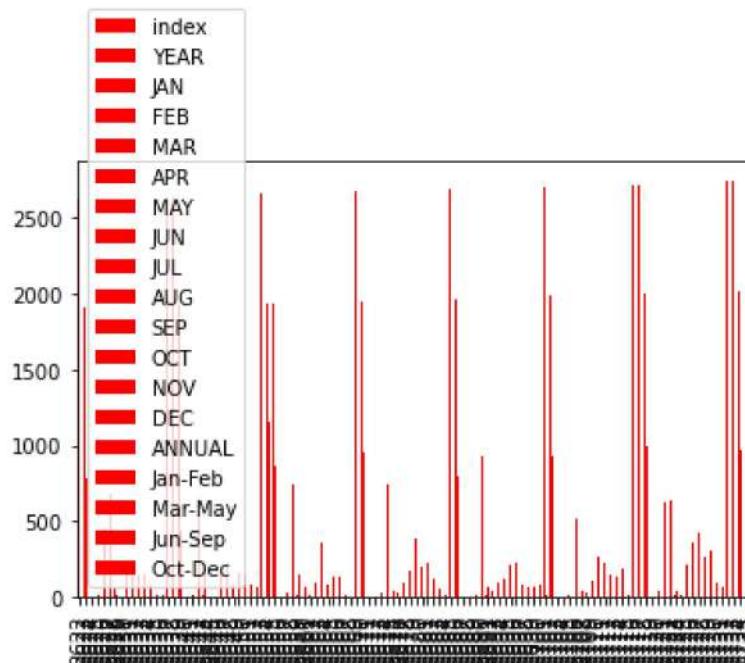
In [380]: MADHYA_MAHARASHTRA.plot.bar()

Out[380]: <AxesSubplot:>



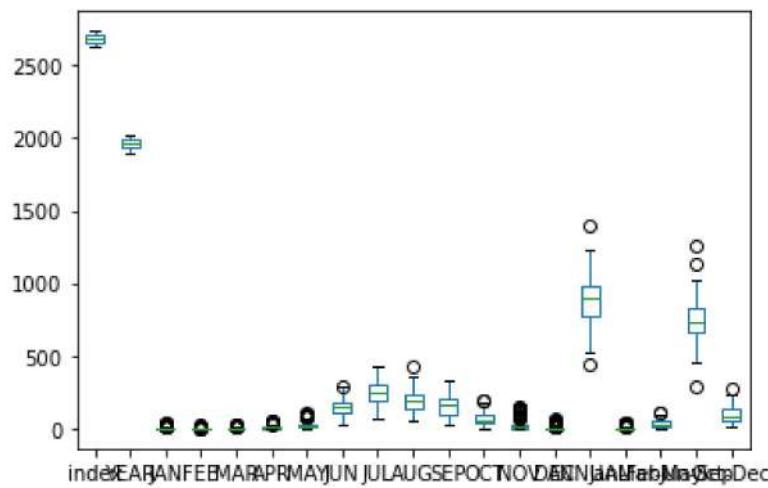
```
In [381]: MADHYA_MAHARASHTRA.plot.bar(color='r')
```

```
Out[381]: <AxesSubplot:>
```



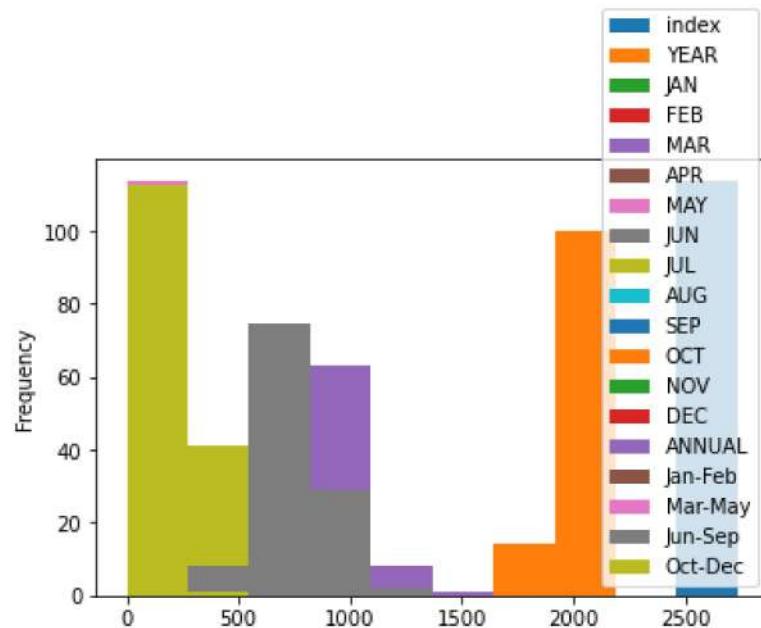
```
In [382]: MADHYA_MAHARASHTRA.plot.box()
```

```
Out[382]: <AxesSubplot:>
```



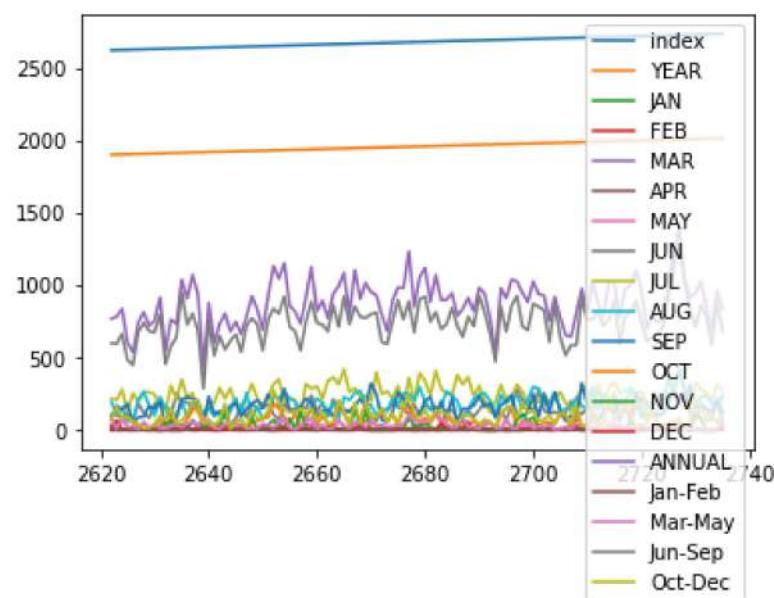
```
In [383]: MADHYA_MAHARASHTRA.plot.hist()
```

```
Out[383]: <AxesSubplot:ylabel='Frequency'>
```



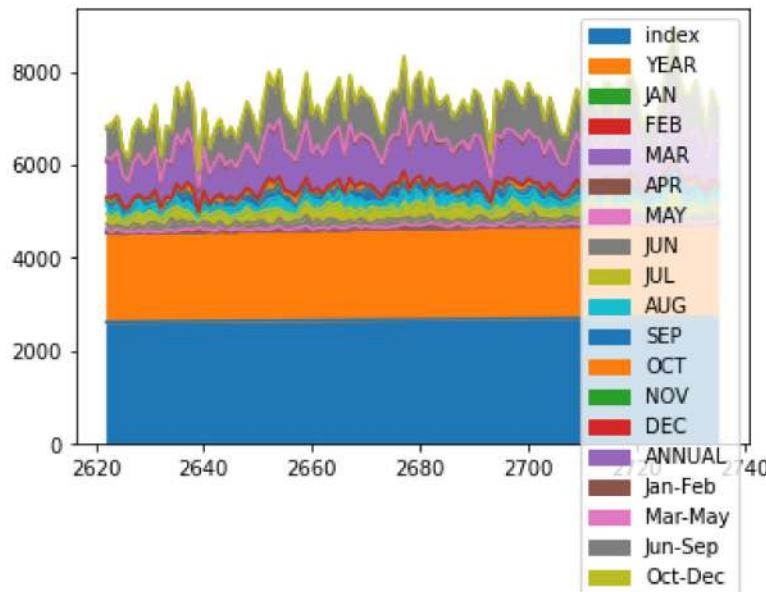
```
In [384]: MADHYA_MAHARASHTRA.plot.line()
```

```
Out[384]: <AxesSubplot:>
```



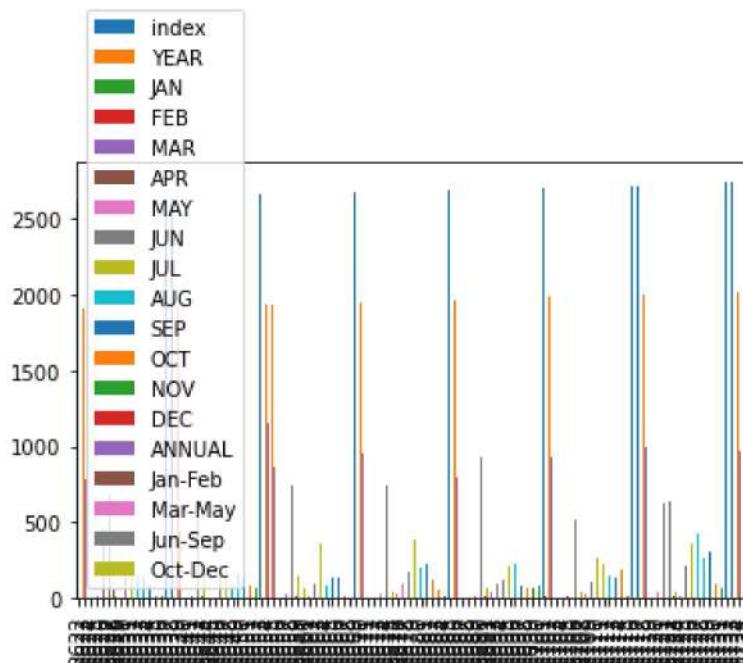
```
In [385]: MADHYA_MAHARASHTRA.plot.area()
```

```
Out[385]: <AxesSubplot:>
```



```
In [386]: MADHYA_MAHARASHTRA.plot.bar()
```

```
Out[386]: <AxesSubplot:>
```



MATATHWADA

```
In [387]: MATATHWADA=sd[2737:2851]  
MATATHWADA
```

Out[387]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2737	2737	MATATHWADA	1901	15.8	3.3	32.1	48.5	26.5	193.1	184.1	249.8	74.0	81.
2738	2738	MATATHWADA	1902	1.3	0.0	0.4	7.2	0.8	52.4	120.9	85.2	273.3	61.
2739	2739	MATATHWADA	1903	2.6	0.8	0.0	1.7	58.3	104.4	264.2	281.9	173.3	139.
2740	2740	MATATHWADA	1904	0.0	0.9	12.1	0.3	7.2	79.2	118.4	57.3	339.0	76.
2741	2741	MATATHWADA	1905	1.3	2.0	0.0	6.6	4.8	84.6	94.8	137.6	157.8	15.
...
2846	2846	MATATHWADA	2010	4.3	5.8	3.9	0.7	4.6	119.7	329.5	291.4	157.3	57.
2847	2847	MATATHWADA	2011	0.0	3.8	0.7	3.5	3.1	79.2	230.1	228.5	90.0	24.
2848	2848	MATATHWADA	2012	0.0	0.0	0.0	0.6	2.3	72.2	161.1	101.4	120.0	68.
2849	2849	MATATHWADA	2013	1.5	9.4	2.6	7.9	6.4	160.9	293.4	136.9	154.1	94.
2850	2850	MATATHWADA	2014	1.4	13.4	79.0	11.9	7.0	30.4	105.0	178.9	84.5	14.

114 rows × 20 columns

In [388]: MATATHWADA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 2737 to 2850
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [389]: MATATHWADA.describe()

Out[389]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	2793.500000	1957.500000	4.956140	4.468421	6.886842	7.314035	15.676316	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000	137.000000
std	33.052988	33.052988	10.680932	8.761100	12.376108	9.608227	21.920865	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000	57.000000
min	2737.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	2765.250000	1929.250000	0.000000	0.000000	0.200000	1.500000	2.150000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000	92.000000
50%	2793.500000	1957.500000	0.800000	0.700000	2.500000	4.500000	7.850000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000	13.000000
75%	2821.750000	1985.750000	5.500000	4.775000	7.775000	10.350000	19.250000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000	179.000000
max	2850.000000	2014.000000	70.400000	63.500000	79.000000	61.300000	142.100000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000	297.000000



```
In [390]: MATATHWADA.columns
```

```
Out[390]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [391]: MATATHWADA.dropna()
```

```
Out[391]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2737	2737	MATATHWADA	1901	15.8	3.3	32.1	48.5	26.5	193.1	184.1	249.8	74.0	81.
2738	2738	MATATHWADA	1902	1.3	0.0	0.4	7.2	0.8	52.4	120.9	85.2	273.3	61.
2739	2739	MATATHWADA	1903	2.6	0.8	0.0	1.7	58.3	104.4	264.2	281.9	173.3	139.
2740	2740	MATATHWADA	1904	0.0	0.9	12.1	0.3	7.2	79.2	118.4	57.3	339.0	76.
2741	2741	MATATHWADA	1905	1.3	2.0	0.0	6.6	4.8	84.6	94.8	137.6	157.8	15.
...
2846	2846	MATATHWADA	2010	4.3	5.8	3.9	0.7	4.6	119.7	329.5	291.4	157.3	57.
2847	2847	MATATHWADA	2011	0.0	3.8	0.7	3.5	3.1	79.2	230.1	228.5	90.0	24.
2848	2848	MATATHWADA	2012	0.0	0.0	0.0	0.6	2.3	72.2	161.1	101.4	120.0	68.
2849	2849	MATATHWADA	2013	1.5	9.4	2.6	7.9	6.4	160.9	293.4	136.9	154.1	94.
2850	2850	MATATHWADA	2014	1.4	13.4	79.0	11.9	7.0	30.4	105.0	178.9	84.5	14.

114 rows × 20 columns

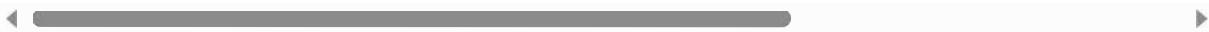


```
In [392]: MATATHWADA.fillna(356)
```

```
Out[392]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
2737	2737	MATATHWADA	1901	15.8	3.3	32.1	48.5	26.5	193.1	184.1	249.8	74.0	81.
2738	2738	MATATHWADA	1902	1.3	0.0	0.4	7.2	0.8	52.4	120.9	85.2	273.3	61.
2739	2739	MATATHWADA	1903	2.6	0.8	0.0	1.7	58.3	104.4	264.2	281.9	173.3	139.
2740	2740	MATATHWADA	1904	0.0	0.9	12.1	0.3	7.2	79.2	118.4	57.3	339.0	76.
2741	2741	MATATHWADA	1905	1.3	2.0	0.0	6.6	4.8	84.6	94.8	137.6	157.8	15.
...
2846	2846	MATATHWADA	2010	4.3	5.8	3.9	0.7	4.6	119.7	329.5	291.4	157.3	57.
2847	2847	MATATHWADA	2011	0.0	3.8	0.7	3.5	3.1	79.2	230.1	228.5	90.0	24.
2848	2848	MATATHWADA	2012	0.0	0.0	0.0	0.6	2.3	72.2	161.1	101.4	120.0	68.
2849	2849	MATATHWADA	2013	1.5	9.4	2.6	7.9	6.4	160.9	293.4	136.9	154.1	94.
2850	2850	MATATHWADA	2014	1.4	13.4	79.0	11.9	7.0	30.4	105.0	178.9	84.5	14.

114 rows × 20 columns



```
In [393]: np.shape(MATATHWADA)
```

```
Out[393]: (114, 20)
```

```
In [394]: np.size(MATATHWADA)
```

```
Out[394]: 2280
```

In [395]: MATATHWADA.isna()

Out[395]:

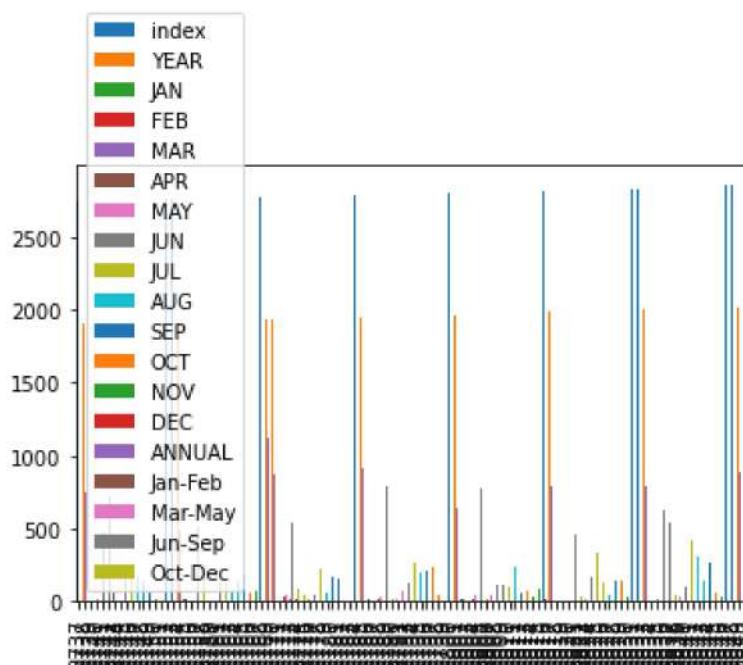
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2737	False		False										
2738	False		False										
2739	False		False										
2740	False		False										
2741	False		False										
...
2846	False		False										
2847	False		False										
2848	False		False										
2849	False		False										
2850	False		False										

114 rows × 20 columns



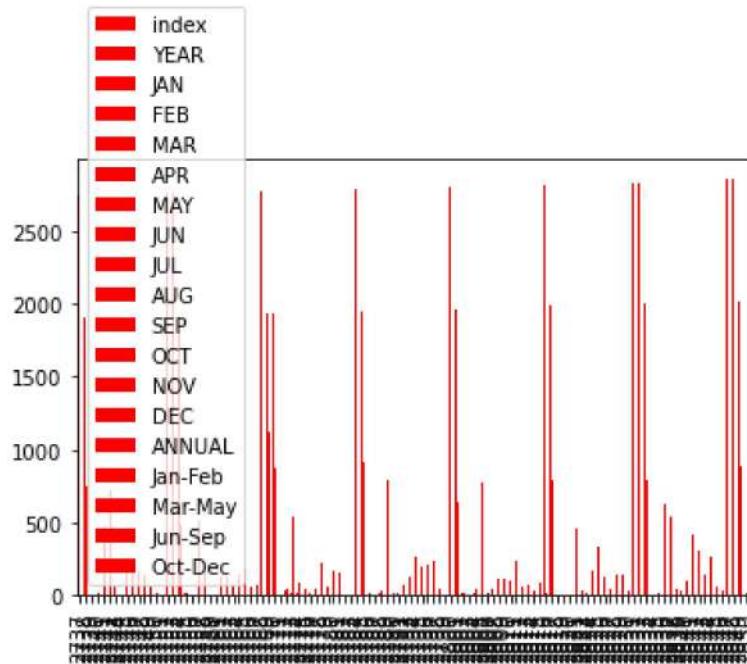
In [396]: MATATHWADA.plot.bar()

Out[396]: <AxesSubplot:>



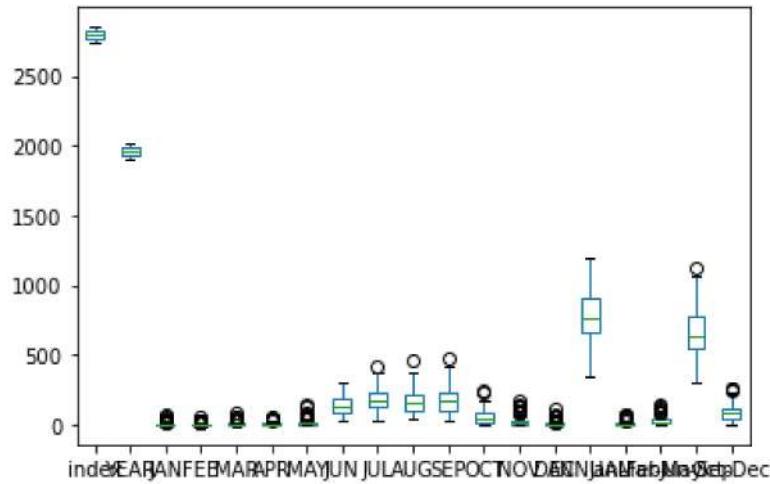
```
In [397]: MATATHWADA.plot.bar(color='r')
```

```
Out[397]: <AxesSubplot:>
```



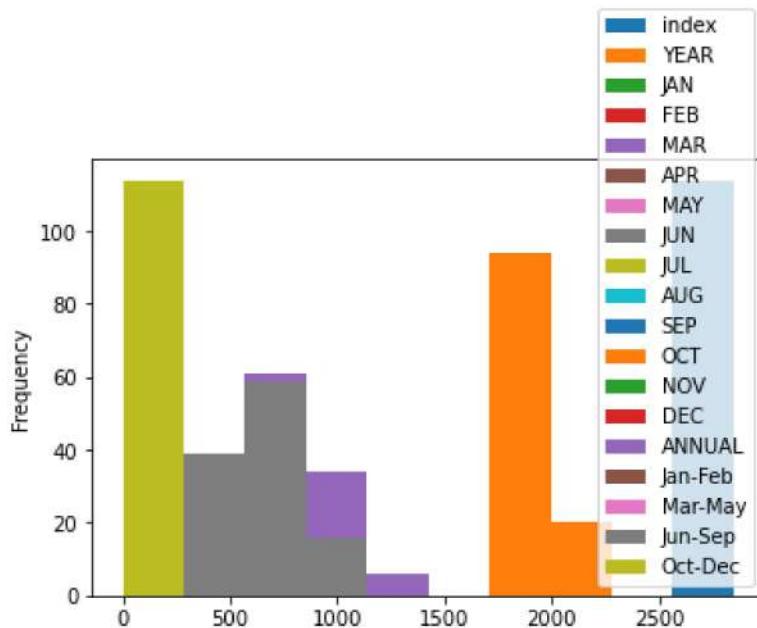
```
In [398]: MATATHWADA.plot.box()
```

```
Out[398]: <AxesSubplot:>
```



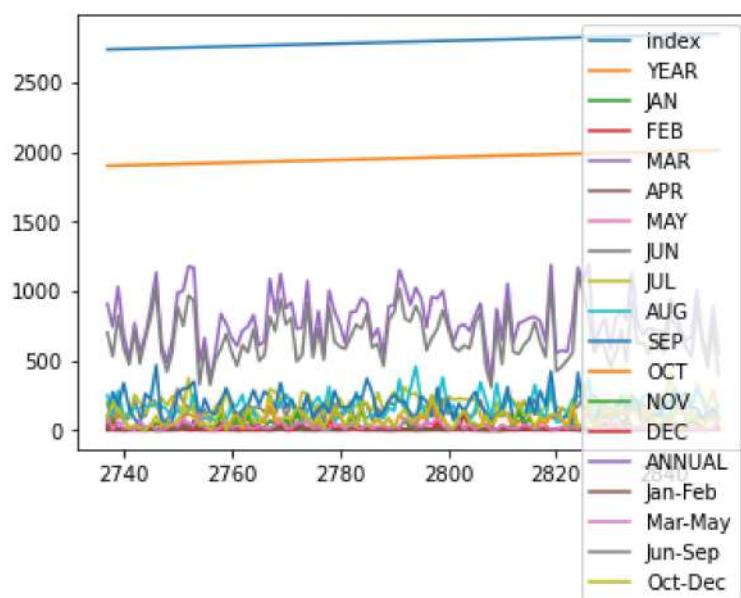
```
In [399]: MATATHWADA.plot.hist()
```

```
Out[399]: <AxesSubplot:ylabel='Frequency'>
```



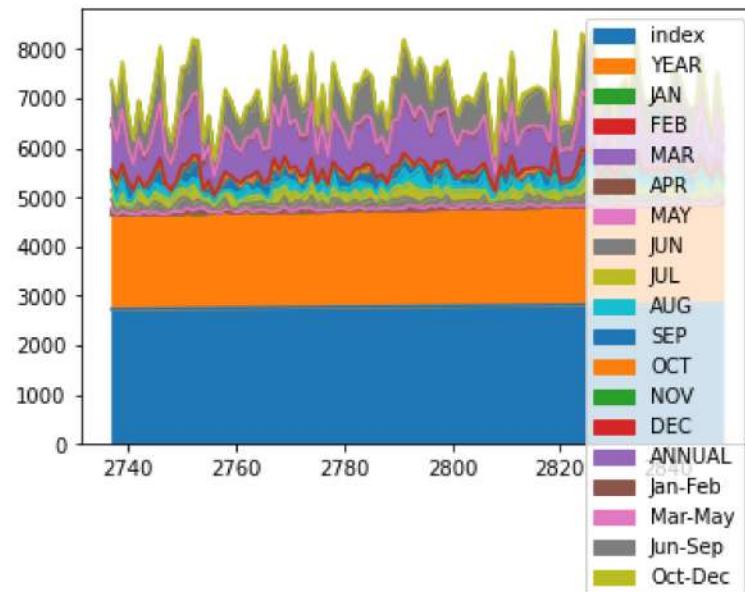
```
In [400]: MATATHWADA.plot.line()
```

```
Out[400]: <AxesSubplot:>
```



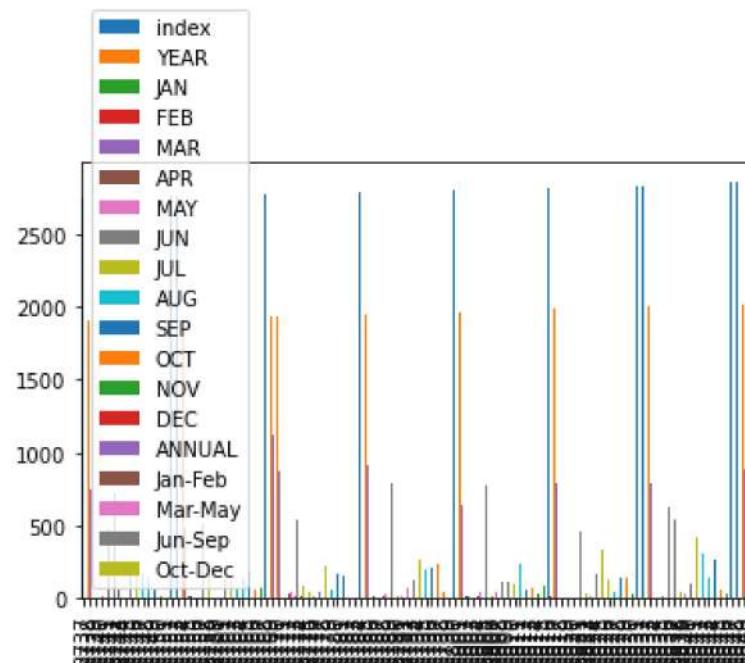
In [401]: MATATHWADA.plot.area()

Out[401]: <AxesSubplot:>



In [402]: MATATHWADA.plot.bar()

Out[402]: <AxesSubplot:>



VIDARBHA

```
In [403]: VIDARBHA=sd[2852:2966]  
VIDARBHA
```

Out[403]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2852	2852	VIDARBHA	1901	36.8	39.9	30.9	26.1	7.3	129.7	295.3	368.8	123.4	35.2
2853	2853	VIDARBHA	1902	1.6	0.1	0.0	6.5	4.1	38.0	270.7	204.7	150.9	29.6
2854	2854	VIDARBHA	1903	5.2	4.0	0.1	2.5	37.8	121.2	475.5	325.5	154.8	100.8
2855	2855	VIDARBHA	1904	4.3	2.4	12.9	0.2	14.8	148.9	158.3	151.8	196.9	61.7
2856	2856	VIDARBHA	1905	7.3	12.7	12.4	16.2	14.0	81.0	254.5	216.3	321.3	6.0
...
2961	2961	VIDARBHA	2010	14.0	1.9	7.5	0.3	1.9	144.8	454.5	384.0	238.0	51.0
2962	2962	VIDARBHA	2011	0.0	1.2	0.1	7.7	0.6	137.9	247.1	302.8	191.0	4.7
2963	2963	VIDARBHA	2012	3.1	0.1	0.0	0.6	0.2	125.5	370.5	316.2	249.4	34.9
2964	2964	VIDARBHA	2013	6.6	13.0	3.8	2.8	0.5	366.7	535.5	326.1	131.7	133.5
2965	2965	VIDARBHA	2014	1.2	18.3	49.6	2.6	4.0	63.3	337.6	191.7	224.9	17.3

114 rows × 20 columns

In [404]: VIDARBHA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 2852 to 2965
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [405]: VIDARBHA.describe()

Out[405]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114
mean	2908.500000	1957.500000	10.425439	12.046491	11.394737	9.271930	11.540351	172
std	33.052988	33.052988	15.099416	17.351581	14.737129	13.117728	14.668368	77
min	2852.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21
25%	2880.250000	1929.250000	0.350000	1.100000	0.925000	2.625000	2.225000	116
50%	2908.500000	1957.500000	3.750000	4.850000	4.850000	5.600000	6.150000	156
75%	2936.750000	1985.750000	14.575000	14.350000	15.725000	11.800000	14.950000	231
max	2965.000000	2014.000000	74.900000	84.900000	65.900000	112.700000	83.100000	377

```
In [406]: VIDARBHA.columns
```

```
Out[406]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [407]: VIDARBHA.dropna()
```

```
Out[407]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2852	2852	VIDARBHA	1901	36.8	39.9	30.9	26.1	7.3	129.7	295.3	368.8	123.4	35.2
2853	2853	VIDARBHA	1902	1.6	0.1	0.0	6.5	4.1	38.0	270.7	204.7	150.9	29.6
2854	2854	VIDARBHA	1903	5.2	4.0	0.1	2.5	37.8	121.2	475.5	325.5	154.8	100.8
2855	2855	VIDARBHA	1904	4.3	2.4	12.9	0.2	14.8	148.9	158.3	151.8	196.9	61.7
2856	2856	VIDARBHA	1905	7.3	12.7	12.4	16.2	14.0	81.0	254.5	216.3	321.3	6.0
...
2961	2961	VIDARBHA	2010	14.0	1.9	7.5	0.3	1.9	144.8	454.5	384.0	238.0	51.0
2962	2962	VIDARBHA	2011	0.0	1.2	0.1	7.7	0.6	137.9	247.1	302.8	191.0	4.7
2963	2963	VIDARBHA	2012	3.1	0.1	0.0	0.6	0.2	125.5	370.5	316.2	249.4	34.9
2964	2964	VIDARBHA	2013	6.6	13.0	3.8	2.8	0.5	366.7	535.5	326.1	131.7	133.5
2965	2965	VIDARBHA	2014	1.2	18.3	49.6	2.6	4.0	63.3	337.6	191.7	224.9	17.3

114 rows × 20 columns



```
In [408]: VIDARBHA.fillna(356)
```

```
Out[408]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2852	2852	VIDARBHA	1901	36.8	39.9	30.9	26.1	7.3	129.7	295.3	368.8	123.4	35.2
2853	2853	VIDARBHA	1902	1.6	0.1	0.0	6.5	4.1	38.0	270.7	204.7	150.9	29.6
2854	2854	VIDARBHA	1903	5.2	4.0	0.1	2.5	37.8	121.2	475.5	325.5	154.8	100.8
2855	2855	VIDARBHA	1904	4.3	2.4	12.9	0.2	14.8	148.9	158.3	151.8	196.9	61.7
2856	2856	VIDARBHA	1905	7.3	12.7	12.4	16.2	14.0	81.0	254.5	216.3	321.3	6.0
...
2961	2961	VIDARBHA	2010	14.0	1.9	7.5	0.3	1.9	144.8	454.5	384.0	238.0	51.0
2962	2962	VIDARBHA	2011	0.0	1.2	0.1	7.7	0.6	137.9	247.1	302.8	191.0	4.7
2963	2963	VIDARBHA	2012	3.1	0.1	0.0	0.6	0.2	125.5	370.5	316.2	249.4	34.9
2964	2964	VIDARBHA	2013	6.6	13.0	3.8	2.8	0.5	366.7	535.5	326.1	131.7	133.5
2965	2965	VIDARBHA	2014	1.2	18.3	49.6	2.6	4.0	63.3	337.6	191.7	224.9	17.3

114 rows × 20 columns



```
In [409]: np.shape(VIDARBHA)
```

```
Out[409]: (114, 20)
```

```
In [410]: np.size(VIDARBHA)
```

```
Out[410]: 2280
```

In [411]: VIDARBHA.isna()

Out[411]:

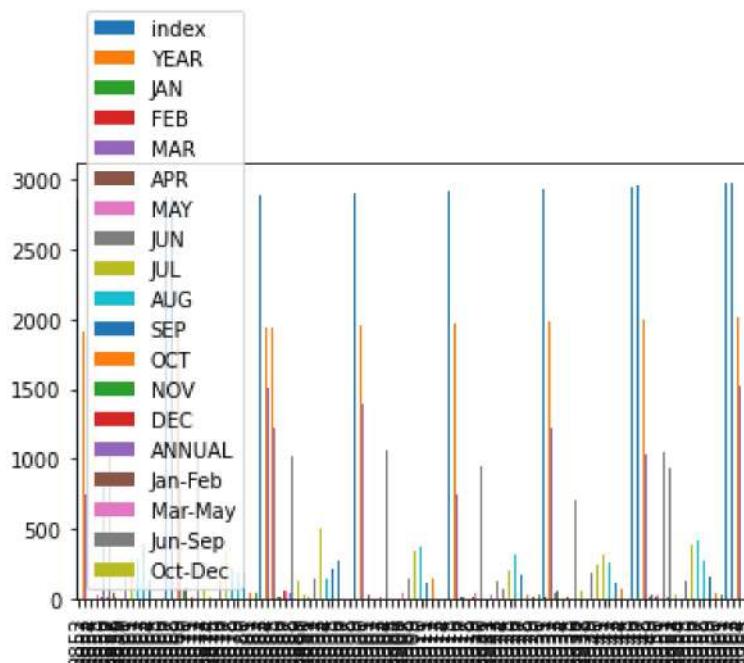
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2852	False		False										
2853	False		False										
2854	False		False										
2855	False		False										
2856	False		False										
...
2961	False		False										
2962	False		False										
2963	False		False										
2964	False		False										
2965	False		False										

114 rows × 20 columns

◀ ▶

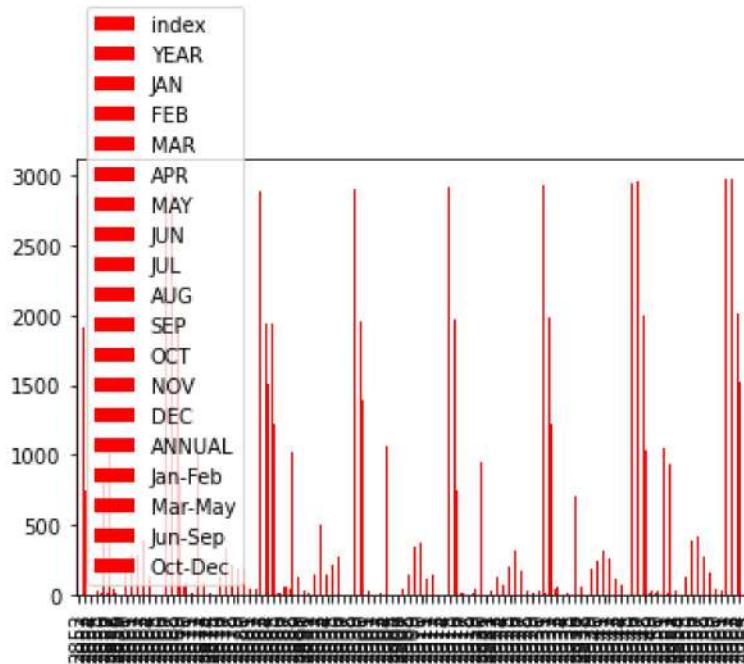
In [412]: VIDARBHA.plot.bar()

Out[412]: <AxesSubplot:>



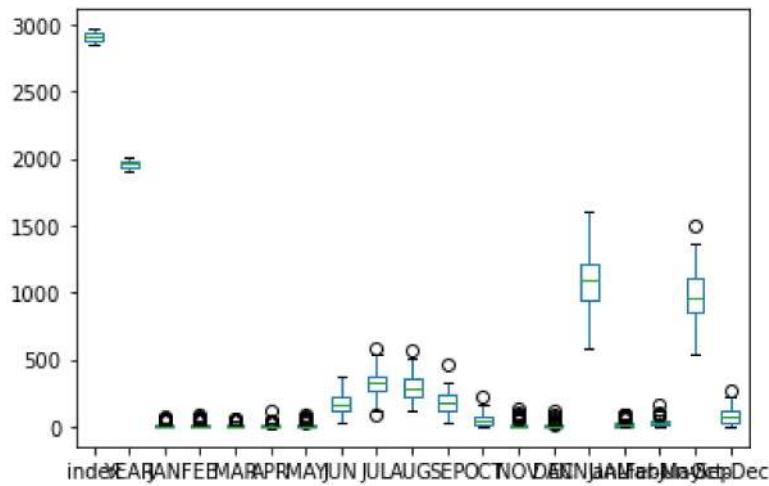
```
In [413]: VIDARBHA.plot.bar(color='r')
```

```
Out[413]: <AxesSubplot:>
```



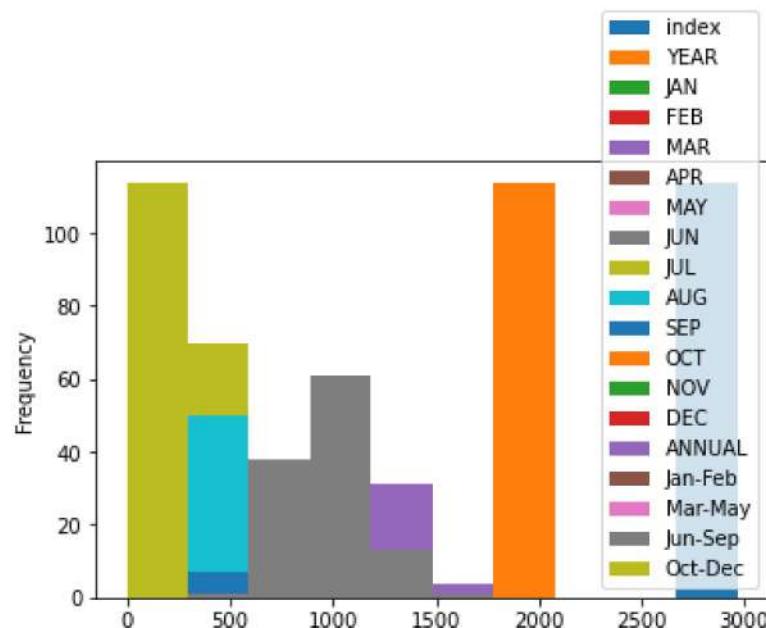
```
In [414]: VIDARBHA.plot.box()
```

```
Out[414]: <AxesSubplot:>
```



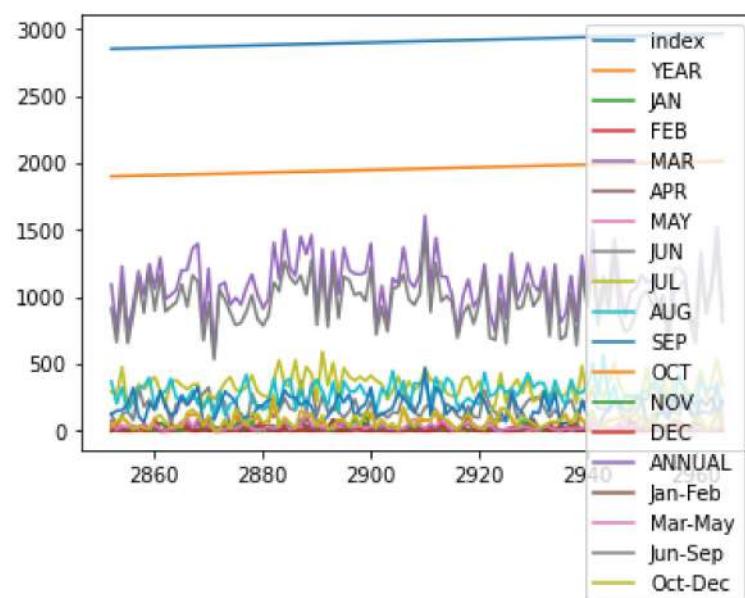
```
In [415]: VIDARBHA.plot.hist()
```

```
Out[415]: <AxesSubplot:ylabel='Frequency'>
```



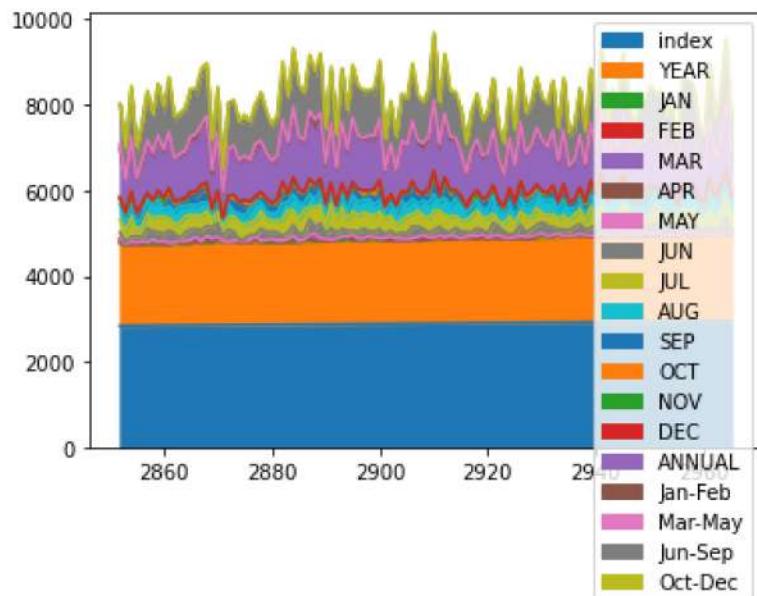
```
In [416]: VIDARBHA.plot.line()
```

```
Out[416]: <AxesSubplot:>
```



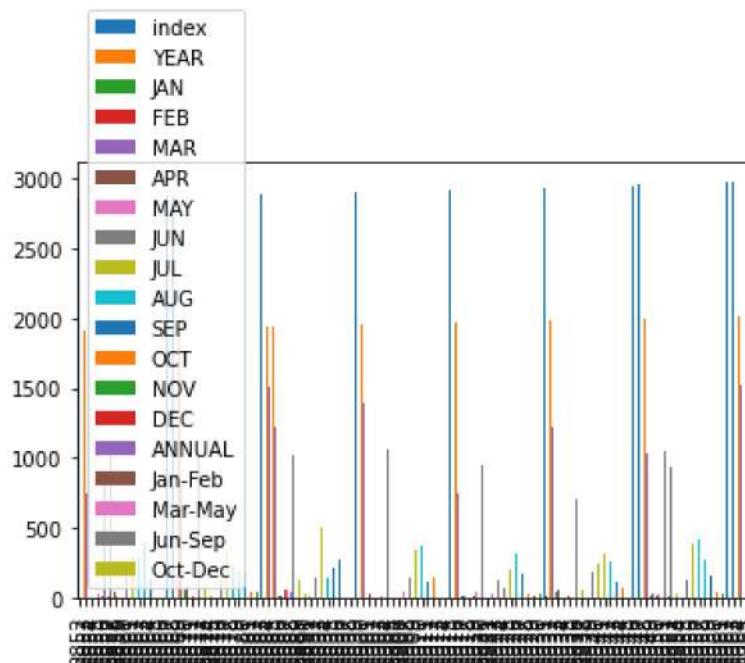
```
In [417]: VIDARBHA.plot.area()
```

```
Out[417]: <AxesSubplot:>
```



```
In [418]: VIDARBHA.plot.bar()
```

```
Out[418]: <AxesSubplot:>
```



CHHATTISGARH

In [419]: CHHATTISGARH=sd[2967:3081]
CHHATTISGARH

Out[419]:

	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	1
2968	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1	1
2969	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0	1
2970	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8	1
2971	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8	1
...
3076	3076	CHHATTISGARH	2010	7.9	4.9	1.0	5.9	12.6	102.6	426.8	340.3	302.5	1
3077	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2	1
3078	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3	1
3079	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9	1
3080	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7	1

114 rows × 20 columns

In [420]: CHHATTISGARH.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 2967 to 3080
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [421]: CHHATTISGARH.describe()

Out[421]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3023.500000	1957.500000	14.192982	19.417544	15.214912	16.595614	21.119298
std	33.052988	33.052988	18.396021	23.076285	20.737535	17.094187	20.707473
min	2967.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	3.000000
25%	2995.250000	1929.250000	1.325000	4.200000	2.200000	5.275000	8.700000
50%	3023.500000	1957.500000	6.400000	11.050000	7.900000	11.800000	15.500000
75%	3051.750000	1985.750000	22.600000	24.875000	21.300000	20.275000	25.225000
max	3080.000000	2014.000000	99.500000	116.500000	102.900000	112.800000	122.300000



```
In [422]: CHHATTISGARH.columns
```

```
Out[422]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [423]: CHHATTISGARH.dropna()
```

```
Out[423]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DECEMBER
2967	2967	CHHATTISGARH	1901	48.9	116.5	27.8	5.5	18.4	101.6	381.0	476.7	182.8	1
2968	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1	1
2969	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0	1
2970	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8	1
2971	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8	1
...
3076	3076	CHHATTISGARH	2010	7.9	4.9	1.0	5.9	12.6	102.6	426.8	340.3	302.5	1
3077	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2	1
3078	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3	1
3079	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9	1
3080	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7	1

114 rows × 20 columns

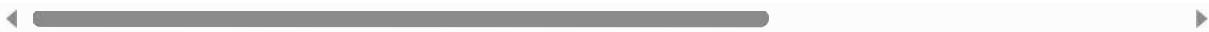


```
In [424]: CHHATTISGARH.fillna(356)
```

Out[424]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2967	2967	CHHATTISGARH	1901	48.9	116.5	27.8	5.5	18.4	101.6	381.0	476.7	182.8	100.0	100.0	100.0
2968	2968	CHHATTISGARH	1902	0.6	6.5	0.4	13.9	10.3	37.2	403.8	236.6	198.1	100.0	100.0	100.0
2969	2969	CHHATTISGARH	1903	6.2	13.9	0.4	6.8	51.1	110.7	365.9	396.0	212.0	100.0	100.0	100.0
2970	2970	CHHATTISGARH	1904	0.0	8.6	32.3	0.2	77.5	369.5	303.6	483.6	86.8	100.0	100.0	100.0
2971	2971	CHHATTISGARH	1905	50.3	22.6	19.0	24.6	31.8	40.4	443.7	270.8	338.8	100.0	100.0	100.0
...
3076	3076	CHHATTISGARH	2010	7.9	4.9	1.0	5.9	12.6	102.6	426.8	340.3	302.5	100.0	100.0	100.0
3077	3077	CHHATTISGARH	2011	0.3	11.5	2.6	35.0	16.8	183.5	272.6	379.8	382.2	100.0	100.0	100.0
3078	3078	CHHATTISGARH	2012	36.6	4.8	1.1	14.9	9.4	147.3	430.6	442.2	245.3	100.0	100.0	100.0
3079	3079	CHHATTISGARH	2013	2.8	19.7	4.9	45.8	5.7	263.6	418.8	336.6	140.9	100.0	100.0	100.0
3080	3080	CHHATTISGARH	2014	2.3	29.0	21.4	17.3	25.0	104.9	416.7	327.7	252.7	100.0	100.0	100.0

114 rows × 20 columns



```
In [425]: np.shape(CHHATTISGARH)
```

Out[425]: (114, 20)

```
In [426]: np.size(CHHATTISGARH)
```

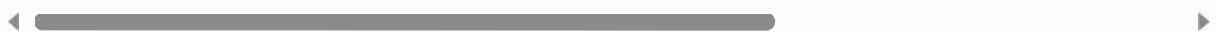
Out[426]: 2280

In [427]: CHHATTISGARH.isna()

Out[427]:

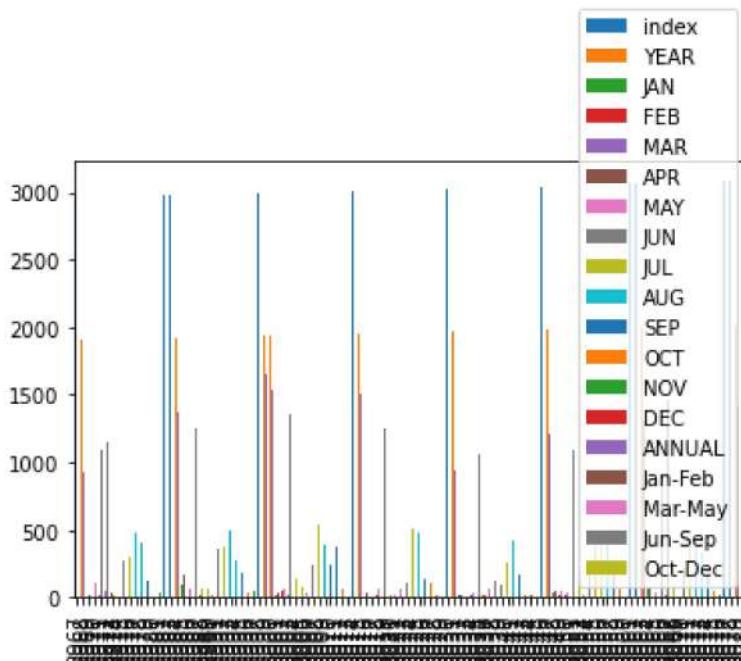
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
2967	False		False										
2968	False		False										
2969	False		False										
2970	False		False										
2971	False		False										
...
3076	False		False										
3077	False		False										
3078	False		False										
3079	False		False										
3080	False		False										

114 rows × 20 columns



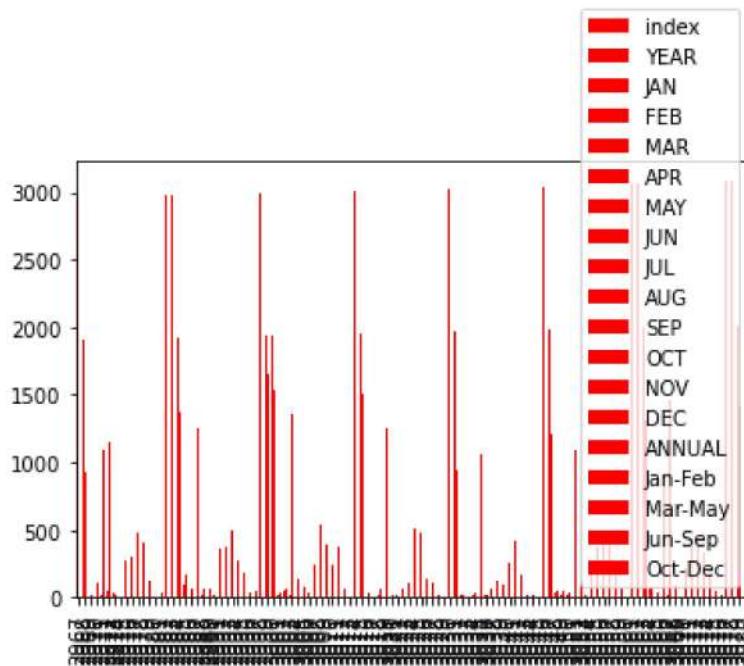
In [428]: CHHATTISGARH.plot.bar()

Out[428]: <AxesSubplot:>



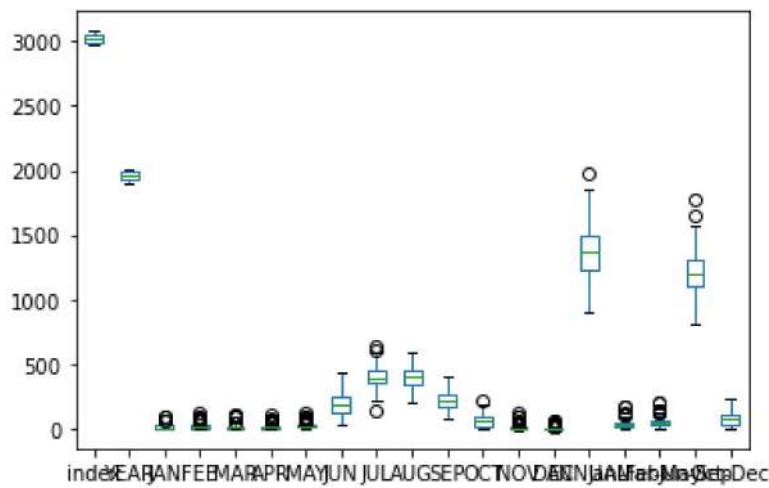
```
In [429]: CHHATTISGARH.plot.bar(color='r')
```

```
Out[429]: <AxesSubplot:>
```



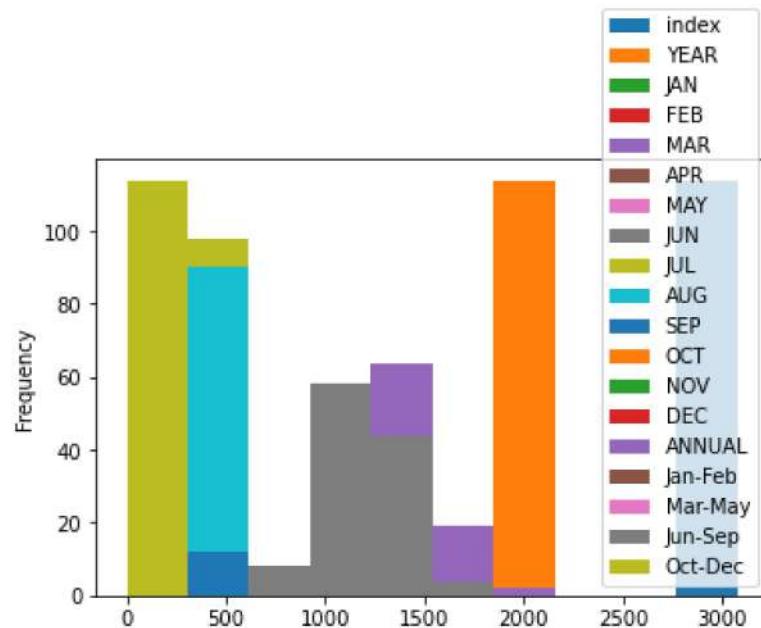
```
In [430]: CHHATTISGARH.plot.box()
```

```
Out[430]: <AxesSubplot:>
```



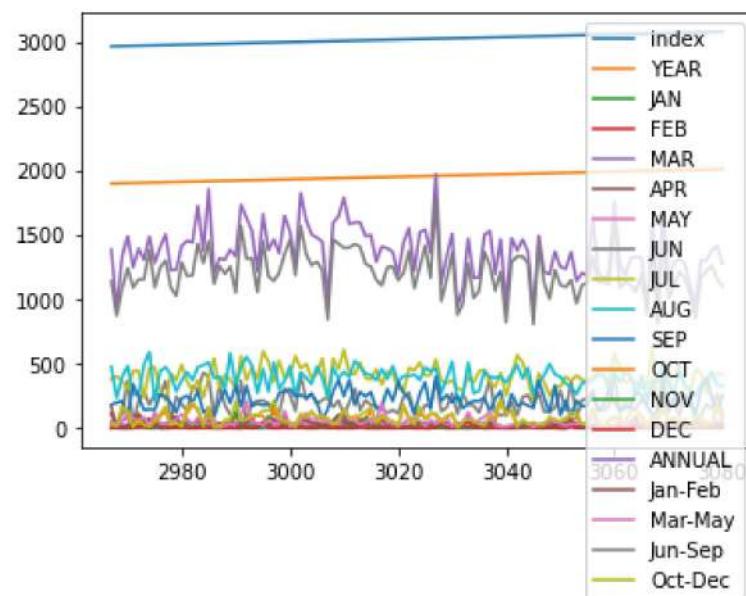
```
In [431]: CHHATTISGARH.plot.hist()
```

```
Out[431]: <AxesSubplot:ylabel='Frequency'>
```



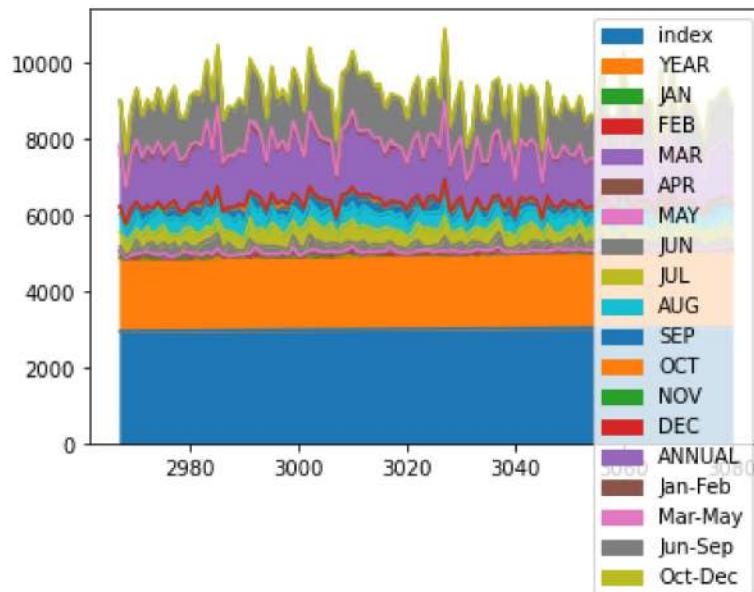
```
In [432]: CHHATTISGARH.plot.line()
```

```
Out[432]: <AxesSubplot:>
```



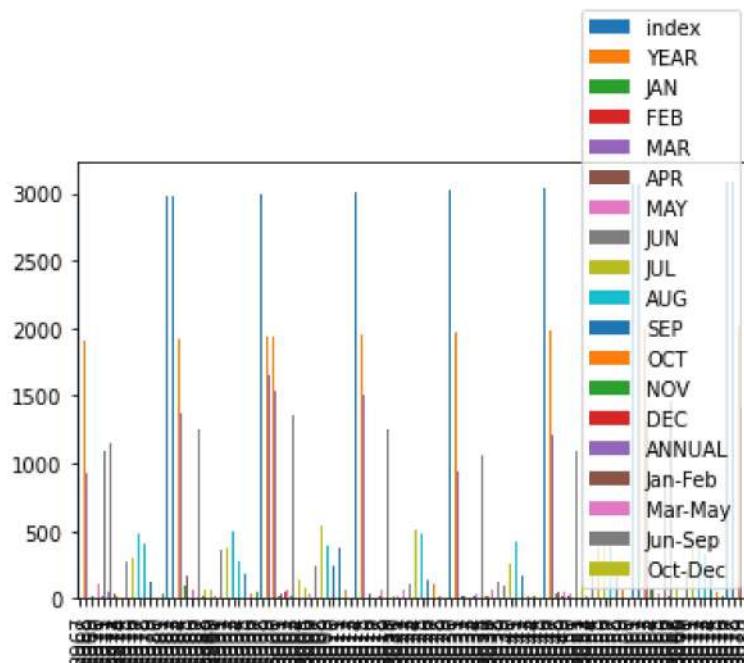
```
In [433]: CHHATTISGARH.plot.area()
```

```
Out[433]: <AxesSubplot:>
```



```
In [434]: CHHATTISGARH.plot.bar()
```

```
Out[434]: <AxesSubplot:>
```



COASTAL ANDHRA PRADESH

In [435]: COASTAL_ANDHRA_PRADESH=sd[3082:3196]
COASTAL_ANDHRA_PRADESH

Out[435]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3082	3082	COASTAL ANDHRA PRADESH	1901	18.8	80.9	7.2	28.7	68.7	77.7	113.0	133.7	125.3	173.
3083	3083	COASTAL ANDHRA PRADESH	1902	2.0	0.0	2.8	23.9	37.6	72.6	144.5	236.1	204.5	262.
3084	3084	COASTAL ANDHRA PRADESH	1903	0.8	13.3	0.2	6.2	73.4	154.0	248.6	258.0	216.5	159.
3085	3085	COASTAL ANDHRA PRADESH	1904	1.3	0.0	5.4	3.0	136.3	107.8	120.2	117.7	116.8	240.
3086	3086	COASTAL ANDHRA PRADESH	1905	1.1	16.7	68.0	37.0	68.8	84.4	64.6	210.8	170.2	66.
...
3191	3191	COASTAL ANDHRA PRADESH	2010	21.8	2.3	4.4	14.8	162.0	156.1	318.9	248.6	230.5	204.
3192	3192	COASTAL ANDHRA PRADESH	2011	0.0	17.9	0.9	62.3	67.9	86.8	196.0	215.8	129.7	74.
3193	3193	COASTAL ANDHRA PRADESH	2012	37.6	0.0	2.7	24.0	39.3	95.4	221.9	221.2	246.5	140.
3194	3194	COASTAL ANDHRA PRADESH	2013	2.0	29.6	0.2	48.0	28.2	127.5	162.4	123.1	132.0	411.
3195	3195	COASTAL ANDHRA PRADESH	2014	0.4	1.2	9.1	6.0	112.9	45.7	151.8	177.8	144.5	195.

114 rows × 20 columns



In [436]: COASTAL_ANDHRA_PRADESH.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3082 to 3195
Data columns (total 20 columns):
 #   Column      Non-Null Count   Dtype  
--- 
 0   index       114 non-null     int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [437]: COASTAL_ANDHRA_PRADESH.describe()

Out[437]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3138.500000	1957.500000	7.531579	13.031579	13.289474	26.692105	62.799123	122.800000	171.100000	220.400000	279.700000	339.000000	398.300000	457.600000	516.900000	576.200000	635.500000	694.800000	754.100000
std	33.052988	33.052988	11.564030	20.051568	20.111448	21.398516	63.944585	48.500000	55.000000	61.500000	68.000000	74.500000	81.000000	87.500000	95.000000	102.500000	110.000000	117.500000	125.000000
min	3082.000000	1901.000000	0.000000	0.000000	0.000000	1.100000	10.500000	44.500000	50.900000	57.300000	64.700000	72.100000	79.500000	86.900000	94.300000	101.700000	109.100000	116.500000	124.000000
25%	3110.250000	1929.250000	0.200000	0.425000	1.525000	12.925000	31.275000	86.500000	92.900000	99.300000	105.700000	112.100000	118.500000	125.000000	131.400000	137.800000	144.200000	150.600000	157.000000
50%	3138.500000	1957.500000	2.000000	5.200000	5.750000	21.150000	44.500000	110.000000	117.500000	125.000000	132.500000	140.000000	147.500000	155.000000	162.500000	170.000000	177.500000	185.000000	192.500000
75%	3166.750000	1985.750000	10.300000	17.400000	14.575000	35.175000	69.900000	157.500000	165.000000	172.500000	180.000000	187.500000	195.000000	202.500000	210.000000	217.500000	225.000000	232.500000	240.000000
max	3195.000000	2014.000000	54.100000	127.100000	96.600000	112.200000	507.700000	300.000000	307.500000	315.000000	322.500000	330.000000	337.500000	345.000000	352.500000	360.000000	367.500000	375.000000	382.500000



```
In [438]: COASTAL_ANDHRA_PRADESH.columns
```

```
Out[438]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [439]: COASTAL_ANDHRA_PRADESH.dropna()
```

```
Out[439]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3082	3082		COASTAL ANDHRA PRADESH	1901	18.8	80.9	7.2	28.7	68.7	77.7	113.0	133.7	125.3	173.
3083	3083		COASTAL ANDHRA PRADESH	1902	2.0	0.0	2.8	23.9	37.6	72.6	144.5	236.1	204.5	262.
3084	3084		COASTAL ANDHRA PRADESH	1903	0.8	13.3	0.2	6.2	73.4	154.0	248.6	258.0	216.5	159.
3085	3085		COASTAL ANDHRA PRADESH	1904	1.3	0.0	5.4	3.0	136.3	107.8	120.2	117.7	116.8	240.
3086	3086		COASTAL ANDHRA PRADESH	1905	1.1	16.7	68.0	37.0	68.8	84.4	64.6	210.8	170.2	66.
...
3191	3191		COASTAL ANDHRA PRADESH	2010	21.8	2.3	4.4	14.8	162.0	156.1	318.9	248.6	230.5	204.
3192	3192		COASTAL ANDHRA PRADESH	2011	0.0	17.9	0.9	62.3	67.9	86.8	196.0	215.8	129.7	74.
3193	3193		COASTAL ANDHRA PRADESH	2012	37.6	0.0	2.7	24.0	39.3	95.4	221.9	221.2	246.5	140.
3194	3194		COASTAL ANDHRA PRADESH	2013	2.0	29.6	0.2	48.0	28.2	127.5	162.4	123.1	132.0	411.
3195	3195		COASTAL ANDHRA PRADESH	2014	0.4	1.2	9.1	6.0	112.9	45.7	151.8	177.8	144.5	195.

114 rows × 20 columns



```
In [440]: COASTAL_ANDHRA_PRADESH.fillna(356)
```

Out[440]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3082	3082	COASTAL ANDHRA PRADESH	1901	18.8	80.9	7.2	28.7	68.7	77.7	113.0	133.7	125.3	173.
3083	3083	COASTAL ANDHRA PRADESH	1902	2.0	0.0	2.8	23.9	37.6	72.6	144.5	236.1	204.5	262.
3084	3084	COASTAL ANDHRA PRADESH	1903	0.8	13.3	0.2	6.2	73.4	154.0	248.6	258.0	216.5	159.
3085	3085	COASTAL ANDHRA PRADESH	1904	1.3	0.0	5.4	3.0	136.3	107.8	120.2	117.7	116.8	240.
3086	3086	COASTAL ANDHRA PRADESH	1905	1.1	16.7	68.0	37.0	68.8	84.4	64.6	210.8	170.2	66.
...
3191	3191	COASTAL ANDHRA PRADESH	2010	21.8	2.3	4.4	14.8	162.0	156.1	318.9	248.6	230.5	204.
3192	3192	COASTAL ANDHRA PRADESH	2011	0.0	17.9	0.9	62.3	67.9	86.8	196.0	215.8	129.7	74.
3193	3193	COASTAL ANDHRA PRADESH	2012	37.6	0.0	2.7	24.0	39.3	95.4	221.9	221.2	246.5	140.
3194	3194	COASTAL ANDHRA PRADESH	2013	2.0	29.6	0.2	48.0	28.2	127.5	162.4	123.1	132.0	411.
3195	3195	COASTAL ANDHRA PRADESH	2014	0.4	1.2	9.1	6.0	112.9	45.7	151.8	177.8	144.5	195.

114 rows × 20 columns



```
In [441]: np.shape(COASTAL_ANDHRA_PRADESH)
```

Out[441]: (114, 20)

```
In [442]: np.size(COASTAL_ANDHRA_PRADESH)
```

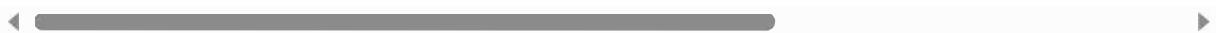
Out[442]: 2280

In [443]: COASTAL_ANDHRA_PRADESH.isna()

Out[443]:

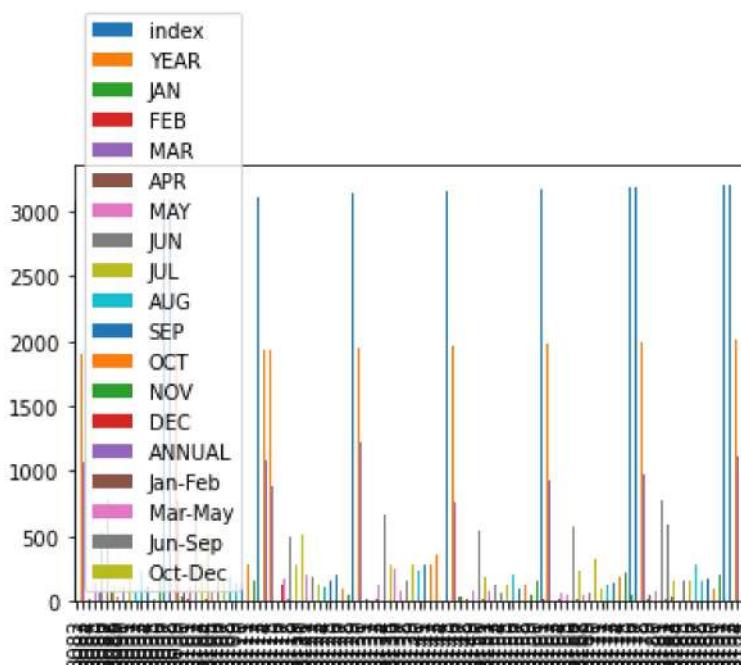
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3082	False		False										
3083	False		False										
3084	False		False										
3085	False		False										
3086	False		False										
...
3191	False		False										
3192	False		False										
3193	False		False										
3194	False		False										
3195	False		False										

114 rows × 20 columns



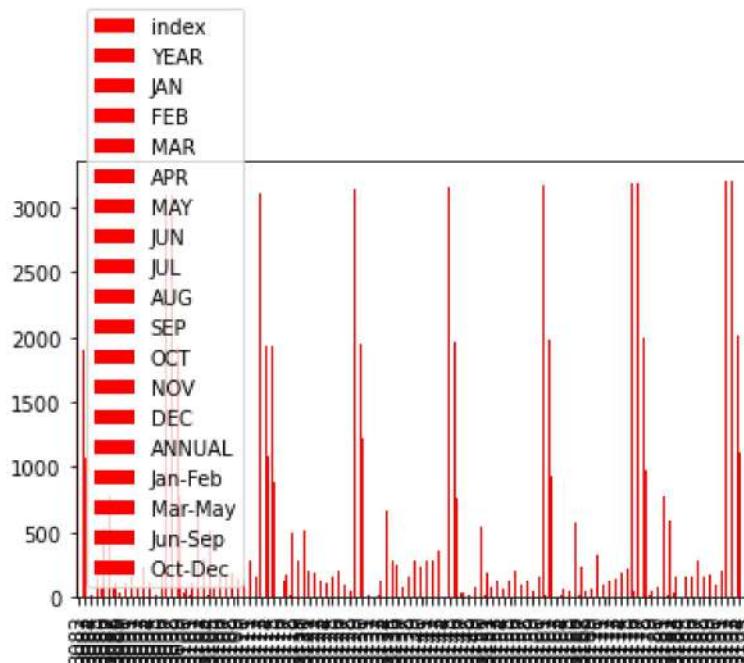
In [444]: COASTAL_ANDHRA_PRADESH.plot.bar()

Out[444]: <AxesSubplot:>



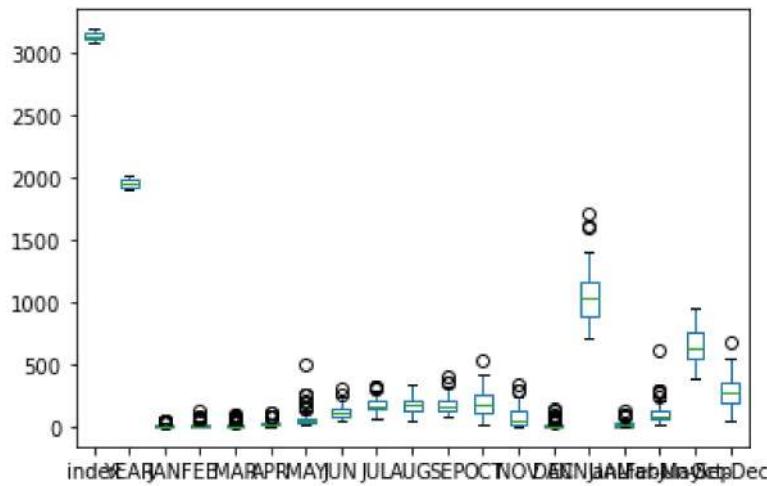
```
In [445]: COASTAL_ANDHRA_PRADESH.plot.bar(color='r')
```

```
Out[445]: <AxesSubplot:>
```



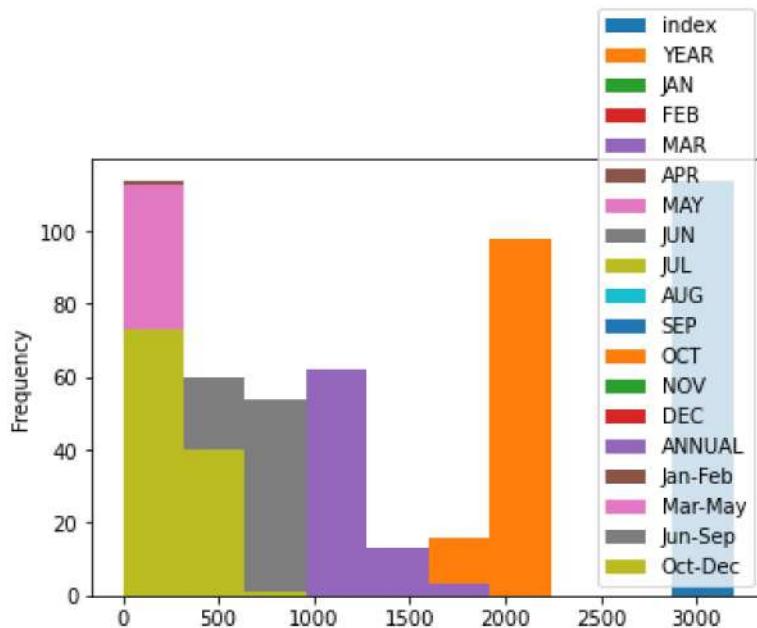
```
In [446]: COASTAL_ANDHRA_PRADESH.plot.box()
```

```
Out[446]: <AxesSubplot:>
```



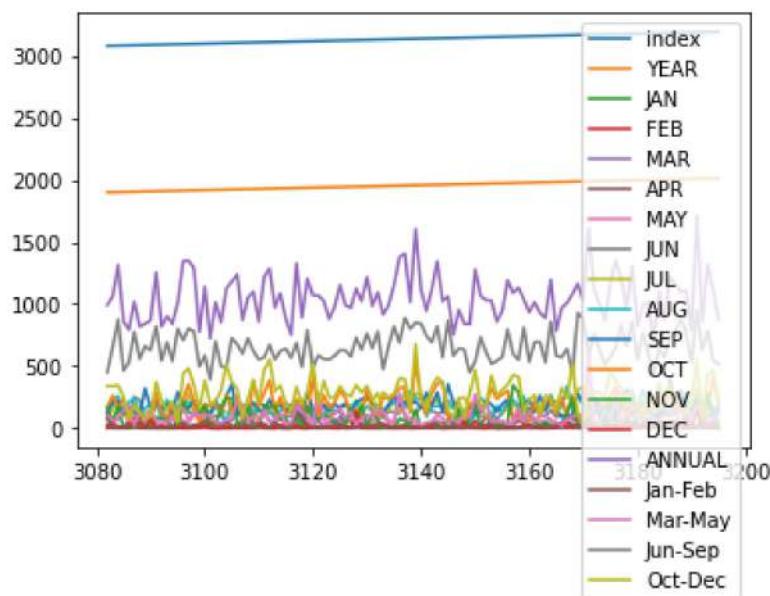
```
In [447]: COASTAL_ANDHRA_PRADESH.plot.hist()
```

```
Out[447]: <AxesSubplot:ylabel='Frequency'>
```



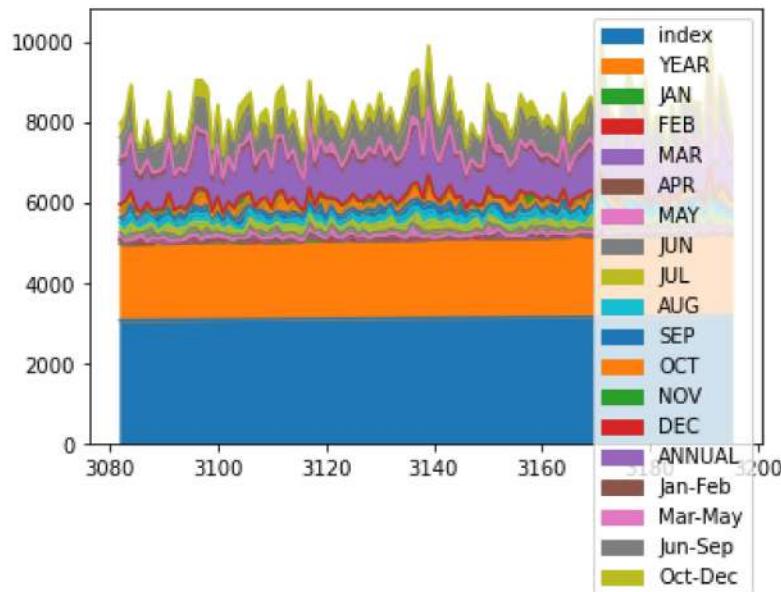
```
In [448]: COASTAL_ANDHRA_PRADESH.plot.line()
```

```
Out[448]: <AxesSubplot:>
```



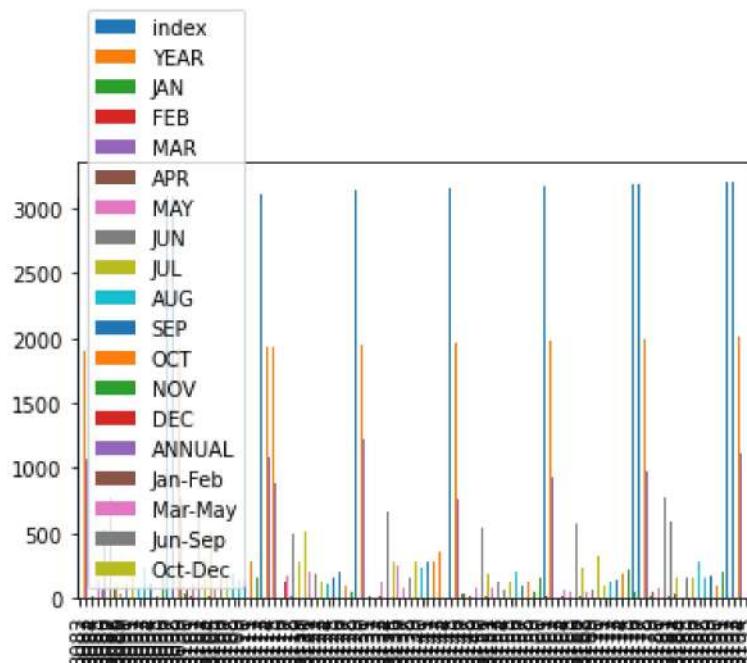
```
In [449]: COASTAL_ANDHRA_PRADESH.plot.area()
```

```
Out[449]: <AxesSubplot:>
```



```
In [450]: COASTAL_ANDHRA_PRADESH.plot.bar()
```

```
Out[450]: <AxesSubplot:>
```



TELANGANA

```
In [451]: TELANGANA=sd[3197:3311]  
TELANGANA
```

Out[451]:

	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	75.5
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	155.8
3200	3200	TELANGANA	1904	0.0	0.0	10.8	0.8	14.7	104.2	139.5	50.0	162.3	44.4
3201	3201	TELANGANA	1905	0.0	4.3	12.8	27.6	32.2	129.5	82.4	237.3	179.1	19.6
...
3306	3306	TELANGANA	2010	10.3	5.3	1.5	5.6	24.9	127.0	395.5	308.1	249.8	98.7
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	83.6
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	29.6

114 rows × 20 columns



```
In [452]: TELANGANA.info()
```

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 114 entries, 3197 to 3310  
Data columns (total 20 columns):  
 #   Column      Non-Null Count  Dtype     
---  --          --          --  
 0   index       114 non-null    int64    
 1   SUBDIVISION 114 non-null    object    
 2   YEAR        114 non-null    int64    
 3   JAN         114 non-null    float64  
 4   FEB         114 non-null    float64  
 5   MAR         114 non-null    float64  
 6   APR         114 non-null    float64  
 7   MAY         114 non-null    float64  
 8   JUN         114 non-null    float64  
 9   JUL         114 non-null    float64  
 10  AUG         114 non-null    float64  
 11  SEP         114 non-null    float64  
 12  OCT         114 non-null    float64  
 13  NOV         114 non-null    float64  
 14  DEC         114 non-null    float64
```

```
In [453]: TELANGANA.describe()
```

Out[453]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3253.500000	1957.500000	7.616667	9.773684	12.348246	17.768421	25.392105
std	33.052988	33.052988	13.911744	15.263596	18.645008	15.358975	23.746352
min	3197.000000	1901.000000	0.000000	0.000000	0.000000	0.100000	0.200000
25%	3225.250000	1929.250000	0.000000	0.000000	1.400000	6.925000	8.425000
50%	3253.500000	1957.500000	1.000000	3.750000	4.700000	14.000000	20.500000
75%	3281.750000	1985.750000	9.350000	14.000000	15.050000	24.625000	34.550000
max	3310.000000	2014.000000	98.700000	79.100000	108.600000	105.600000	159.800000

◀ ▶

```
In [454]: TELANGANA.columns
```

Out[454]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY', 'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb', 'Mar-May', 'Jun-Sep', 'Oct-Dec'], dtype='object')

```
In [455]: TELANGANA.dropna()
```

Out[455]:

	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	75.5
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	155.8
3200	3200	TELANGANA	1904	0.0	0.0	10.8	0.8	14.7	104.2	139.5	50.0	162.3	44.4
3201	3201	TELANGANA	1905	0.0	4.3	12.8	27.6	32.2	129.5	82.4	237.3	179.1	19.6
...
3306	3306	TELANGANA	2010	10.3	5.3	1.5	5.6	24.9	127.0	395.5	308.1	249.8	98.7
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	83.6
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	29.6

114 rows × 20 columns

◀ ▶

```
In [456]: TELANGANA.fillna(356)
```

Out[456]:

	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	75.5
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	155.8
3200	3200	TELANGANA	1904	0.0	0.0	10.8	0.8	14.7	104.2	139.5	50.0	162.3	44.4
3201	3201	TELANGANA	1905	0.0	4.3	12.8	27.6	32.2	129.5	82.4	237.3	179.1	19.6
...
3306	3306	TELANGANA	2010	10.3	5.3	1.5	5.6	24.9	127.0	395.5	308.1	249.8	98.7
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	83.6
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	29.6

114 rows × 20 columns



```
In [457]: np.shape(TELANGANA)
```

Out[457]: (114, 20)

```
In [458]: np.size(TELANGANA)
```

Out[458]: 2280

In [459]: TELANGANA.isna()

Out[459]:

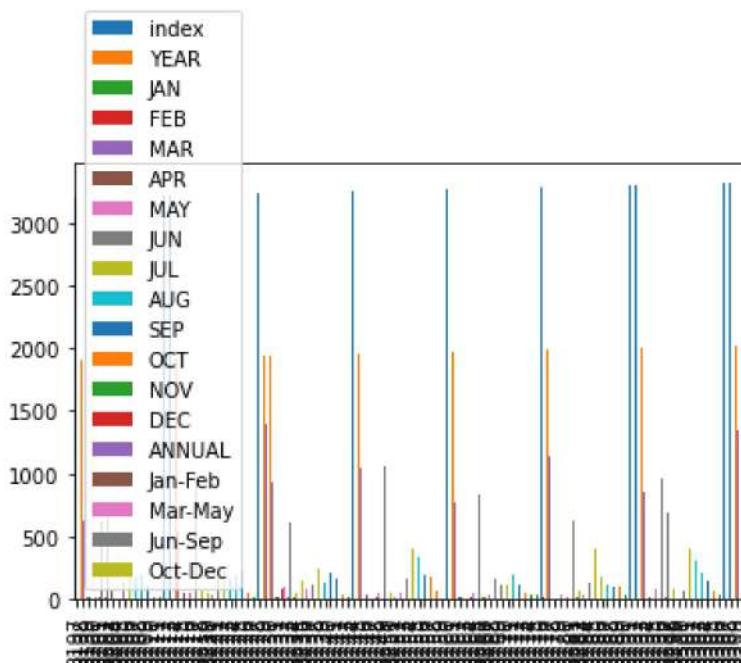
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3197	False		False										
3198	False		False										
3199	False		False										
3200	False		False										
3201	False		False										
...
3306	False		False										
3307	False		False										
3308	False		False										
3309	False		False										
3310	False		False										

114 rows × 20 columns



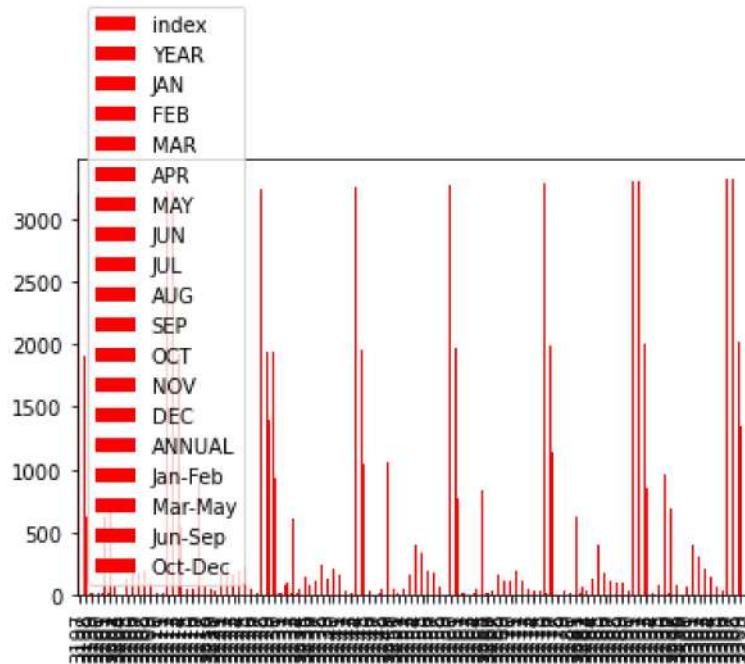
In [460]: TELANGANA.plot.bar()

Out[460]: <AxesSubplot:>



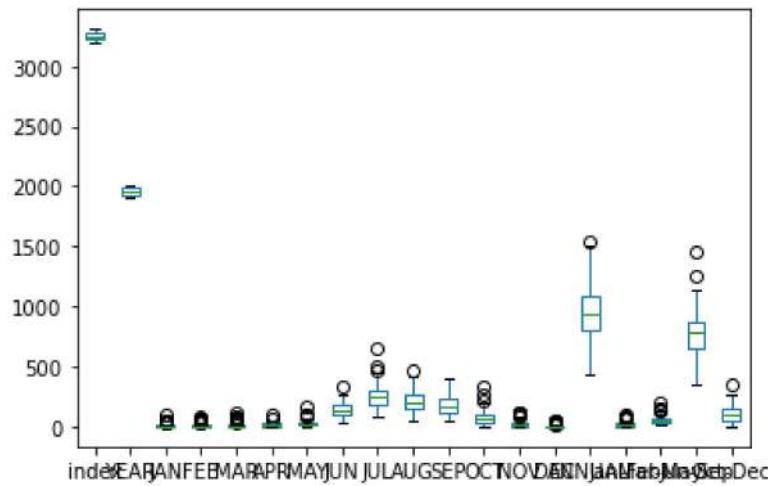
```
In [461]: TELANGANA.plot.bar(color='r')
```

```
Out[461]: <AxesSubplot:>
```



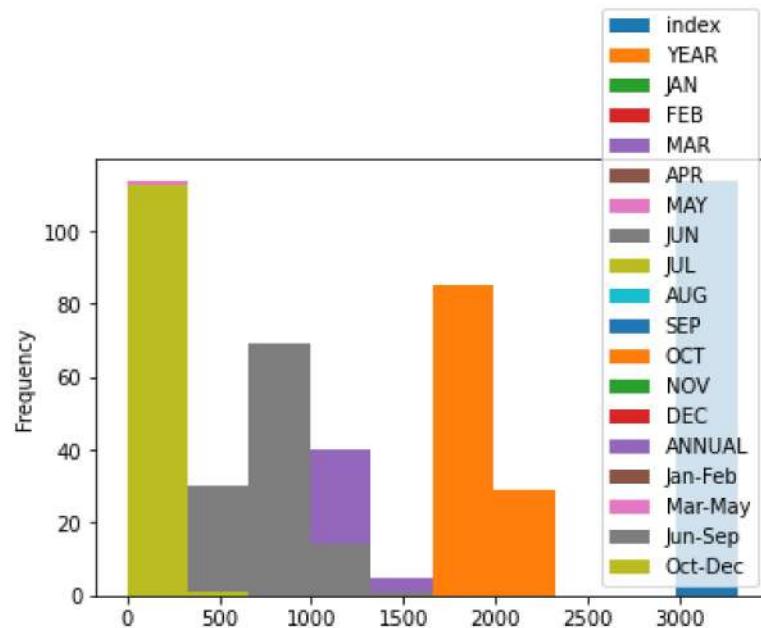
```
In [462]: TELANGANA.plot.box()
```

```
Out[462]: <AxesSubplot:>
```



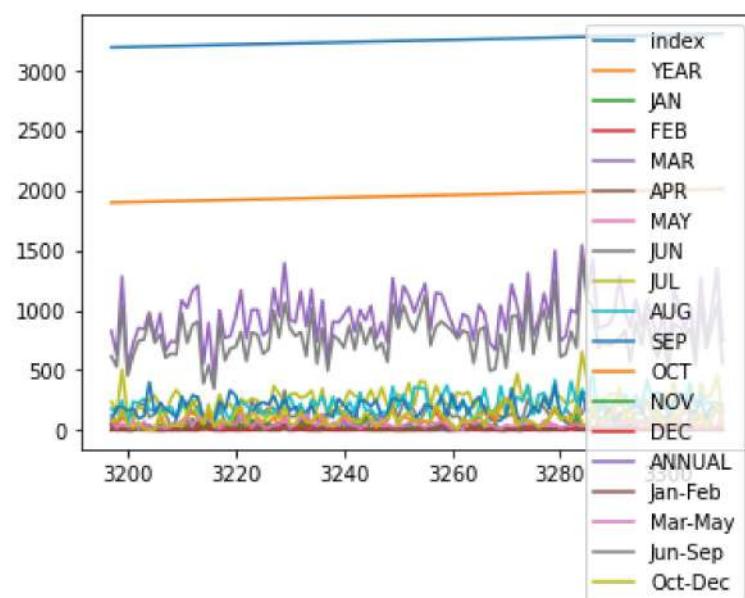
```
In [463]: TELANGANA.plot.hist()
```

```
Out[463]: <AxesSubplot:ylabel='Frequency'>
```



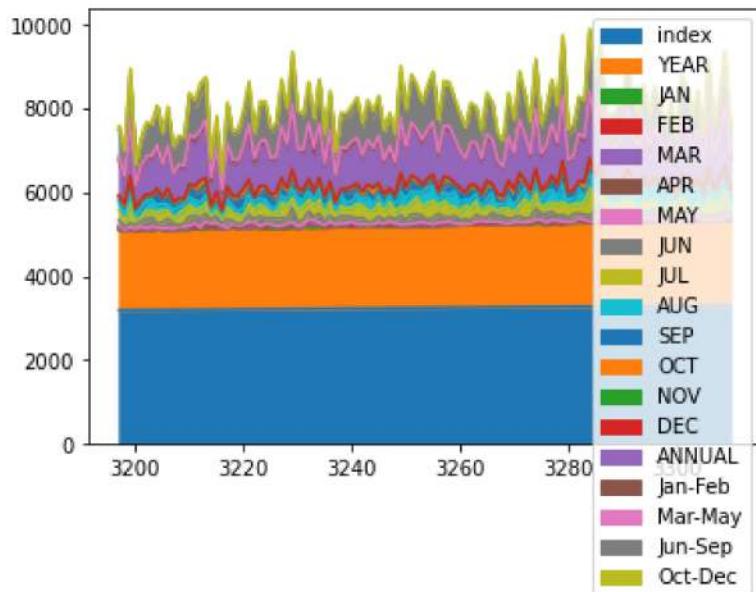
```
In [464]: TELANGANA.plot.line()
```

```
Out[464]: <AxesSubplot:>
```



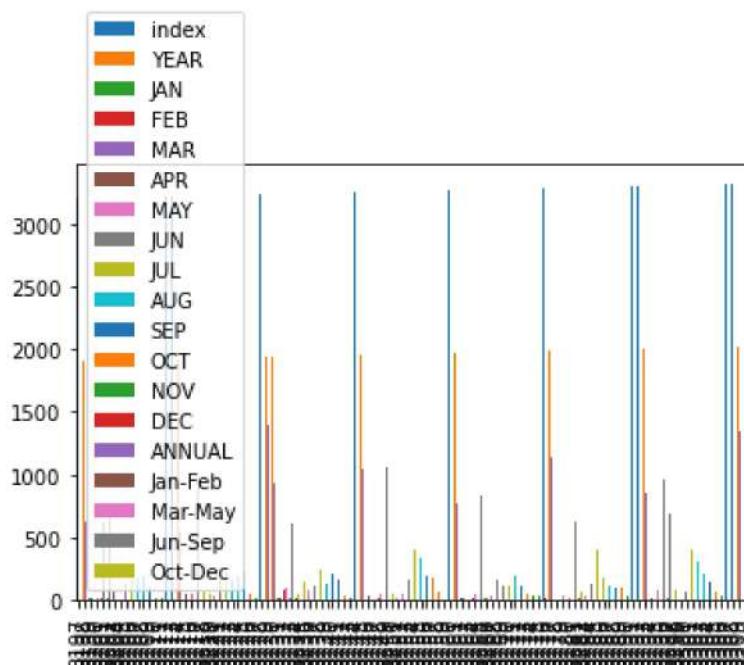
In [465]: TELANGANA.plot.area()

Out[465]: <AxesSubplot:>



In [466]: TELANGANA.plot.bar()

Out[466]: <AxesSubplot:>



RAYALSEEMA

```
In [467]: RAYALSEEMA=sd[3312:3426]  
RAYALSEEMA
```

Out[467]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
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	188.1
3314	3314	RAYALSEEMA	1903	30.0	0.1	0.0	3.6	80.5	67.5	127.5	140.6	219.7	95.1
3315	3315	RAYALSEEMA	1904	14.8	0.0	1.7	7.1	58.8	39.8	75.1	19.4	84.7	111.1
3316	3316	RAYALSEEMA	1905	6.5	6.8	17.0	18.3	44.2	66.1	50.9	219.3	36.5	180.1
...
3421	3421	RAYALSEEMA	2010	4.7	0.8	0.6	13.0	65.4	108.3	187.6	155.0	122.9	83.4
3422	3422	RAYALSEEMA	2011	0.8	12.1	0.0	34.6	33.0	44.5	128.9	163.6	71.2	107.1
3423	3423	RAYALSEEMA	2012	2.7	0.0	2.5	32.7	38.8	47.0	139.7	120.0	69.5	113.1
3424	3424	RAYALSEEMA	2013	1.3	30.6	11.5	26.8	38.9	73.8	95.7	110.3	163.2	169.1
3425	3425	RAYALSEEMA	2014	0.2	0.7	12.5	5.1	46.7	66.3	68.7	115.1	81.4	104.6

114 rows × 20 columns

In [468]: RAYALSEEMA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3312 to 3425
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [469]: RAYALSEEMA.describe()

Out[469]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3368.500000	1957.500000	9.937719	5.729825	8.029825	19.338596	50.570175	64.500000
std	33.052988	33.052988	19.191399	11.691196	13.762929	16.911265	37.721412	34.500000
min	3312.000000	1901.000000	0.000000	0.000000	0.000000	0.700000	4.100000	23.000000
25%	3340.250000	1929.250000	0.200000	0.000000	0.250000	8.175000	29.075000	44.000000
50%	3368.500000	1957.500000	2.000000	1.000000	3.950000	12.350000	41.450000	57.000000
75%	3396.750000	1985.750000	9.950000	5.800000	10.725000	26.750000	55.225000	75.000000
max	3425.000000	2014.000000	115.300000	81.000000	86.900000	93.500000	239.800000	270.000000

```
In [470]: RAYALSEEMA.columns
```

```
Out[470]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [471]: RAYALSEEMA.dropna()
```

```
Out[471]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3312	3312	RAYALSEEMA	1901	7.0	50.2	0.0	12.1	38.9	53.0	73.4	60.3	109.0	81.0
3313	3313	RAYALSEEMA	1902	10.0	0.2	1.7	11.0	36.8	73.6	41.3	148.3	181.7	188.1
3314	3314	RAYALSEEMA	1903	30.0	0.1	0.0	3.6	80.5	67.5	127.5	140.6	219.7	95.1
3315	3315	RAYALSEEMA	1904	14.8	0.0	1.7	7.1	58.8	39.8	75.1	19.4	84.7	111.1
3316	3316	RAYALSEEMA	1905	6.5	6.8	17.0	18.3	44.2	66.1	50.9	219.3	36.5	180.1
...
3421	3421	RAYALSEEMA	2010	4.7	0.8	0.6	13.0	65.4	108.3	187.6	155.0	122.9	83.4
3422	3422	RAYALSEEMA	2011	0.8	12.1	0.0	34.6	33.0	44.5	128.9	163.6	71.2	107.1
3423	3423	RAYALSEEMA	2012	2.7	0.0	2.5	32.7	38.8	47.0	139.7	120.0	69.5	113.1
3424	3424	RAYALSEEMA	2013	1.3	30.6	11.5	26.8	38.9	73.8	95.7	110.3	163.2	169.1
3425	3425	RAYALSEEMA	2014	0.2	0.7	12.5	5.1	46.7	66.3	68.7	115.1	81.4	104.0

114 rows × 20 columns

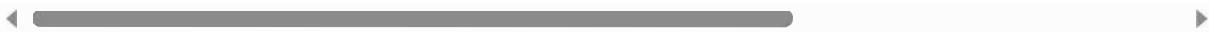


```
In [472]: RAYALSEEMA.fillna(356)
```

Out[472]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
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	188.1
3314	3314	RAYALSEEMA	1903	30.0	0.1	0.0	3.6	80.5	67.5	127.5	140.6	219.7	95.1
3315	3315	RAYALSEEMA	1904	14.8	0.0	1.7	7.1	58.8	39.8	75.1	19.4	84.7	111.1
3316	3316	RAYALSEEMA	1905	6.5	6.8	17.0	18.3	44.2	66.1	50.9	219.3	36.5	180.1
...
3421	3421	RAYALSEEMA	2010	4.7	0.8	0.6	13.0	65.4	108.3	187.6	155.0	122.9	83.4
3422	3422	RAYALSEEMA	2011	0.8	12.1	0.0	34.6	33.0	44.5	128.9	163.6	71.2	107.1
3423	3423	RAYALSEEMA	2012	2.7	0.0	2.5	32.7	38.8	47.0	139.7	120.0	69.5	113.1
3424	3424	RAYALSEEMA	2013	1.3	30.6	11.5	26.8	38.9	73.8	95.7	110.3	163.2	169.1
3425	3425	RAYALSEEMA	2014	0.2	0.7	12.5	5.1	46.7	66.3	68.7	115.1	81.4	104.6

114 rows × 20 columns



```
In [473]: np.shape(RAYALSEEMA)
```

Out[473]: (114, 20)

```
In [474]: np.size(RAYALSEEMA)
```

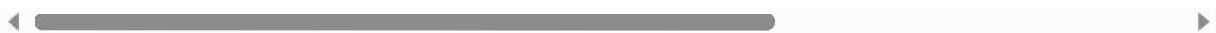
Out[474]: 2280

```
In [475]: RAYALSEEMA.isna()
```

Out[475]:

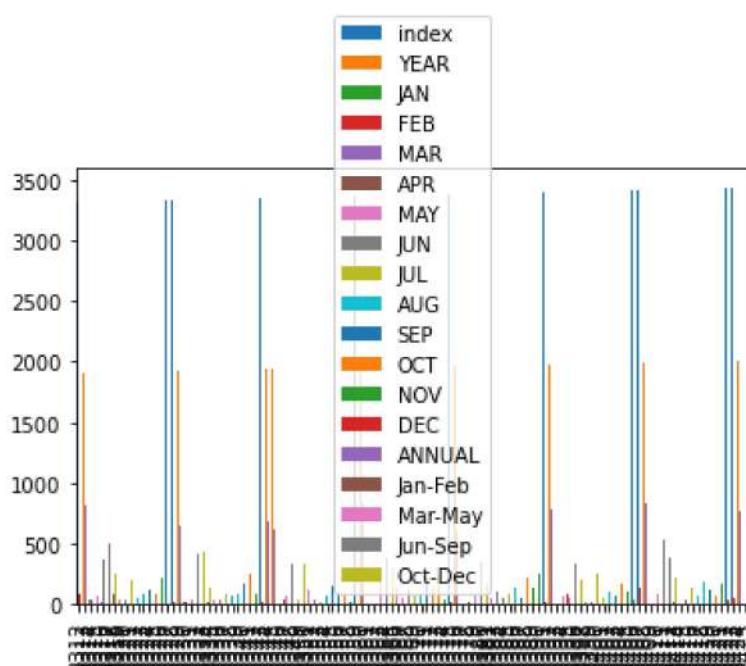
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3312	False		False										
3313	False		False										
3314	False		False										
3315	False		False										
3316	False		False										
...
3421	False		False										
3422	False		False										
3423	False		False										
3424	False		False										
3425	False		False										

114 rows × 20 columns



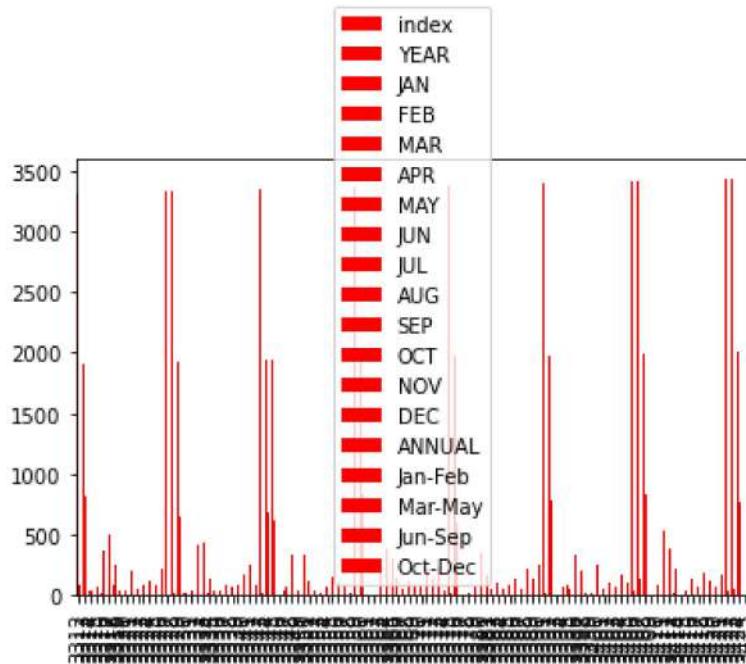
```
In [476]: RAYALSEEMA.plot.bar()
```

Out[476]: <AxesSubplot:>



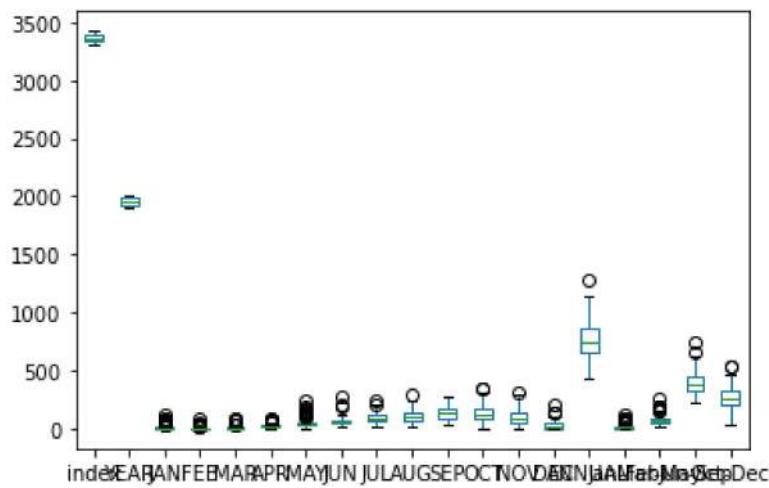
```
In [477]: RAYALSEEMA.plot.bar(color='r')
```

```
Out[477]: <AxesSubplot:>
```



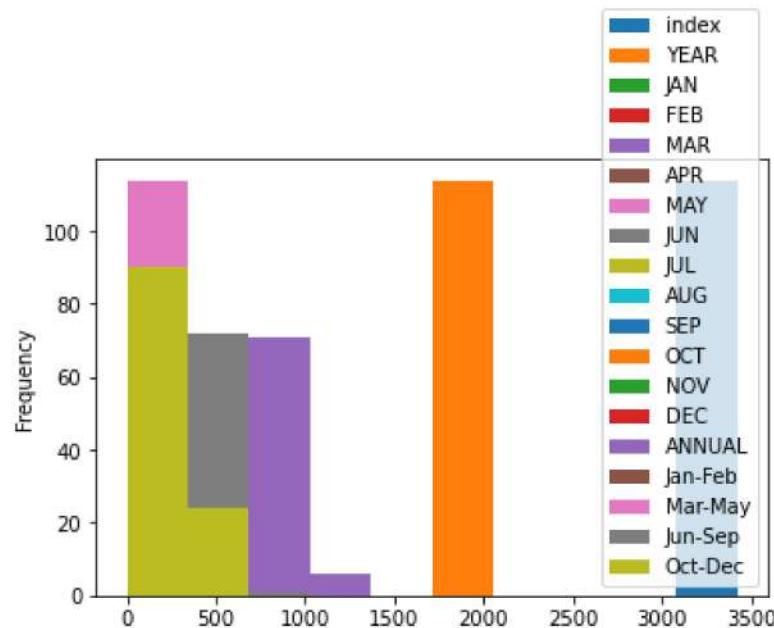
```
In [478]: RAYALSEEMA.plot.box()
```

```
Out[478]: <AxesSubplot:>
```



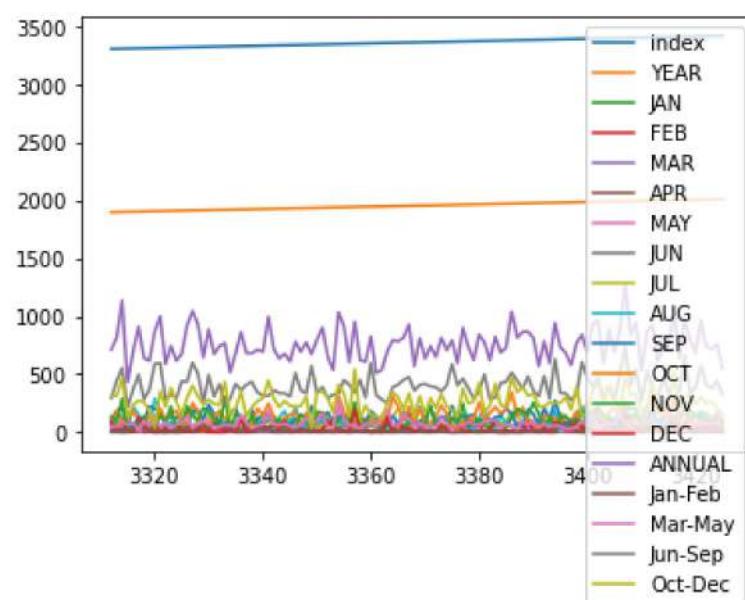
```
In [479]: RAYALSEEMA.plot.hist()
```

```
Out[479]: <AxesSubplot:ylabel='Frequency'>
```



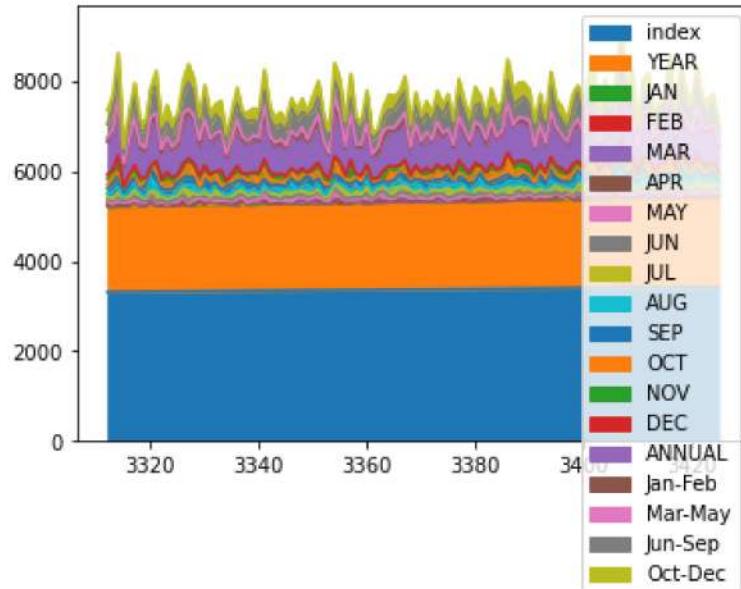
```
In [480]: RAYALSEEMA.plot.line()
```

```
Out[480]: <AxesSubplot:>
```



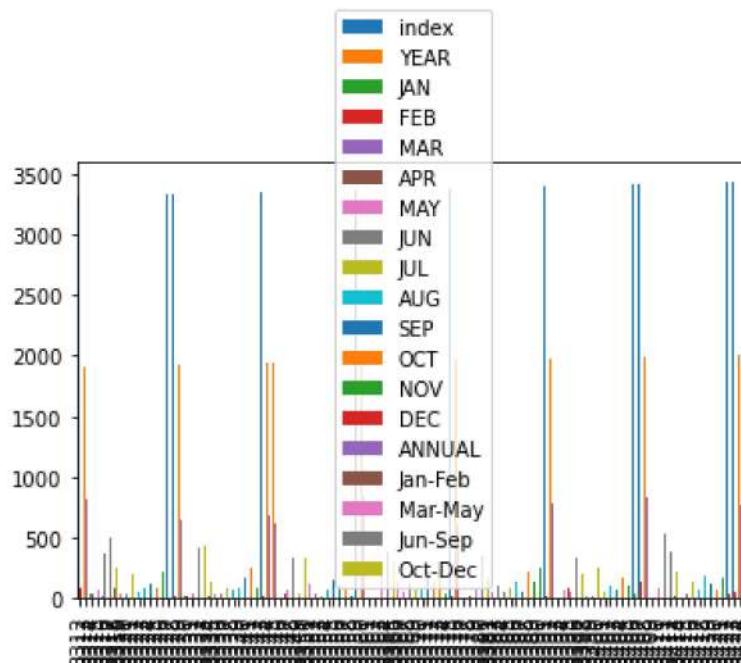
```
In [481]: RAYALSEEMA.plot.area()
```

```
Out[481]: <AxesSubplot:>
```



```
In [482]: RAYALSEEMA.plot.bar()
```

```
Out[482]: <AxesSubplot:>
```



TAMIL NADU

```
In [483]: TAMIL_NADU=sd[3427:3541]  
TAMIL_NADU
```

Out[483]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3427	3427	TAMIL NADU	1901	24.5	39.1	21.7	36.0	74.0	41.8	49.3	67.9	191.1	122.3
3428	3428	TAMIL NADU	1902	67.2	9.8	25.1	21.9	84.7	39.3	55.1	113.8	98.6	282.2
3429	3429	TAMIL NADU	1903	19.3	7.8	1.7	18.2	128.5	58.5	72.6	115.0	210.4	128.1
3430	3430	TAMIL NADU	1904	35.2	0.1	0.7	19.5	121.9	34.9	89.0	40.4	85.7	163.2
3431	3431	TAMIL NADU	1905	6.5	7.5	17.2	64.8	83.7	49.8	39.0	101.8	73.5	250.4
...
3536	3536	TAMIL NADU	2010	11.8	0.2	1.9	22.9	91.9	70.0	81.4	102.9	111.1	148.1
3537	3537	TAMIL NADU	2011	4.3	11.2	8.0	91.5	33.4	56.0	45.5	128.9	76.0	200.4
3538	3538	TAMIL NADU	2012	3.0	0.1	2.5	35.5	41.9	30.1	46.5	98.0	84.9	235.2
3539	3539	TAMIL NADU	2013	3.9	30.9	30.0	20.3	42.0	54.6	42.7	110.7	113.5	127.9
3540	3540	TAMIL NADU	2014	7.4	6.1	8.1	8.3	139.1	47.8	50.6	117.7	98.9	252.2

114 rows × 20 columns



In [484]: TAMIL_NADU.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3427 to 3540
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [485]: TAMIL_NADU.describe()

Out[485]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	11
mean	3483.500000	1957.500000	23.955263	13.520175	19.456140	44.435965	69.548246	5
std	33.052988	33.052988	32.362928	19.559106	22.487869	27.387860	31.662183	1
min	3427.000000	1901.000000	0.100000	0.000000	0.000000	5.500000	19.800000	2
25%	3455.250000	1929.250000	2.925000	1.200000	5.075000	23.625000	49.825000	3
50%	3483.500000	1957.500000	10.350000	5.550000	11.900000	36.500000	61.000000	4
75%	3511.750000	1985.750000	29.500000	18.075000	26.700000	58.450000	81.625000	6
max	3540.000000	2014.000000	141.200000	131.300000	164.700000	132.100000	204.400000	12

```
In [486]: TAMIL_NADU.columns
```

```
Out[486]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [487]: TAMIL_NADU.dropna()
```

```
Out[487]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3427	3427	TAMIL NADU	1901	24.5	39.1	21.7	36.0	74.0	41.8	49.3	67.9	191.1	122.3
3428	3428	TAMIL NADU	1902	67.2	9.8	25.1	21.9	84.7	39.3	55.1	113.8	98.6	282.2
3429	3429	TAMIL NADU	1903	19.3	7.8	1.7	18.2	128.5	58.5	72.6	115.0	210.4	128.1
3430	3430	TAMIL NADU	1904	35.2	0.1	0.7	19.5	121.9	34.9	89.0	40.4	85.7	163.2
3431	3431	TAMIL NADU	1905	6.5	7.5	17.2	64.8	83.7	49.8	39.0	101.8	73.5	250.4
...
3536	3536	TAMIL NADU	2010	11.8	0.2	1.9	22.9	91.9	70.0	81.4	102.9	111.1	148.1
3537	3537	TAMIL NADU	2011	4.3	11.2	8.0	91.5	33.4	56.0	45.5	128.9	76.0	200.4
3538	3538	TAMIL NADU	2012	3.0	0.1	2.5	35.5	41.9	30.1	46.5	98.0	84.9	235.2
3539	3539	TAMIL NADU	2013	3.9	30.9	30.0	20.3	42.0	54.6	42.7	110.7	113.5	127.9
3540	3540	TAMIL NADU	2014	7.4	6.1	8.1	8.3	139.1	47.8	50.6	117.7	98.9	252.2

114 rows × 20 columns



```
In [488]: TAMIL_NADU.fillna(356)
```

Out[488]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
3427	3427	TAMIL NADU	1901	24.5	39.1	21.7	36.0	74.0	41.8	49.3	67.9	191.1	122.3
3428	3428	TAMIL NADU	1902	67.2	9.8	25.1	21.9	84.7	39.3	55.1	113.8	98.6	282.2
3429	3429	TAMIL NADU	1903	19.3	7.8	1.7	18.2	128.5	58.5	72.6	115.0	210.4	128.1
3430	3430	TAMIL NADU	1904	35.2	0.1	0.7	19.5	121.9	34.9	89.0	40.4	85.7	163.2
3431	3431	TAMIL NADU	1905	6.5	7.5	17.2	64.8	83.7	49.8	39.0	101.8	73.5	250.4
...
3536	3536	TAMIL NADU	2010	11.8	0.2	1.9	22.9	91.9	70.0	81.4	102.9	111.1	148.1
3537	3537	TAMIL NADU	2011	4.3	11.2	8.0	91.5	33.4	56.0	45.5	128.9	76.0	200.4
3538	3538	TAMIL NADU	2012	3.0	0.1	2.5	35.5	41.9	30.1	46.5	98.0	84.9	235.2
3539	3539	TAMIL NADU	2013	3.9	30.9	30.0	20.3	42.0	54.6	42.7	110.7	113.5	127.9
3540	3540	TAMIL NADU	2014	7.4	6.1	8.1	8.3	139.1	47.8	50.6	117.7	98.9	252.2

114 rows × 20 columns



```
In [489]: np.shape(TAMIL_NADU)
```

Out[489]: (114, 20)

```
In [490]: np.size(TAMIL_NADU)
```

Out[490]: 2280

```
In [491]: TAMIL_NADU.isna()
```

Out[491]:

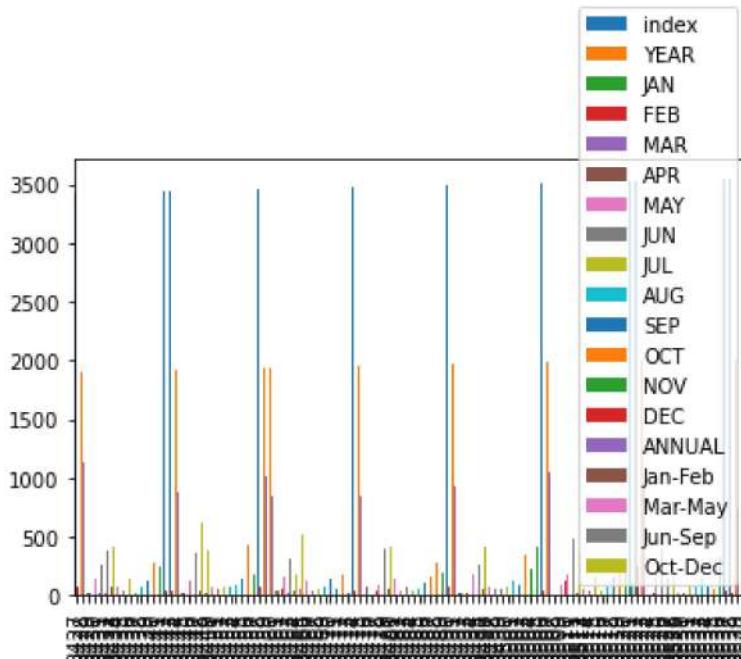
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3427	False		False										
3428	False		False										
3429	False		False										
3430	False		False										
3431	False		False										
...
3536	False		False										
3537	False		False										
3538	False		False										
3539	False		False										
3540	False		False										

114 rows × 20 columns

◀ ▶

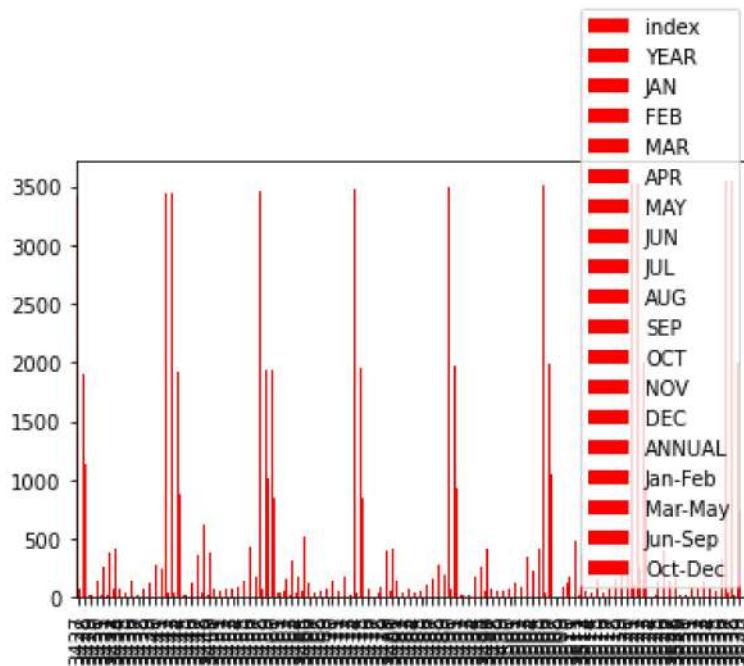
```
In [492]: TAMIL_NADU.plot.bar()
```

Out[492]: <AxesSubplot:>



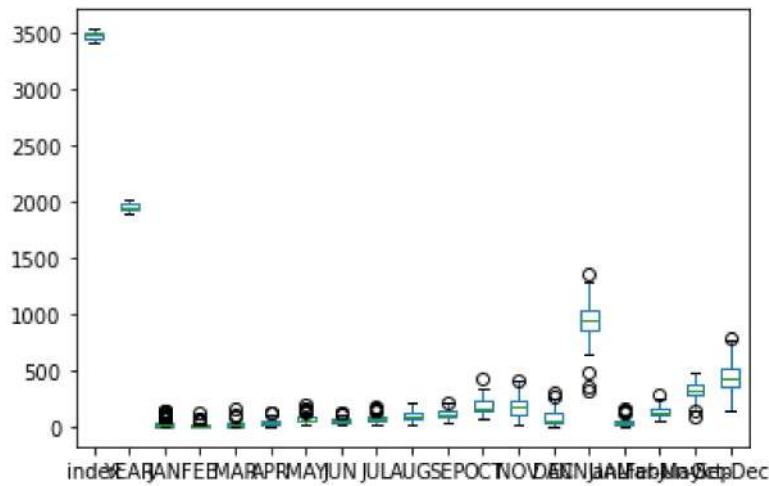
```
In [493]: TAMIL_NADU.plot.bar(color='r')
```

```
Out[493]: <AxesSubplot:>
```



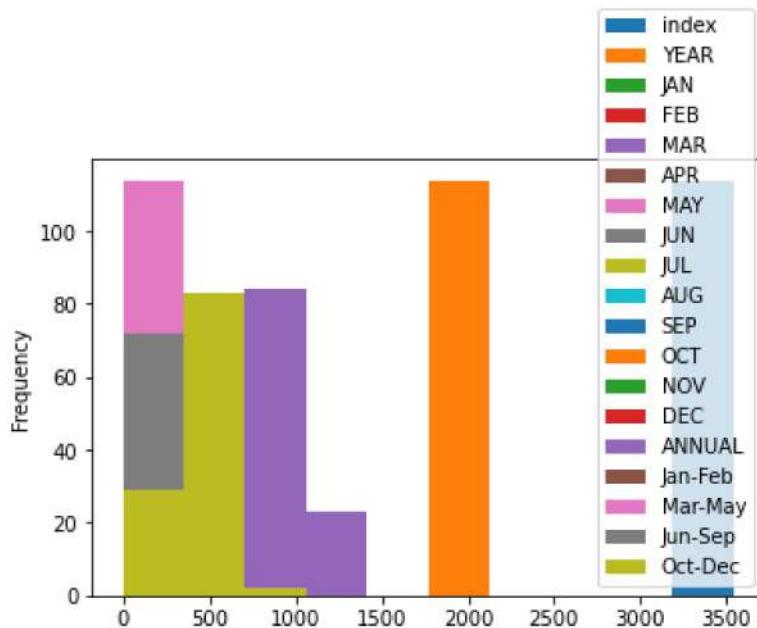
```
In [494]: TAMIL_NADU.plot.box()
```

```
Out[494]: <AxesSubplot:>
```



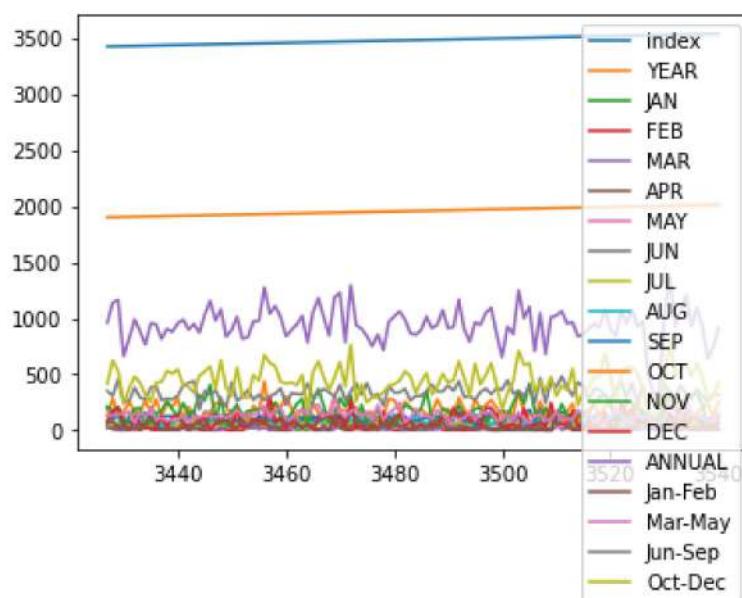
```
In [495]: TAMIL_NADU.plot.hist()
```

```
Out[495]: <AxesSubplot:ylabel='Frequency'>
```



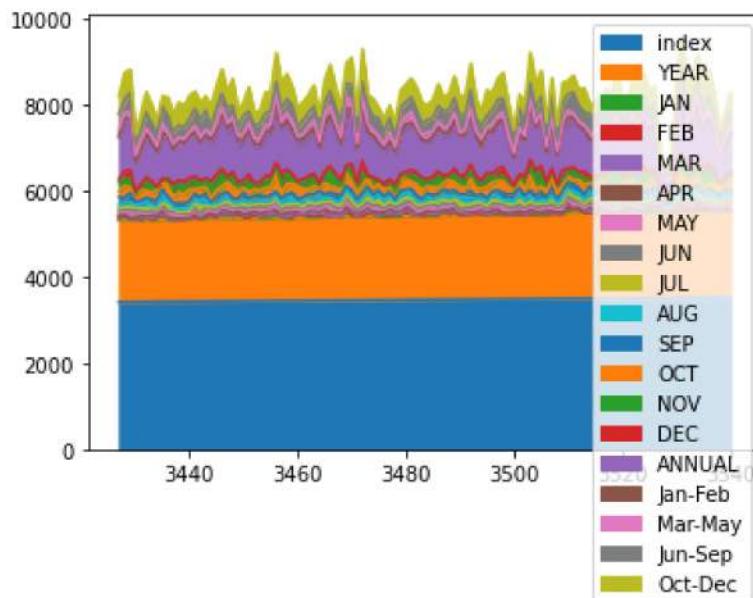
```
In [496]: TAMIL_NADU.plot.line()
```

```
Out[496]: <AxesSubplot:>
```



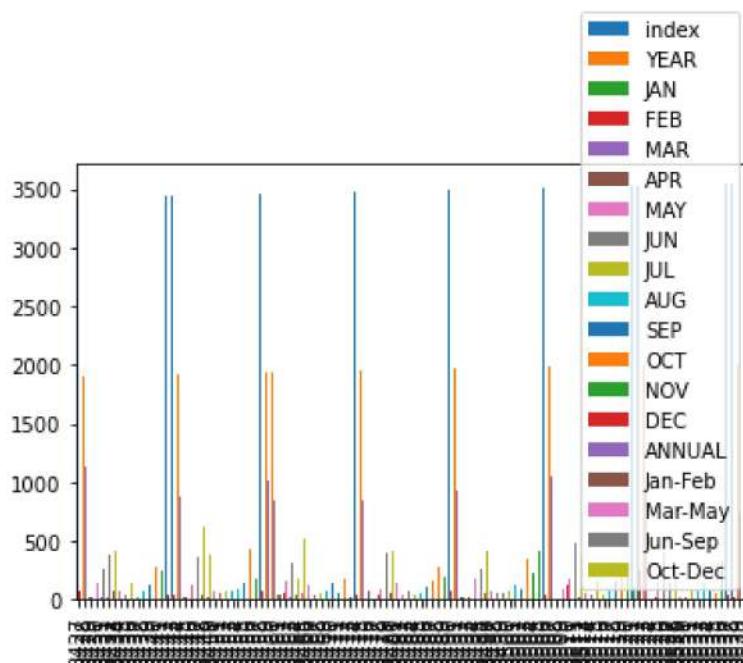
```
In [497]: TAMIL_NADU.plot.area()
```

```
Out[497]: <AxesSubplot:>
```



```
In [498]: TAMIL_NADU.plot.bar()
```

```
Out[498]: <AxesSubplot:>
```



In [499]: COASTAL_KARNATAKA=sd[3542:3656]
COASTAL_KARNATAKA

Out[499]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
3542	3542	COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0	
3543	3543	COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4	
3544	3544	COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4	
3545	3545	COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3	
3546	3546	COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9	
...	
3651	3651	COASTAL KARNATAKA	2010	14.4	0.4	3.5	62.2	80.2	682.7	1200.2	637.5	468.4	
3652	3652	COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2	
3653	3653	COASTAL KARNATAKA	2012	NaN	11.4	5.1	77.0	22.9	650.9	754.6	1027.6	382.0	
3654	3654	COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1	
3655	3655	COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3	

114 rows × 20 columns



In [500]: COASTAL_KARNATAKA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3542 to 3655
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [501]: COASTAL_KARNATAKA.describe()

Out[501]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	June	July	August	September	October	November	December	Annual	Jan-Feb	Mar-May	Jun-Sep	Oct-Dec
count	114.000000	114.000000	113.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	
mean	3598.500000	1957.500000	1.942478	1.522807	6.129825	30.554386	122.546491	84.000000	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088	125.920088
std	33.052988	33.052988	4.236845	4.749887	16.465055	23.924029	125.920088	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
min	3542.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	3570.250000	1929.250000	0.000000	0.000000	0.200000	11.325000	41.175000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000	70.000000
50%	3598.500000	1957.500000	0.100000	0.000000	1.450000	24.700000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000	80.150000
75%	3626.750000	1985.750000	2.000000	0.500000	5.650000	44.800000	162.225000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000	91.000000
max	3655.000000	2014.000000	23.000000	29.800000	161.400000	110.100000	699.500000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000	136.000000



```
In [502]: COASTAL_KARNATAKA.columns
```

```
Out[502]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [503]: COASTAL_KARNATAKA.dropna()
```

```
Out[503]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
3542	3542		COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0	1
3543	3543		COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4	1
3544	3544		COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4	1
3545	3545		COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3	1
3546	3546		COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9	2
...
3650	3650		COASTAL KARNATAKA	2009	0.4	0.0	35.2	24.5	100.7	450.3	1778.9	486.1	530.7	2
3651	3651		COASTAL KARNATAKA	2010	14.4	0.4	3.5	62.2	80.2	682.7	1200.2	637.5	468.4	2
3652	3652		COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2	1
3654	3654		COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1	2
3655	3655		COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3	2

113 rows × 20 columns

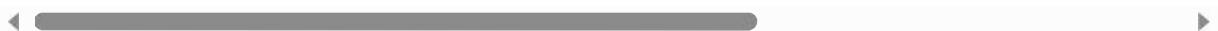


```
In [504]: COASTAL_KARNATAKA.fillna(356)
```

Out[504]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
3542	3542	COASTAL KARNATAKA	1901	1.8	0.6	10.7	52.4	81.6	960.9	991.2	606.4	108.0
3543	3543	COASTAL KARNATAKA	1902	3.2	0.3	4.9	10.2	54.6	698.4	1401.6	454.2	708.4
3544	3544	COASTAL KARNATAKA	1903	0.7	0.0	0.0	4.1	202.8	536.5	1405.5	593.8	304.4
3545	3545	COASTAL KARNATAKA	1904	2.4	0.0	4.8	23.7	93.2	1108.2	1070.0	465.6	245.3
3546	3546	COASTAL KARNATAKA	1905	0.0	0.2	0.0	6.4	83.1	767.3	777.3	586.9	172.9
...
3651	3651	COASTAL KARNATAKA	2010	14.4	0.4	3.5	62.2	80.2	682.7	1200.2	637.5	468.4
3652	3652	COASTAL KARNATAKA	2011	4.8	3.8	8.7	66.1	49.3	1018.4	1080.5	861.3	545.2
3653	3653	COASTAL KARNATAKA	2012	356.0	11.4	5.1	77.0	22.9	650.9	754.6	1027.6	382.0
3654	3654	COASTAL KARNATAKA	2013	2.4	19.6	19.0	28.5	100.4	1153.0	1515.3	680.2	379.1
3655	3655	COASTAL KARNATAKA	2014	0.0	0.3	1.9	40.5	181.9	507.0	1155.4	1121.0	379.3

114 rows × 20 columns



```
In [505]: np.shape(COASTAL_KARNATAKA)
```

Out[505]: (114, 20)

```
In [506]: np.size(COASTAL_KARNATAKA)
```

Out[506]: 2280

In [507]: COASTAL_KARNATAKA.isna()

Out[507]:

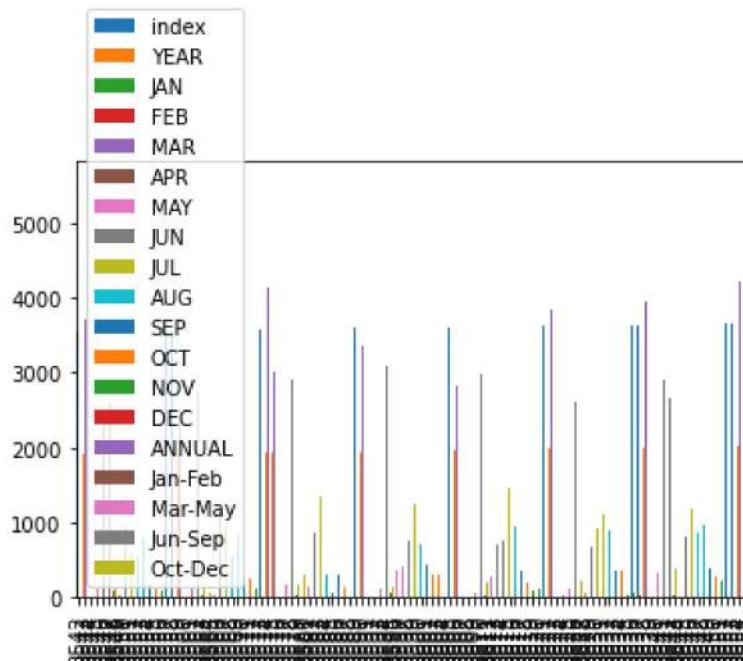
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3542	False		False										
3543	False		False										
3544	False		False										
3545	False		False										
3546	False		False										
...
3651	False		False										
3652	False		False										
3653	False		False	False	True	False							
3654	False		False										
3655	False		False										

114 rows × 20 columns



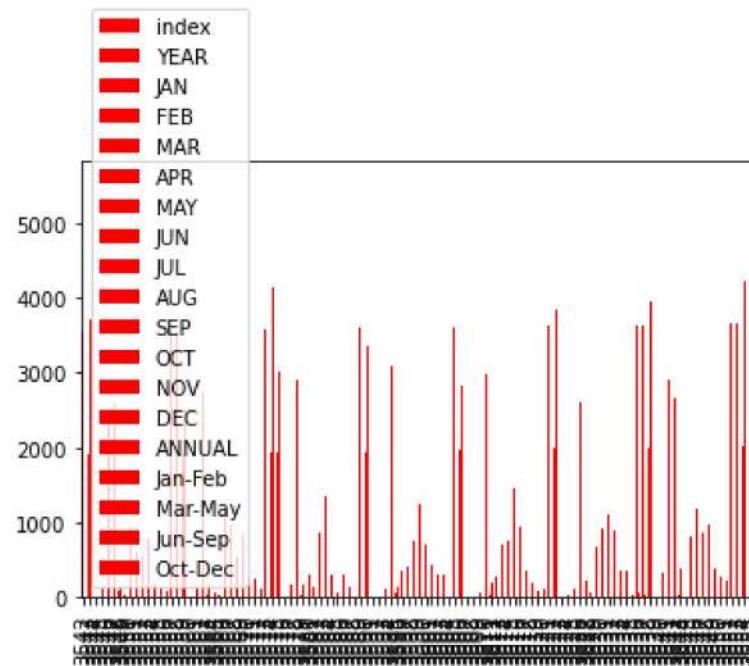
In [508]: COASTAL_KARNATAKA.plot.bar()

Out[508]: <AxesSubplot:>



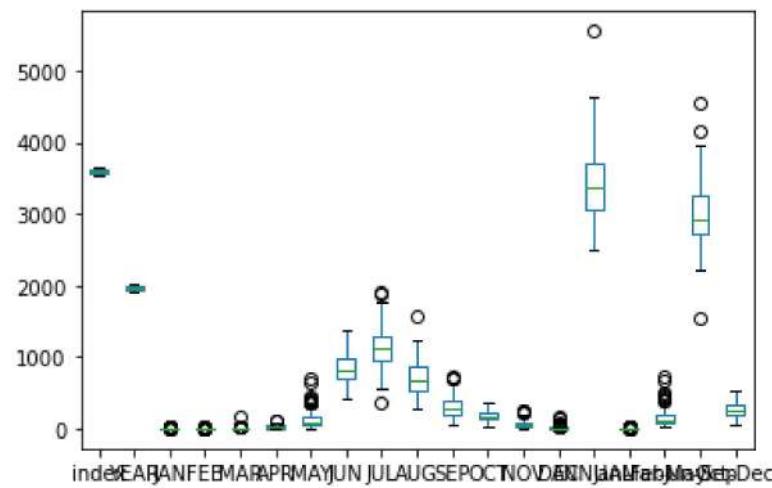
```
In [509]: COASTAL_KARNATAKA.plot.bar(color='r')
```

```
Out[509]: <AxesSubplot:>
```



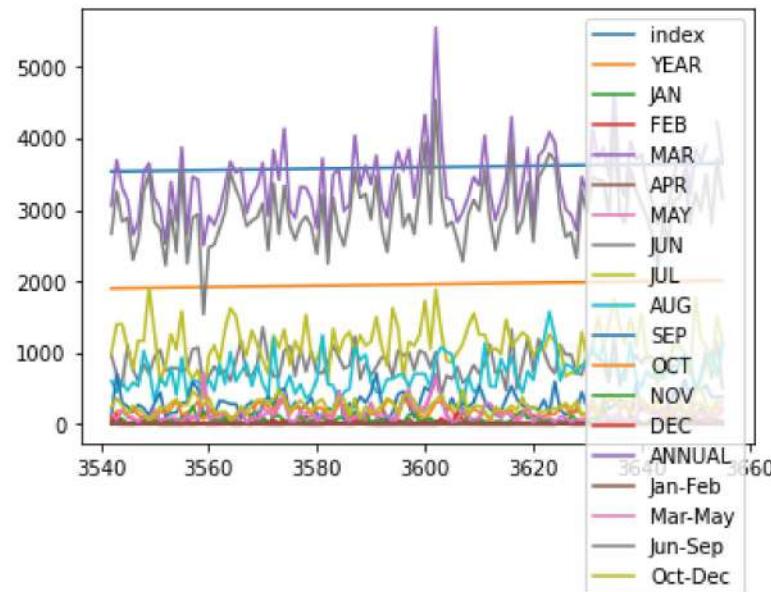
```
In [510]: COASTAL_KARNATAKA.plot.box()
```

```
Out[510]: <AxesSubplot:>
```



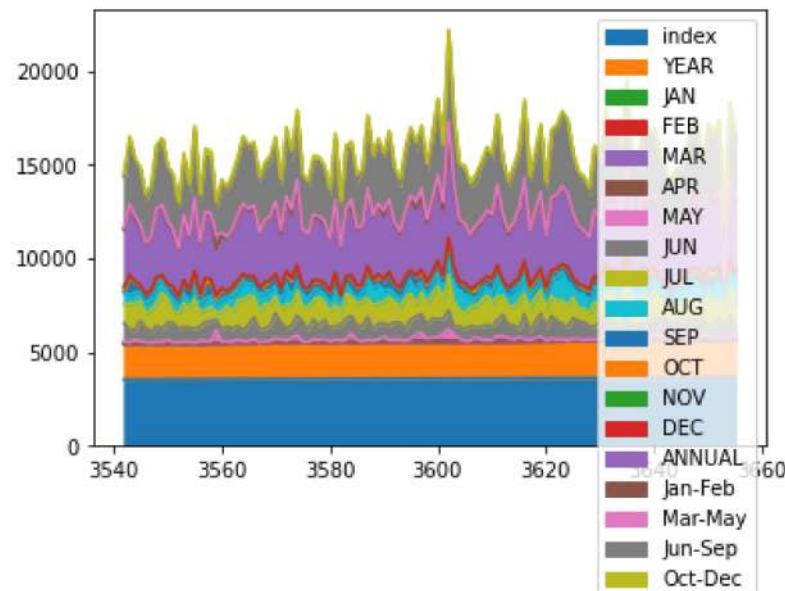
```
In [511]: COASTAL_KARNATAKA.plot.line()
```

```
Out[511]: <AxesSubplot:>
```



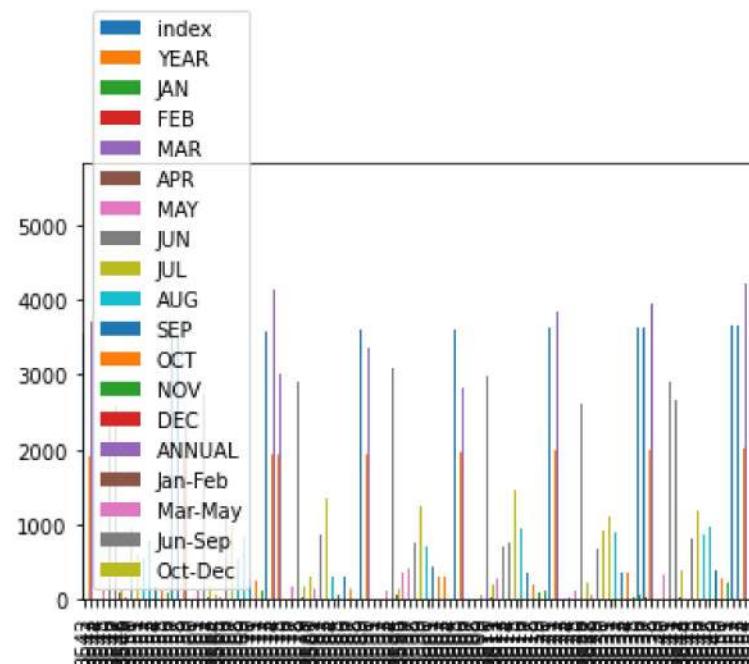
```
In [512]: COASTAL_KARNATAKA.plot.area()
```

```
Out[512]: <AxesSubplot:>
```



In [513]: COASTAL_KARNATAKA.plot.bar()

Out[513]: <AxesSubplot:>



NORTH_INTERIOR_KARNATAKAKA

In [514]: NORTH_INTERIOR_KARNATAKA=sd[3657:3771]
NORTH_INTERIOR_KARNATAKA

Out[514]:

	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
...
3766	3766	NORTH INTERIOR KARNATAKA	2010	9.6	2.5	0.5	15.5	39.5	110.1	193.5	207.5	119.2	82.1
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

114 rows × 20 columns



```
In [515]: NORTH_INTERIOR_KARNATAKAKA.info()
```

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3657 to 3770
Data columns (total 20 columns):
 #   Column      Non-Null Count Dtype  
 --- 
 0   index       114 non-null   int64  
 1   SUBDIVISION 114 non-null   object  
 2   YEAR        114 non-null   int64  
 3   JAN         114 non-null   float64 
 4   FEB         114 non-null   float64 
 5   MAR         114 non-null   float64 
 6   APR         114 non-null   float64 
 7   MAY         114 non-null   float64 
 8   JUN         114 non-null   float64 
 9   JUL         114 non-null   float64 
 10  AUG         114 non-null   float64 
 11  SEP         114 non-null   float64 
 12  OCT         114 non-null   float64 
 13  NOV         114 non-null   float64 
 14  DEC         114 non-null   float64 
 15  ANNUAL     114 non-null   float64 
 16  Jan-Feb    114 non-null   float64 
 17  Mar-May    114 non-null   float64 
 18  Jun-Sep    114 non-null   float64 
 19  Oct-Dec    114 non-null   float64 

dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB

```

```
In [516]: NORTH_INTERIOR_KARNATAKAKA.describe()
```

Out[516]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3713.500000	1957.500000	3.018421	3.200000	6.944737	24.068421	47.050877
std	33.052988	33.052988	6.224752	5.552134	12.580840	15.566576	26.693240
min	3657.000000	1901.000000	0.000000	0.000000	0.000000	0.200000	3.500000
25%	3685.250000	1929.250000	0.000000	0.000000	0.500000	12.150000	29.050000
50%	3713.500000	1957.500000	0.200000	0.350000	3.450000	22.300000	40.600000
75%	3741.750000	1985.750000	2.550000	3.775000	7.300000	32.100000	63.625000
max	3770.000000	2014.000000	28.500000	28.400000	109.200000	96.900000	127.300000

```
In [517]: NORTH_INTERIOR_KARNATAKA.columns
```

```
Out[517]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [519]: NORTH_INTERIOR_KARNATAKA.dropna()
```

```
Out[519]:
```

		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
...
3766	3766		NORTH INTERIOR KARNATAKA	2010	9.6	2.5	0.5	15.5	39.5	110.1	193.5	207.5	119.2	82.1
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

114 rows × 20 columns

```
In [520]: NORTH_INTERIOR_KARNATAKAKA.fillna(356)
```

```
Out[520]:
```

	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
...
3766	3766	NORTH INTERIOR KARNATAKA	2010	9.6	2.5	0.5	15.5	39.5	110.1	193.5	207.5	119.2	82.1
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

114 rows × 20 columns



```
In [521]: np.shape(NORTH_INTERIOR_KARNATAKAKA)
```

```
Out[521]: (114, 20)
```

```
In [522]: np.size(NORTH_INTERIOR_KARNATAKAKA)
```

```
Out[522]: 2280
```

```
In [523]: NORTH_INTERIOR_KARNATAKAKA.isna()
```

Out[523]:

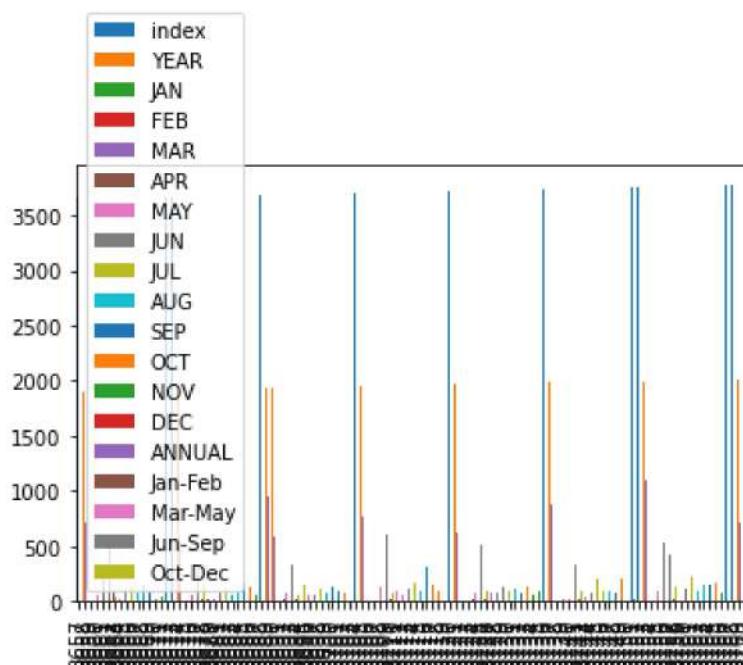
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3657	False		False										
3658	False		False										
3659	False		False										
3660	False		False										
3661	False		False										
...
3766	False		False										
3767	False		False										
3768	False		False										
3769	False		False										
3770	False		False										

114 rows × 20 columns



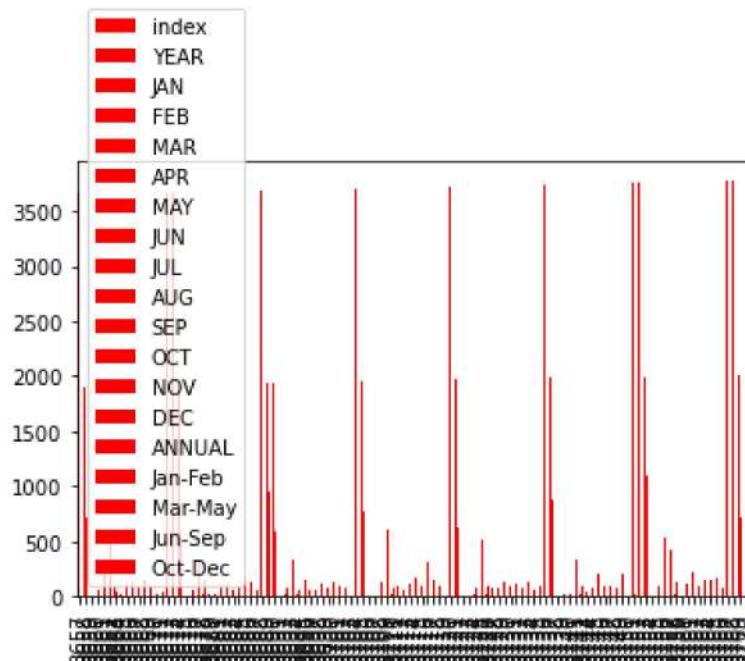
```
In [524]: NORTH_INTERIOR_KARNATAKAKA.plot.bar()
```

Out[524]: <AxesSubplot:>



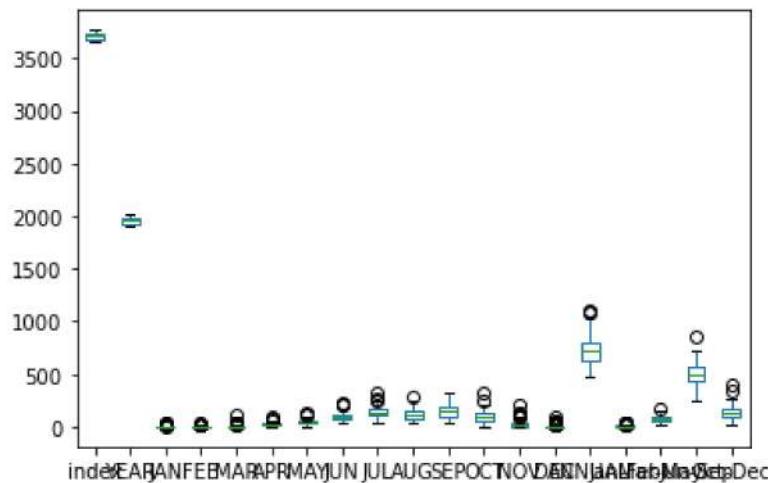
```
In [525]: NORTH_INTERIOR_KARNATAKAKA.plot.bar(color='r')
```

```
Out[525]: <AxesSubplot:>
```



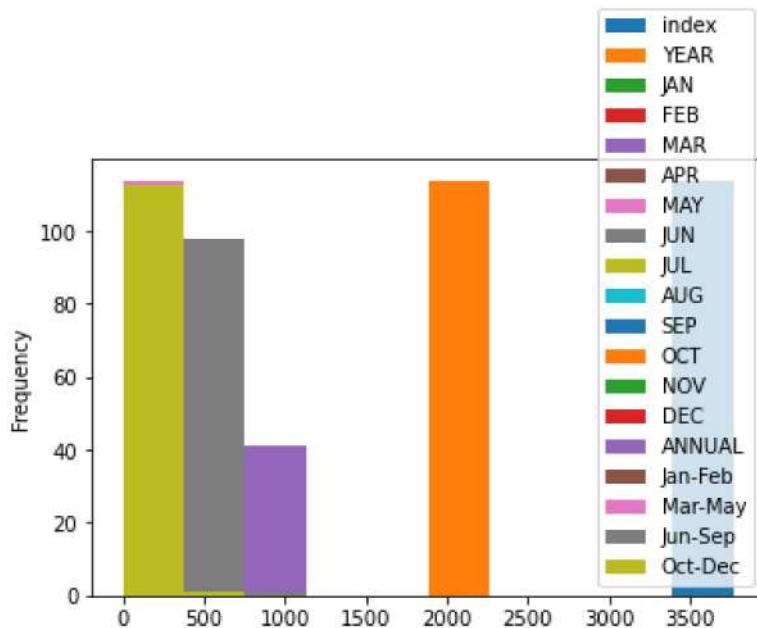
```
In [526]: NORTH_INTERIOR_KARNATAKAKA.plot.box()
```

```
Out[526]: <AxesSubplot:>
```



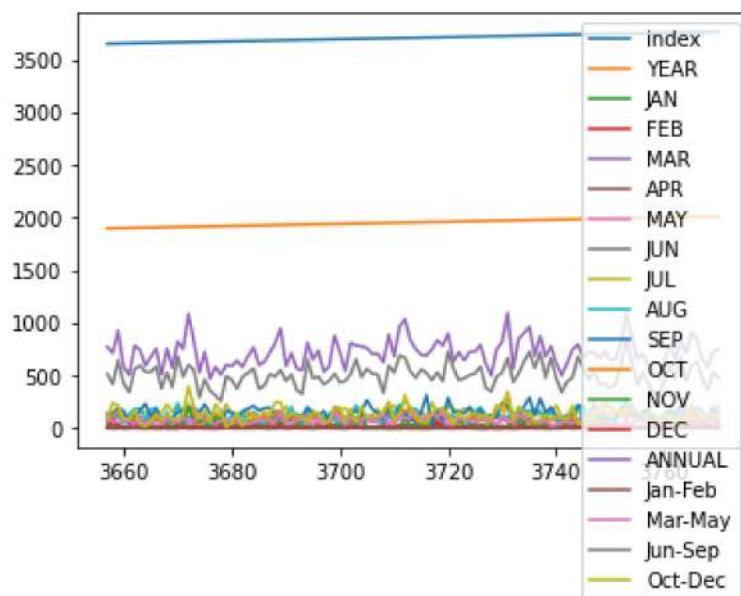
```
In [527]: NORTH_INTERIOR_KARNATAKAKA.plot.hist()
```

```
Out[527]: <AxesSubplot:ylabel='Frequency'>
```



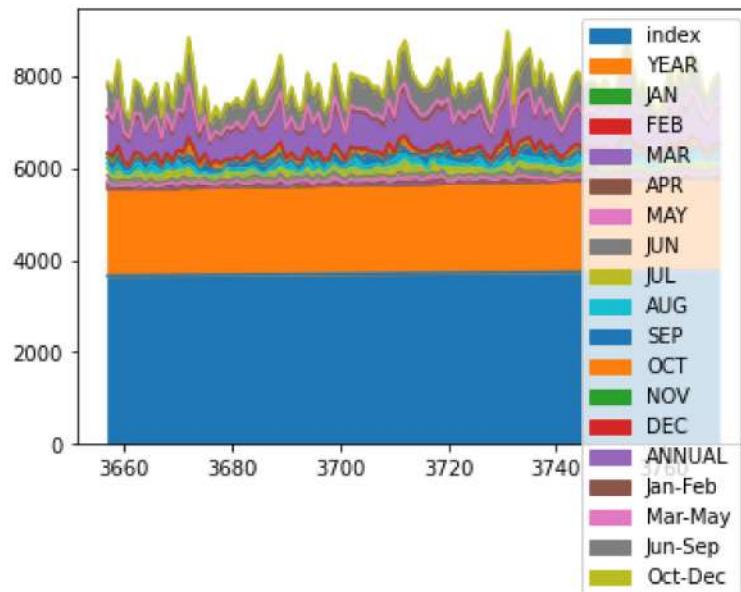
```
In [528]: NORTH_INTERIOR_KARNATAKAKA.plot.line()
```

```
Out[528]: <AxesSubplot:>
```



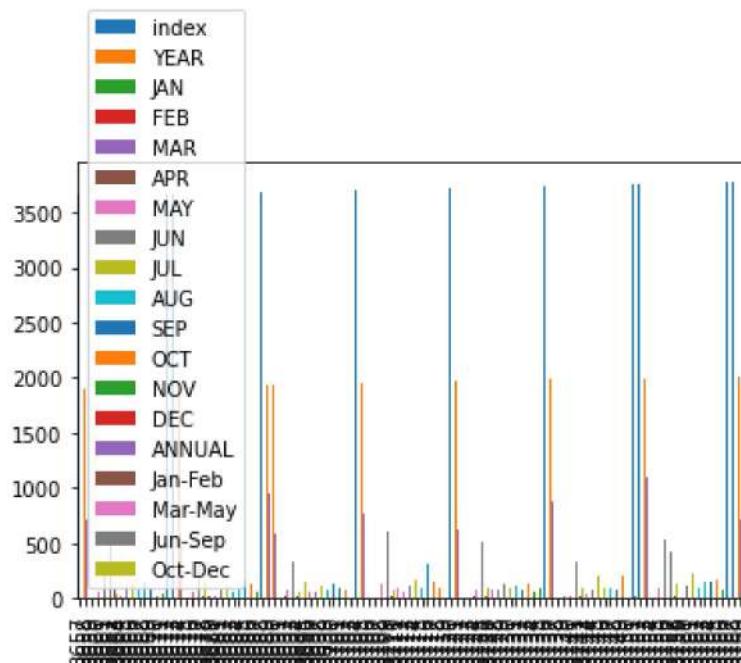
```
In [529]: NORTH_INTERIOR_KARNATAKAKA.plot.area()
```

```
Out[529]: <AxesSubplot:>
```



```
In [530]: NORTH_INTERIOR_KARNATAKAKA.plot.bar()
```

```
Out[530]: <AxesSubplot:>
```



SOUTH INTERIOR KARNATAKA

In [531]: SOUTH_INTERIOR_KARNATAKA=sd[3773:3886]
SOUTH_INTERIOR_KARNATAKA

Out[531]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3773	3773	SOUTH INTERIOR KARNATAKA	1902	1.9	0.5	6.7	42.6	97.7	91.7	210.0	82.1	138.4	219.
3774	3774	SOUTH INTERIOR KARNATAKA	1903	0.3	0.0	1.1	11.6	125.1	129.7	284.4	155.7	197.1	154.
3775	3775	SOUTH INTERIOR KARNATAKA	1904	1.0	0.5	5.2	43.5	144.7	167.9	197.1	73.2	89.6	120.
3776	3776	SOUTH INTERIOR KARNATAKA	1905	1.7	7.9	14.2	23.6	118.6	95.9	148.4	140.6	43.1	142.
3777	3777	SOUTH INTERIOR KARNATAKA	1906	14.1	1.5	2.2	4.8	46.1	116.4	211.3	256.3	109.5	173.
...
3881	3881	SOUTH INTERIOR KARNATAKA	2010	7.9	1.7	5.6	71.1	94.9	129.1	235.1	228.1	150.7	129.
3882	3882	SOUTH INTERIOR KARNATAKA	2011	2.1	12.4	12.4	80.2	83.5	177.1	202.4	199.5	111.2	144.
3883	3883	SOUTH INTERIOR KARNATAKA	2012	4.6	5.5	8.1	99.0	45.6	81.8	144.7	236.5	100.6	62.
3884	3884	SOUTH INTERIOR KARNATAKA	2013	0.5	10.1	11.7	34.6	95.6	176.2	307.4	151.7	191.8	103.
3885	3885	SOUTH INTERIOR KARNATAKA	2014	0.4	2.4	17.7	46.7	130.5	106.8	271.6	254.6	161.6	152.

113 rows × 20 columns

```
In [532]: SOUTH_INTERIOR_KARNATAKAKA.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 3773 to 3885
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         113 non-null    float64 
 4   FEB         113 non-null    float64 
 5   MAR         113 non-null    float64 
 6   APR         113 non-null    float64 
 7   MAY         113 non-null    float64 
 8   JUN         113 non-null    float64 
 9   JUL         113 non-null    float64 
 10  AUG         113 non-null    float64 
 11  SEP         113 non-null    float64 
 12  OCT         113 non-null    float64 
 13  NOV         113 non-null    float64 
 14  DEC         113 non-null    float64 
 15  ANNUAL      113 non-null    float64 
 16  Jan-Feb     113 non-null    float64 
 17  Mar-May     113 non-null    float64 
 18  Jun-Sep     113 non-null    float64 
 19  Oct-Dec     113 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

```
In [533]: SOUTH_INTERIOR_KARNATAKAKA.describe()
```

Out[533]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000	113.000000
mean	3829.000000	1958.000000	2.922124	3.953982	9.410619	42.027434	91.651327
std	32.76431	32.76431	4.846514	7.153808	13.995735	21.942059	38.392913
min	3773.000000	1902.000000	0.000000	0.000000	0.000000	4.800000	9.600000
25%	3801.000000	1930.000000	0.100000	0.100000	2.300000	25.400000	62.600000
50%	3829.000000	1958.000000	0.800000	1.200000	5.200000	40.000000	89.800000
75%	3857.000000	1986.000000	4.100000	4.600000	12.500000	51.200000	113.200000
max	3885.000000	2014.000000	24.400000	44.300000	108.900000	127.700000	190.500000



```
In [534]: SOUTH_INTERIOR_KARNATAKA.columns
```

```
Out[534]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [535]: SOUTH_INTERIOR_KARNATAKA.dropna()
```

```
Out[535]:
```

		index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3773	3773		SOUTH INTERIOR KARNATAKA	1902	1.9	0.5	6.7	42.6	97.7	91.7	210.0	82.1	138.4	219.
3774	3774		SOUTH INTERIOR KARNATAKA	1903	0.3	0.0	1.1	11.6	125.1	129.7	284.4	155.7	197.1	154.
3775	3775		SOUTH INTERIOR KARNATAKA	1904	1.0	0.5	5.2	43.5	144.7	167.9	197.1	73.2	89.6	120.
3776	3776		SOUTH INTERIOR KARNATAKA	1905	1.7	7.9	14.2	23.6	118.6	95.9	148.4	140.6	43.1	142.
3777	3777		SOUTH INTERIOR KARNATAKA	1906	14.1	1.5	2.2	4.8	46.1	116.4	211.3	256.3	109.5	173.
...
3881	3881		SOUTH INTERIOR KARNATAKA	2010	7.9	1.7	5.6	71.1	94.9	129.1	235.1	228.1	150.7	129.
3882	3882		SOUTH INTERIOR KARNATAKA	2011	2.1	12.4	12.4	80.2	83.5	177.1	202.4	199.5	111.2	144.
3883	3883		SOUTH INTERIOR KARNATAKA	2012	4.6	5.5	8.1	99.0	45.6	81.8	144.7	236.5	100.6	62.
3884	3884		SOUTH INTERIOR KARNATAKA	2013	0.5	10.1	11.7	34.6	95.6	176.2	307.4	151.7	191.8	103.
3885	3885		SOUTH INTERIOR KARNATAKA	2014	0.4	2.4	17.7	46.7	130.5	106.8	271.6	254.6	161.6	152.

113 rows × 20 columns



```
In [536]: SOUTH_INTERIOR_KARNATAKAKA.fillna(356)
```

```
Out[536]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC
3773	3773	SOUTH INTERIOR KARNATAKA	1902	1.9	0.5	6.7	42.6	97.7	91.7	210.0	82.1	138.4	219.
3774	3774	SOUTH INTERIOR KARNATAKA	1903	0.3	0.0	1.1	11.6	125.1	129.7	284.4	155.7	197.1	154.
3775	3775	SOUTH INTERIOR KARNATAKA	1904	1.0	0.5	5.2	43.5	144.7	167.9	197.1	73.2	89.6	120.
3776	3776	SOUTH INTERIOR KARNATAKA	1905	1.7	7.9	14.2	23.6	118.6	95.9	148.4	140.6	43.1	142.
3777	3777	SOUTH INTERIOR KARNATAKA	1906	14.1	1.5	2.2	4.8	46.1	116.4	211.3	256.3	109.5	173.
...
3881	3881	SOUTH INTERIOR KARNATAKA	2010	7.9	1.7	5.6	71.1	94.9	129.1	235.1	228.1	150.7	129.
3882	3882	SOUTH INTERIOR KARNATAKA	2011	2.1	12.4	12.4	80.2	83.5	177.1	202.4	199.5	111.2	144.
3883	3883	SOUTH INTERIOR KARNATAKA	2012	4.6	5.5	8.1	99.0	45.6	81.8	144.7	236.5	100.6	62.
3884	3884	SOUTH INTERIOR KARNATAKA	2013	0.5	10.1	11.7	34.6	95.6	176.2	307.4	151.7	191.8	103.
3885	3885	SOUTH INTERIOR KARNATAKA	2014	0.4	2.4	17.7	46.7	130.5	106.8	271.6	254.6	161.6	152.

113 rows × 20 columns



```
In [537]: np.shape(SOUTH_INTERIOR_KARNATAKAKA)
```

```
Out[537]: (113, 20)
```

```
In [538]: np.size(SOUTH_INTERIOR_KARNATAKAKA)
```

```
Out[538]: 2260
```

```
In [539]: SOUTH_INTERIOR_KARNATAKAKA.isna()
```

Out[539]:

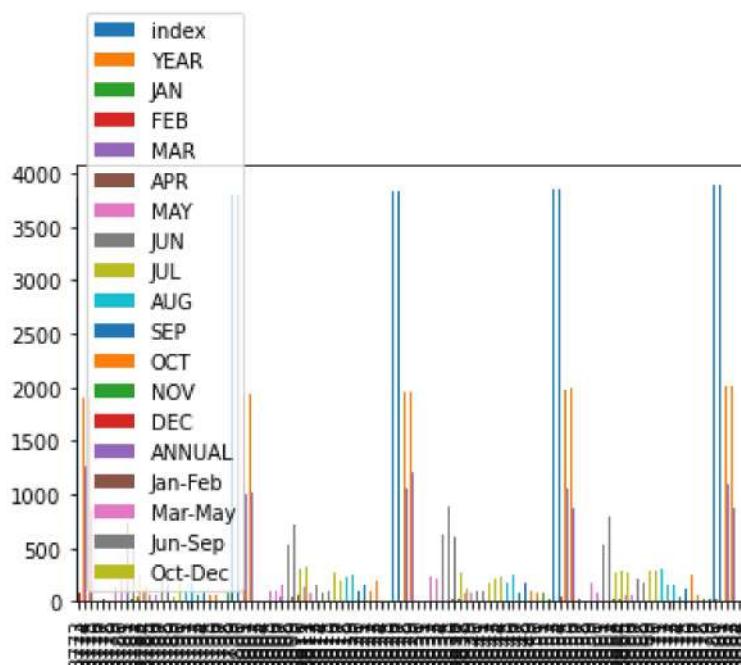
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3773	False		False										
3774	False		False										
3775	False		False										
3776	False		False										
3777	False		False										
...
3881	False		False										
3882	False		False										
3883	False		False										
3884	False		False										
3885	False		False										

113 rows × 20 columns



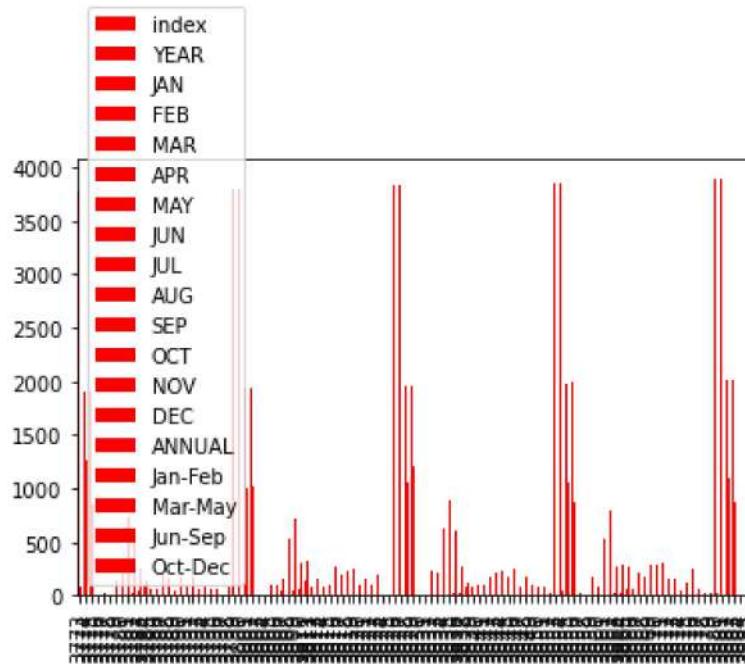
```
In [540]: SOUTH_INTERIOR_KARNATAKAKA.plot.bar()
```

Out[540]: <AxesSubplot:>



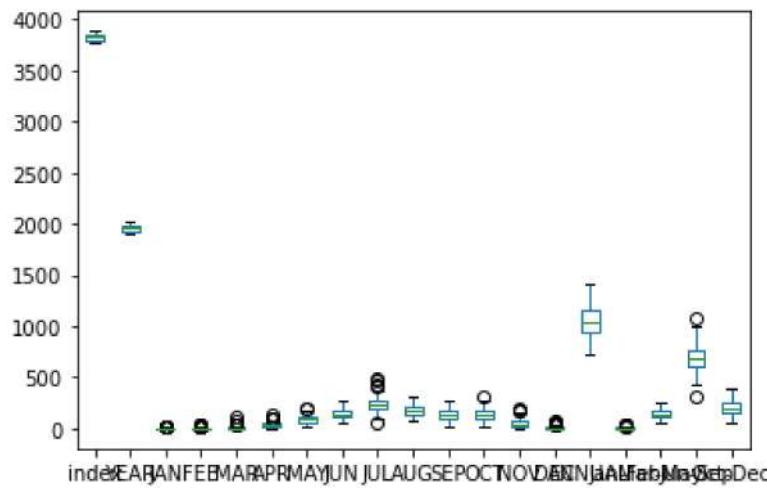
```
In [541]: SOUTH_INTERIOR_KARNATAKAKA.plot.bar(color='r')
```

```
Out[541]: <AxesSubplot:>
```



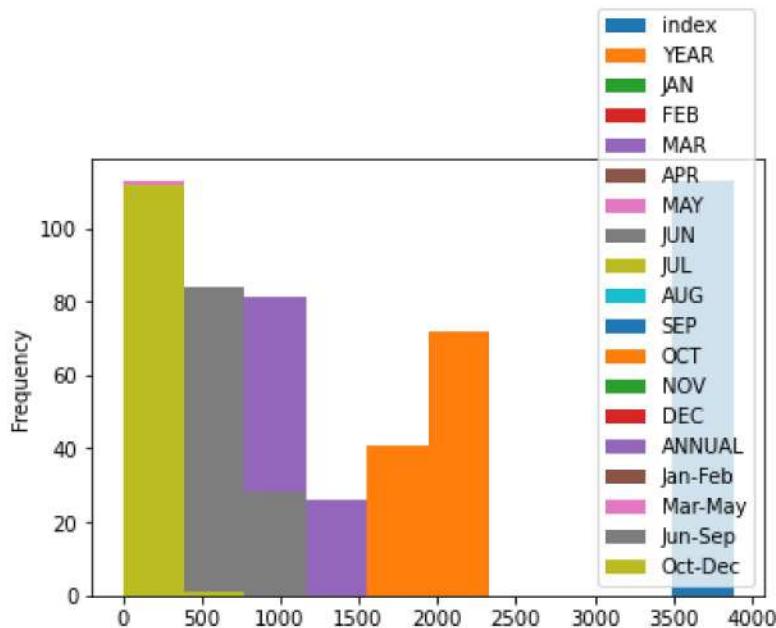
```
In [542]: SOUTH_INTERIOR_KARNATAKAKA.plot.box()
```

```
Out[542]: <AxesSubplot:>
```



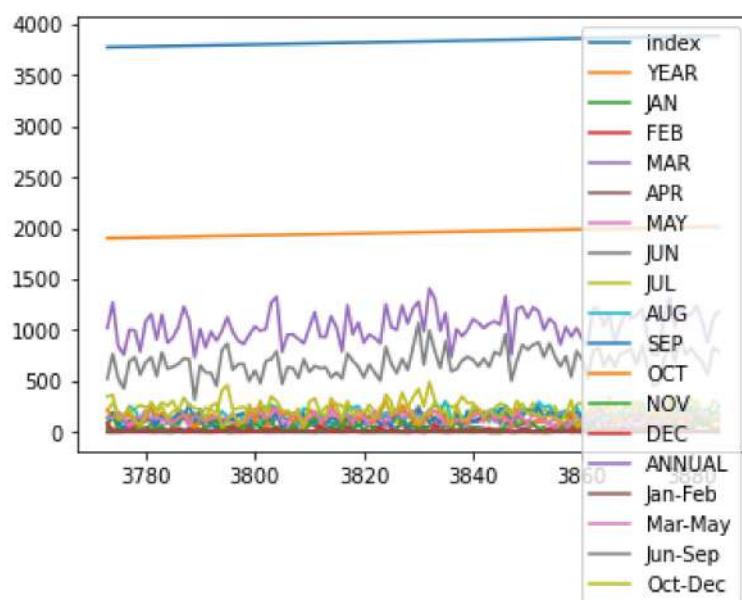
```
In [543]: SOUTH_INTERIOR_KARNATAKAKA.plot.hist()
```

```
Out[543]: <AxesSubplot:ylabel='Frequency'>
```



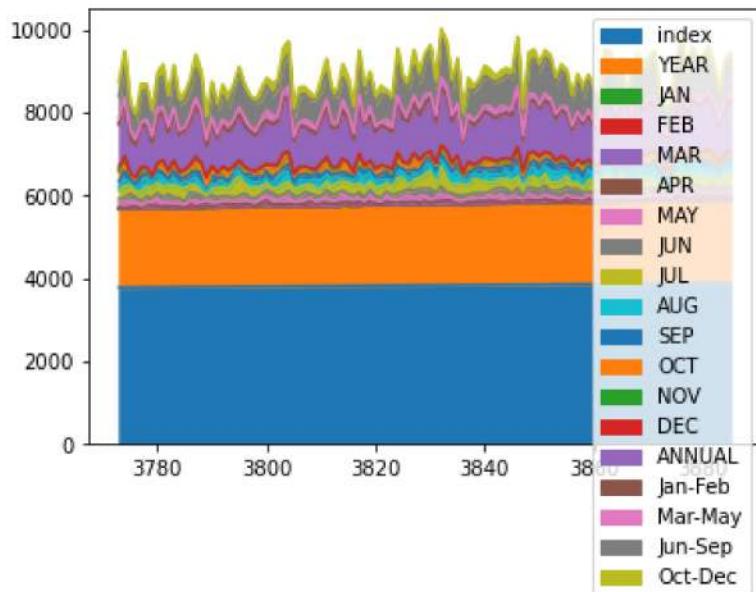
```
In [544]: SOUTH_INTERIOR_KARNATAKAKA.plot.line()
```

```
Out[544]: <AxesSubplot:>
```



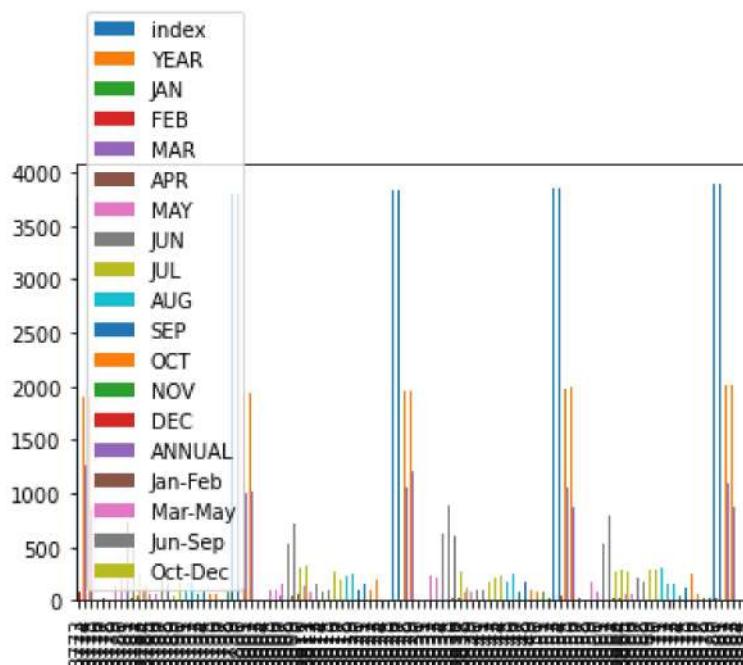
```
In [545]: SOUTH_INTERIOR_KARNATAKAKA.plot.area()
```

```
Out[545]: <AxesSubplot:>
```



```
In [546]: SOUTH_INTERIOR_KARNATAKAKA.plot.bar()
```

```
Out[546]: <AxesSubplot:>
```



KERALA

In [547]: KERALA=sd[3887:4001]
KERALA

Out[547]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
3887	3887	KERALA	1901	28.7	44.7	51.6	160.0	174.7	824.6	743.0	357.5	197.7	2
3888	3888	KERALA	1902	6.7	2.6	57.3	83.9	134.5	390.9	1205.0	315.8	491.6	3
3889	3889	KERALA	1903	3.2	18.6	3.1	83.6	249.7	558.6	1022.5	420.2	341.8	3
3890	3890	KERALA	1904	23.7	3.0	32.2	71.5	235.7	1098.2	725.5	351.8	222.7	3
3891	3891	KERALA	1905	1.2	22.3	9.4	105.9	263.3	850.2	520.5	293.6	217.2	3
...
3996	3996	KERALA	2010	18.6	1.0	31.4	138.9	190.6	667.5	629.0	356.0	275.6	4
3997	3997	KERALA	2011	20.5	45.7	24.1	165.2	124.2	788.5	536.8	492.7	391.2	2
3998	3998	KERALA	2012	7.4	11.0	21.0	171.1	95.3	430.3	362.6	501.6	241.1	1
3999	3999	KERALA	2013	3.9	40.1	49.9	49.3	119.3	1042.7	830.2	369.7	318.6	2
4000	4000	KERALA	2014	4.6	10.3	17.9	95.7	251.0	454.4	677.8	733.9	298.8	3

114 rows × 20 columns

In [548]: KERALA.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 114 entries, 3887 to 4000
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       114 non-null    int64  
 1   SUBDIVISION 114 non-null    object  
 2   YEAR        114 non-null    int64  
 3   JAN         114 non-null    float64 
 4   FEB         114 non-null    float64 
 5   MAR         114 non-null    float64 
 6   APR         114 non-null    float64 
 7   MAY         114 non-null    float64 
 8   JUN         114 non-null    float64 
 9   JUL         114 non-null    float64 
 10  AUG         114 non-null    float64 
 11  SEP         114 non-null    float64 
 12  OCT         114 non-null    float64 
 13  NOV         114 non-null    float64 
 14  DEC         114 non-null    float64 
 15  ANNUAL      114 non-null    float64 
 16  Jan-Feb     114 non-null    float64 
 17  Mar-May     114 non-null    float64 
 18  Jun-Sep     114 non-null    float64 
 19  Oct-Dec     114 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.9+ KB
```

In [549]: KERALA.describe()

Out[549]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000	114.000000
mean	3943.500000	1957.500000	12.327193	15.581579	36.698246	109.665789	230.128070	610.000000
std	33.052988	33.052988	15.583582	16.252322	30.432609	43.792087	149.907258	114.000000
min	3887.000000	1901.000000	0.000000	0.000000	0.100000	13.100000	53.400000	114.000000
25%	3915.250000	1929.250000	2.175000	4.700000	18.100000	74.350000	124.275000	510.000000
50%	3943.500000	1957.500000	6.200000	8.550000	28.300000	109.100000	183.000000	610.000000
75%	3971.750000	1985.750000	18.175000	21.400000	49.825000	135.050000	283.175000	710.000000
max	4000.000000	2014.000000	83.500000	79.000000	217.200000	238.000000	738.800000	1010.000000

```
In [550]: KERALA.columns
```

```
Out[550]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [551]: KERALA.dropna()
```

```
Out[551]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
3887	3887	KERALA	1901	28.7	44.7	51.6	160.0	174.7	824.6	743.0	357.5	197.7	2
3888	3888	KERALA	1902	6.7	2.6	57.3	83.9	134.5	390.9	1205.0	315.8	491.6	3
3889	3889	KERALA	1903	3.2	18.6	3.1	83.6	249.7	558.6	1022.5	420.2	341.8	3
3890	3890	KERALA	1904	23.7	3.0	32.2	71.5	235.7	1098.2	725.5	351.8	222.7	3
3891	3891	KERALA	1905	1.2	22.3	9.4	105.9	263.3	850.2	520.5	293.6	217.2	3
...
3996	3996	KERALA	2010	18.6	1.0	31.4	138.9	190.6	667.5	629.0	356.0	275.6	4
3997	3997	KERALA	2011	20.5	45.7	24.1	165.2	124.2	788.5	536.8	492.7	391.2	2
3998	3998	KERALA	2012	7.4	11.0	21.0	171.1	95.3	430.3	362.6	501.6	241.1	1
3999	3999	KERALA	2013	3.9	40.1	49.9	49.3	119.3	1042.7	830.2	369.7	318.6	2
4000	4000	KERALA	2014	4.6	10.3	17.9	95.7	251.0	454.4	677.8	733.9	298.8	3

114 rows × 20 columns



```
In [552]: KERALA.fillna(356)
```

```
Out[552]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
3887	3887	KERALA	1901	28.7	44.7	51.6	160.0	174.7	824.6	743.0	357.5	197.7	2
3888	3888	KERALA	1902	6.7	2.6	57.3	83.9	134.5	390.9	1205.0	315.8	491.6	3
3889	3889	KERALA	1903	3.2	18.6	3.1	83.6	249.7	558.6	1022.5	420.2	341.8	3
3890	3890	KERALA	1904	23.7	3.0	32.2	71.5	235.7	1098.2	725.5	351.8	222.7	3
3891	3891	KERALA	1905	1.2	22.3	9.4	105.9	263.3	850.2	520.5	293.6	217.2	3
...
3996	3996	KERALA	2010	18.6	1.0	31.4	138.9	190.6	667.5	629.0	356.0	275.6	4
3997	3997	KERALA	2011	20.5	45.7	24.1	165.2	124.2	788.5	536.8	492.7	391.2	2
3998	3998	KERALA	2012	7.4	11.0	21.0	171.1	95.3	430.3	362.6	501.6	241.1	1
3999	3999	KERALA	2013	3.9	40.1	49.9	49.3	119.3	1042.7	830.2	369.7	318.6	2
4000	4000	KERALA	2014	4.6	10.3	17.9	95.7	251.0	454.4	677.8	733.9	298.8	3

114 rows × 20 columns



```
In [553]: np.shape(KERALA)
```

```
Out[553]: (114, 20)
```

```
In [554]: np.size(KERALA)
```

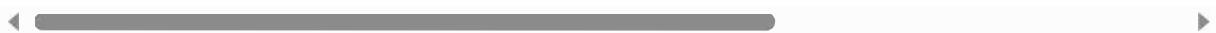
```
Out[554]: 2280
```

In [555]: KERALA.isna()

Out[555]:

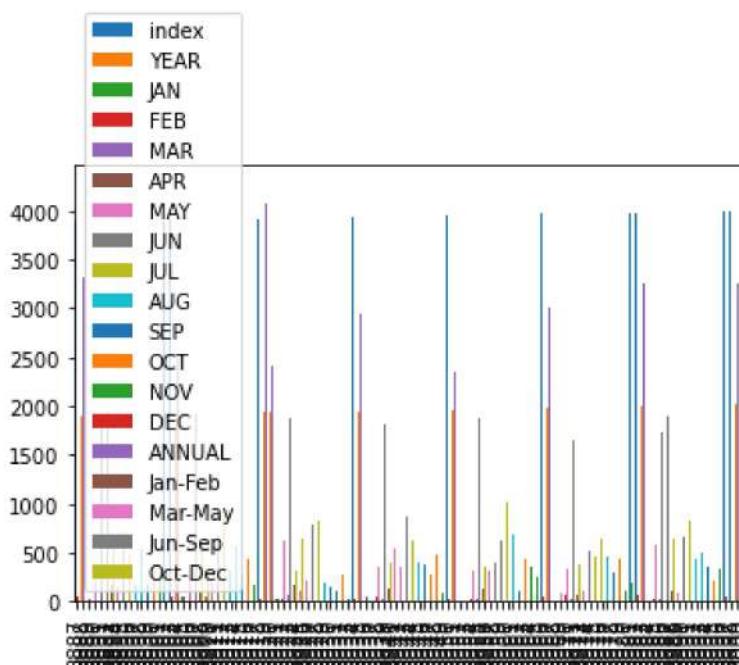
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
3887	False		False										
3888	False		False										
3889	False		False										
3890	False		False										
3891	False		False										
...
3996	False		False										
3997	False		False										
3998	False		False										
3999	False		False										
4000	False		False										

114 rows × 20 columns



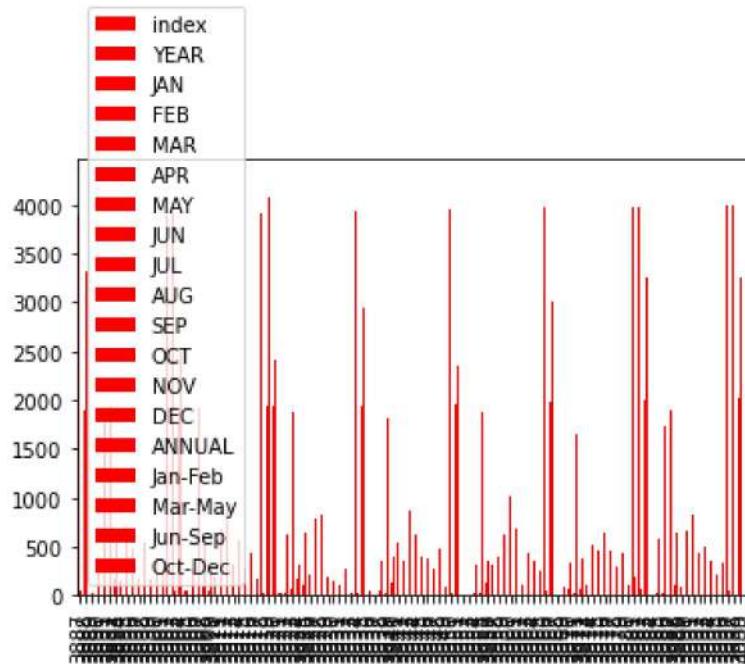
In [556]: KERALA.plot.bar()

Out[556]: <AxesSubplot:>



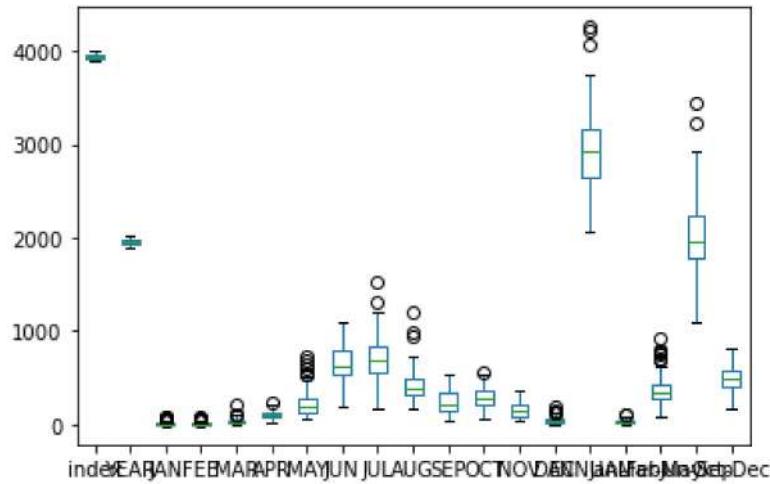
```
In [557]: KERALA.plot.bar(color='r')
```

```
Out[557]: <AxesSubplot:>
```



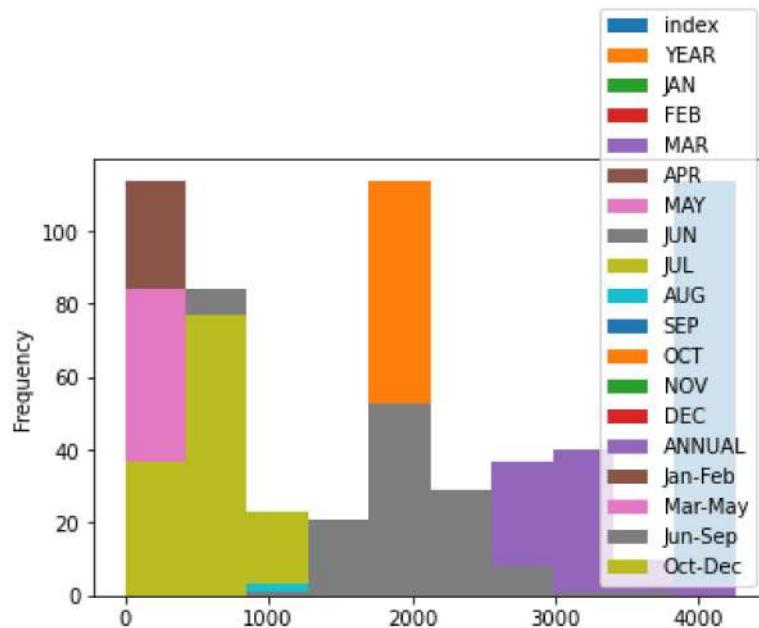
```
In [558]: KERALA.plot.box()
```

```
Out[558]: <AxesSubplot:>
```



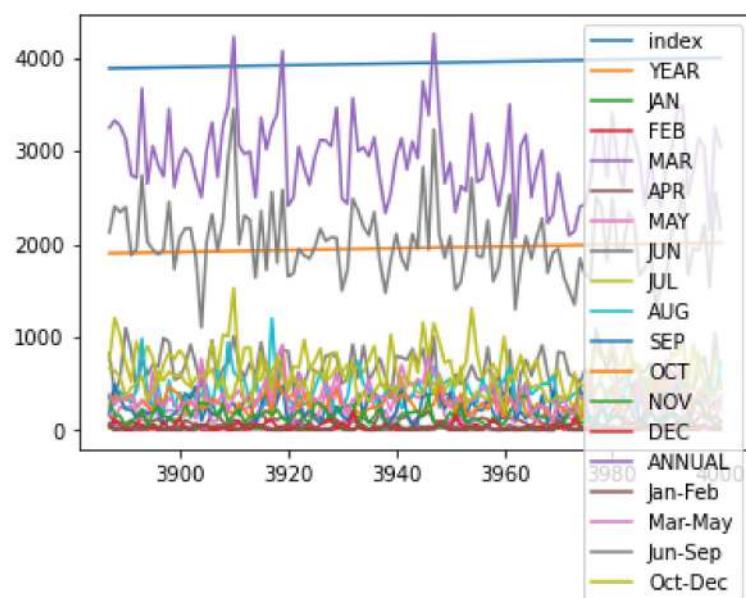
```
In [559]: KERALA.plot.hist()
```

```
Out[559]: <AxesSubplot:ylabel='Frequency'>
```



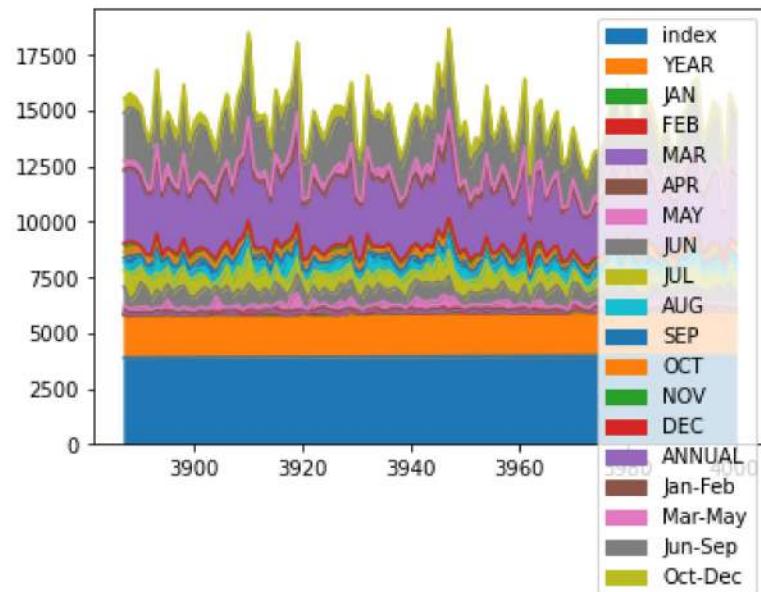
```
In [560]: KERALA.plot.line()
```

```
Out[560]: <AxesSubplot:>
```



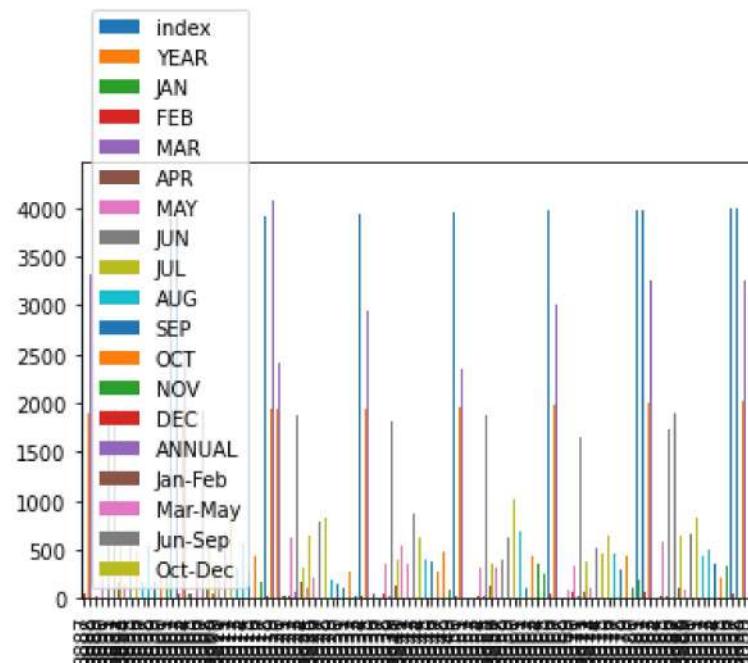
In [561]: KERALA.plot.area()

Out[561]: <AxesSubplot:>



In [562]: KERALA.plot.bar()

Out[562]: <AxesSubplot:>



LAKSHADWEEP

```
In [563]: LAKSHADWEEP=sd[4002:4115]  
LAKSHADWEEP
```

Out[563]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4002	4002	LAKSHADWEEP	1901	22.6	86.4	114.8	263.8	37.3	459.0	0.0	0.0	46.7	1.0	1.0	1.0
4003	4003	LAKSHADWEEP	1902	99.3	9.6	32.6	40.4	179.1	374.2	413.3	170.0	214.3	1.0	1.0	1.0
4004	4004	LAKSHADWEEP	1903	63.5	95.0	0.0	29.5	144.1	212.4	261.8	202.0	292.1	1.0	1.0	1.0
4005	4005	LAKSHADWEEP	1904	0.0	0.0	13.5	13.2	143.3	261.3	256.0	38.9	219.9	1.0	1.0	1.0
4006	4006	LAKSHADWEEP	1905	62.4	0.0	0.0	0.0	166.7	400.7	68.7	377.5	107.5	1.0	1.0	1.0
...
4110	4110	LAKSHADWEEP	2010	18.8	0.0	1.2	35.6	79.0	318.9	336.7	335.1	161.5	1.0	1.0	1.0
4111	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	1.0	1.0	1.0
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	1.0	1.0	1.0
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	1.0	1.0	1.0
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	1.0	1.0	1.0

113 rows × 20 columns

In [564]: LAKSHADWEEP.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 113 entries, 4002 to 4114
Data columns (total 20 columns):
 #   Column      Non-Null Count  Dtype  
--- 
 0   index       113 non-null    int64  
 1   SUBDIVISION 113 non-null    object  
 2   YEAR        113 non-null    int64  
 3   JAN         111 non-null    float64 
 4   FEB         112 non-null    float64 
 5   MAR         111 non-null    float64 
 6   APR         111 non-null    float64 
 7   MAY         111 non-null    float64 
 8   JUN         111 non-null    float64 
 9   JUL         110 non-null    float64 
 10  AUG         111 non-null    float64 
 11  SEP         110 non-null    float64 
 12  OCT         110 non-null    float64 
 13  NOV         107 non-null    float64 
 14  DEC         109 non-null    float64 
 15  ANNUAL      102 non-null    float64 
 16  Jan-Feb     110 non-null    float64 
 17  Mar-May     109 non-null    float64 
 18  Jun-Sep     109 non-null    float64 
 19  Oct-Dec     107 non-null    float64 
dtypes: float64(17), int64(2), object(1)
memory usage: 17.8+ KB
```

In [565]: LAKSHADWEEP.describe()

Out[565]:

	index	YEAR	JAN	FEB	MAR	APR	MAY	
count	113.000000	113.000000	111.000000	112.000000	111.000000	111.000000	111.000000	111
mean	4058.000000	1957.849558	27.722523	15.971429	14.446847	44.785586	164.171171	327
std	32.76431	32.987882	38.241262	24.834042	21.396031	50.899253	109.722824	102
min	4002.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	13.500000	125
25%	4030.000000	1930.000000	4.550000	0.400000	0.200000	14.050000	86.600000	253
50%	4058.000000	1958.000000	13.600000	4.150000	5.400000	32.300000	148.300000	326
75%	4086.000000	1986.000000	38.250000	18.600000	23.600000	58.900000	210.450000	381
max	4114.000000	2014.000000	262.800000	114.900000	120.700000	315.400000	660.800000	604

```
In [566]: LAKSHADWEEP.columns
```

```
Out[566]: Index(['index', 'SUBDIVISION', 'YEAR', 'JAN', 'FEB', 'MAR', 'APR', 'MAY',  
       'JUN', 'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC', 'ANNUAL', 'Jan-Feb',  
       'Mar-May', 'Jun-Sep', 'Oct-Dec'],  
      dtype='object')
```

```
In [567]: LAKSHADWEEP.dropna()
```

```
Out[567]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DECEMBER
4002	4002	LAKSHADWEEP	1901	22.6	86.4	114.8	263.8	37.3	459.0	0.0	0.0	46.7	10.0
4003	4003	LAKSHADWEEP	1902	99.3	9.6	32.6	40.4	179.1	374.2	413.3	170.0	214.3	10.0
4005	4005	LAKSHADWEEP	1904	0.0	0.0	13.5	13.2	143.3	261.3	256.0	38.9	219.9	10.0
4006	4006	LAKSHADWEEP	1905	62.4	0.0	0.0	0.0	166.7	400.7	68.7	377.5	107.5	10.0
4007	4007	LAKSHADWEEP	1906	17.8	0.0	24.4	33.8	213.0	465.0	348.6	260.5	25.9	10.0
...
4110	4110	LAKSHADWEEP	2010	18.8	0.0	1.2	35.6	79.0	318.9	336.7	335.1	161.5	10.0
4111	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	10.0
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	10.0
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	10.0
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	10.0

102 rows × 20 columns



```
In [568]: LAKSHADWEEP.fillna(356)
```

```
Out[568]:
```

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4002	4002	LAKSHADWEEP	1901	22.6	86.4	114.8	263.8	37.3	459.0	0.0	0.0	46.7	1.0	1.0	1.0
4003	4003	LAKSHADWEEP	1902	99.3	9.6	32.6	40.4	179.1	374.2	413.3	170.0	214.3	1.0	1.0	1.0
4004	4004	LAKSHADWEEP	1903	63.5	95.0	0.0	29.5	144.1	212.4	261.8	202.0	292.1	1.0	1.0	1.0
4005	4005	LAKSHADWEEP	1904	0.0	0.0	13.5	13.2	143.3	261.3	256.0	38.9	219.9	1.0	1.0	1.0
4006	4006	LAKSHADWEEP	1905	62.4	0.0	0.0	0.0	166.7	400.7	68.7	377.5	107.5	1.0	1.0	1.0
...
4110	4110	LAKSHADWEEP	2010	18.8	0.0	1.2	35.6	79.0	318.9	336.7	335.1	161.5	1.0	1.0	1.0
4111	4111	LAKSHADWEEP	2011	5.1	2.8	3.1	85.9	107.2	153.6	350.2	254.0	255.2	1.0	1.0	1.0
4112	4112	LAKSHADWEEP	2012	19.2	0.1	1.6	76.8	21.2	327.0	231.5	381.2	179.8	1.0	1.0	1.0
4113	4113	LAKSHADWEEP	2013	26.2	34.4	37.5	5.3	88.3	426.2	296.4	154.4	180.0	1.0	1.0	1.0
4114	4114	LAKSHADWEEP	2014	53.2	16.1	4.4	14.9	57.4	244.1	116.1	466.1	132.2	1.0	1.0	1.0

113 rows × 20 columns



```
In [569]: np.shape(LAKSHADWEEP)
```

```
Out[569]: (113, 20)
```

```
In [570]: np.size(LAKSHADWEEP)
```

```
Out[570]: 2260
```

```
In [571]: LAKSHADWEEP.isna()
```

Out[571]:

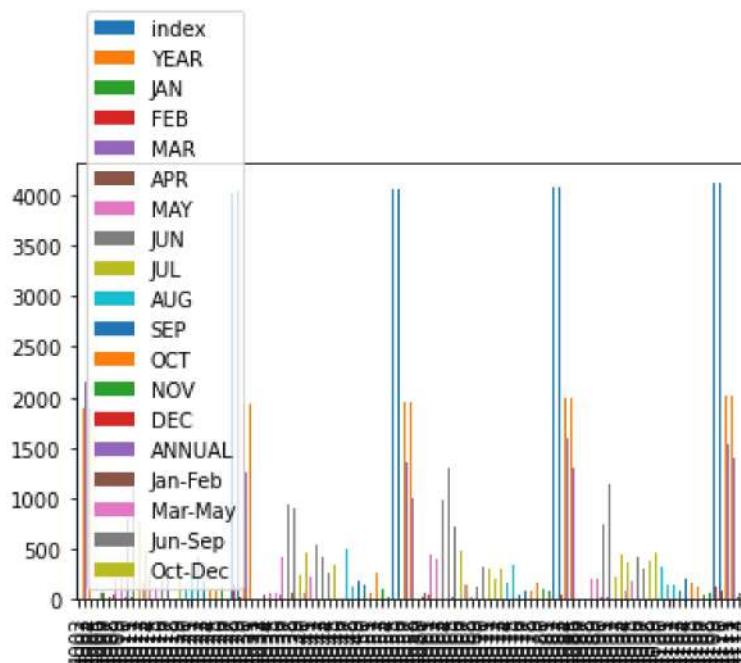
	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
4002	False		False										
4003	False		False										
4004	False		False										
4005	False		False										
4006	False		False										
...
4110	False		False										
4111	False		False										
4112	False		False										
4113	False		False										
4114	False		False										

113 rows × 20 columns

◀ ▶

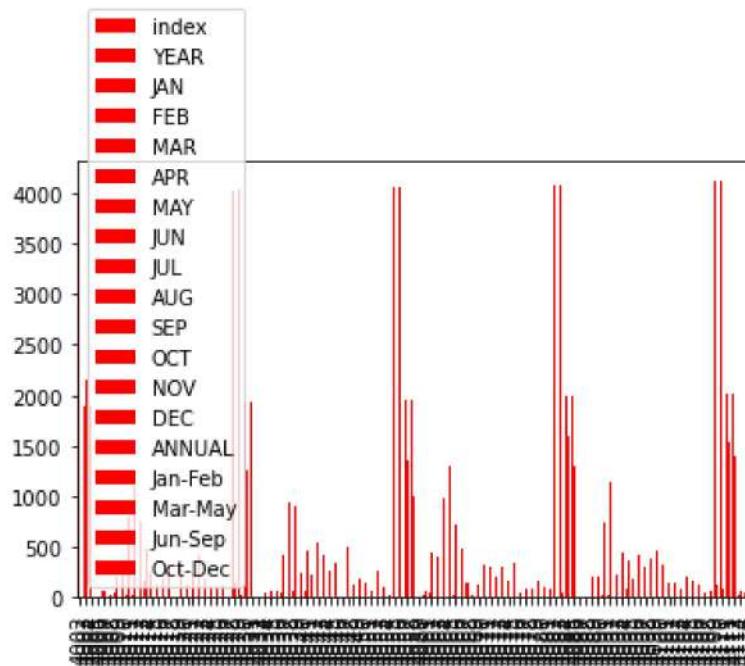
```
In [572]: LAKSHADWEEP.plot.bar()
```

Out[572]: <AxesSubplot:>



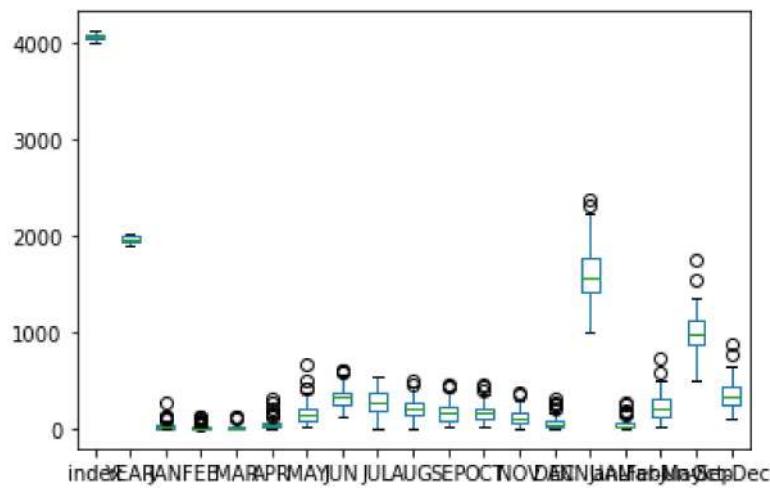
```
In [573]: LAKSHADWEEP.plot.bar(color='r')
```

```
Out[573]: <AxesSubplot:>
```



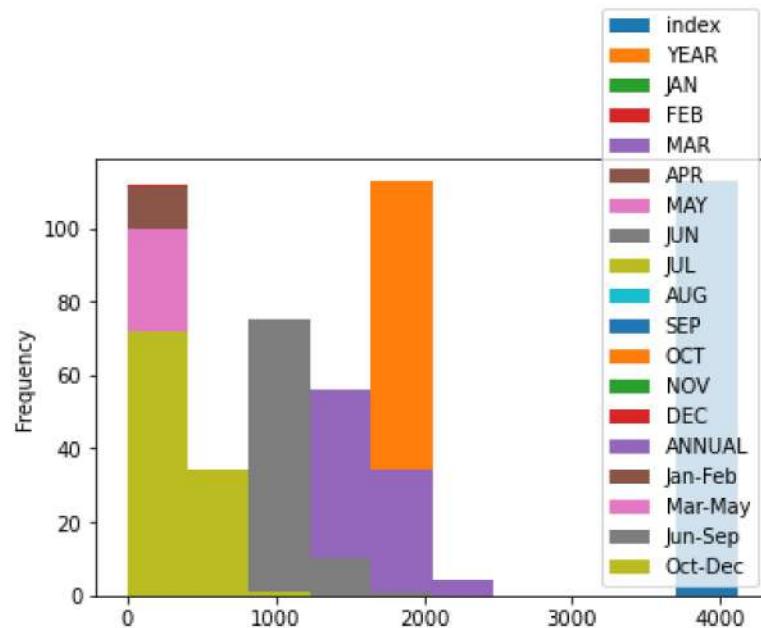
```
In [574]: LAKSHADWEEP.plot.box()
```

```
Out[574]: <AxesSubplot:>
```



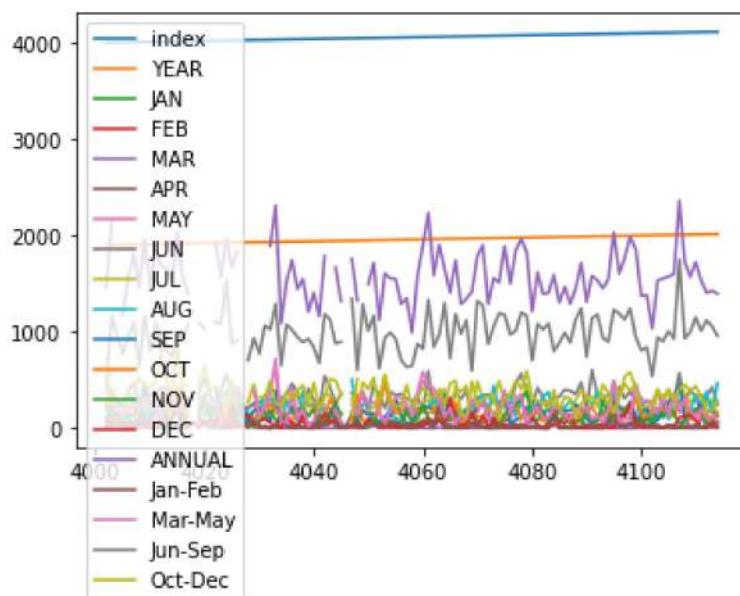
```
In [575]: LAKSHADWEEP.plot.hist()
```

```
Out[575]: <AxesSubplot:ylabel='Frequency'>
```



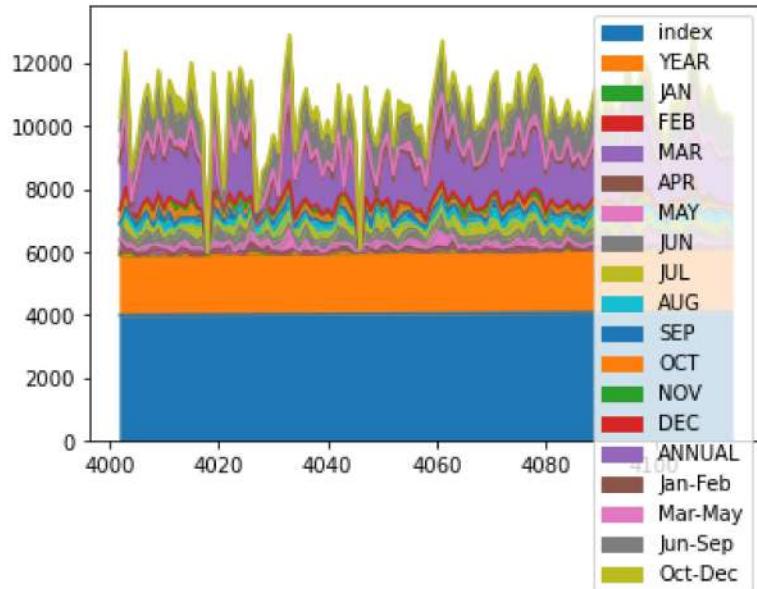
```
In [576]: LAKSHADWEEP.plot.line()
```

```
Out[576]: <AxesSubplot:>
```



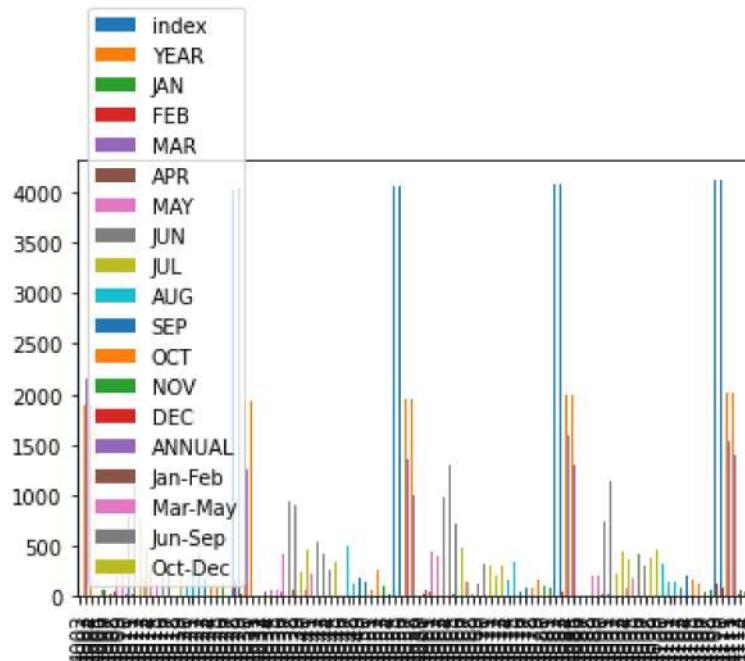
```
In [577]: LAKSHADWEEP.plot.area()
```

```
Out[577]: <AxesSubplot:>
```



```
In [578]: LAKSHADWEEP.plot.bar()
```

```
Out[578]: <AxesSubplot:>
```



```
In [ ]:
```

