In [2]:
```
# import libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [3]:
```
# To Import Dataset
sd=pd.read_csv(r"C:\Users\user\Desktop\DINESH\FP1_air\rainfall in india 1901-20
sd
```

Out[3]:

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

4116 rows × 20 columns

In [4]:
```
sd.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4116 entries, 0 to 4115
Data columns (total 20 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   index        4116 non-null   int64  
 1   SUBDIVISION  4116 non-null   object 
 2   YEAR         4116 non-null   int64  
 3   JAN          4112 non-null   float64
 4   FEB          4113 non-null   float64
 5   MAR          4110 non-null   float64
 6   APR          4112 non-null   float64
 7   MAY          4113 non-null   float64
 8   JUN          4111 non-null   float64
 9   JUL          4109 non-null   float64
 10  AUG          4112 non-null   float64
 11  SEP          4110 non-null   float64
 12  OCT          4109 non-null   float64
 13  NOV          4105 non-null   float64
 14  DEC          4106 non-null   float64
 15  ANNUAL       4090 non-null   float64
 16  Jan-Feb      4110 non-null   float64
 17  Mar-May      4107 non-null   float64
 18  Jun-Sep      4106 non-null   float64
 19  Oct-Dec      4103 non-null   float64
dtypes: float64(17), int64(2), object(1)
memory usage: 643.2+ KB
```

In [5]:
```
sd.describe()
```

Out[5]:

	index	YEAR	JAN	FEB	MAR	APR	MAY
count	4116.000000	4116.000000	4112.000000	4113.000000	4110.000000	4112.000000	4113.000000
mean	2057.500000	1958.218659	18.957320	21.805325	27.359197	43.127432	85.745417
std	1188.331183	33.140898	33.585371	35.909488	46.959424	67.831168	123.234904
min	0.000000	1901.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	1028.750000	1930.000000	0.600000	0.600000	1.000000	3.000000	8.600000
50%	2057.500000	1958.000000	6.000000	6.700000	7.800000	15.700000	36.600000
75%	3086.250000	1987.000000	22.200000	26.800000	31.300000	49.950000	97.200000
max	4115.000000	2015.000000	583.700000	403.500000	605.600000	595.100000	1168.600000

In [6]:
```
sd.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]:
```
sd.dropna()
```

Out[7]:

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

4090 rows × 20 columns

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

Out[8]:

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

4116 rows × 20 columns

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

Out[9]:
```
(4116, 20)
```

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

Out[10]:
```
82320
```

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

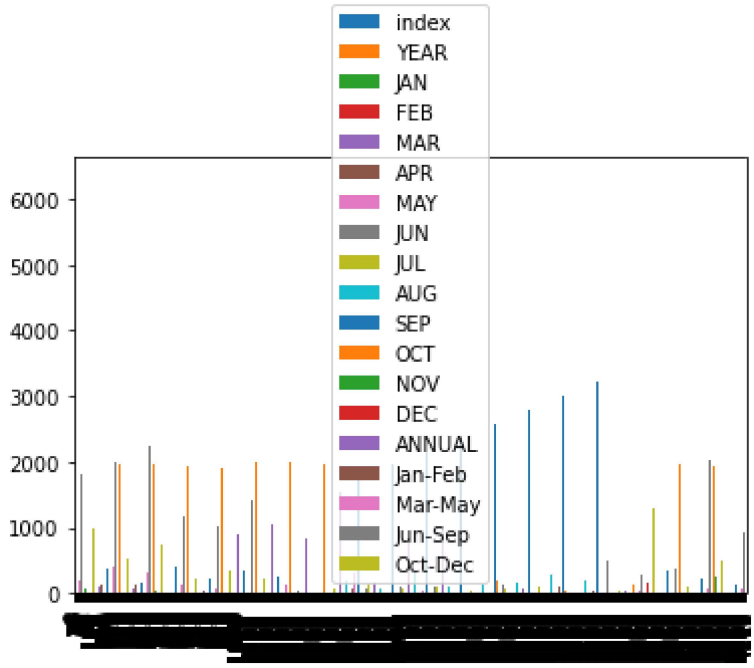
Out[11]:

	index	SUBDIVISION	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	C
0	False	False	False	False	False	False	False	False	False	False	False	False	Fa
1	False	False	False	False	False	False	False	False	False	False	False	False	Fa
2	False	False	False	False	False	False	False	False	False	False	False	False	Fa
3	False	False	False	False	False	False	False	False	False	False	False	False	Fa
4	False	False	False	False	False	False	False	False	False	False	False	False	Fa
...	...	...	...	...	...	...	...	...	...	...	...	...	...
4111	False	False	False	False	False	False	False	False	False	False	False	False	Fa
4112	False	False	False	False	False	False	False	False	False	False	False	False	Fa
4113	False	False	False	False	False	False	False	False	False	False	False	False	Fa
4114	False	False	False	False	False	False	False	False	False	False	False	False	Fa
4115	False	False	False	False	False	False	False	False	False	False	False	False	Fa

4116 rows × 20 columns

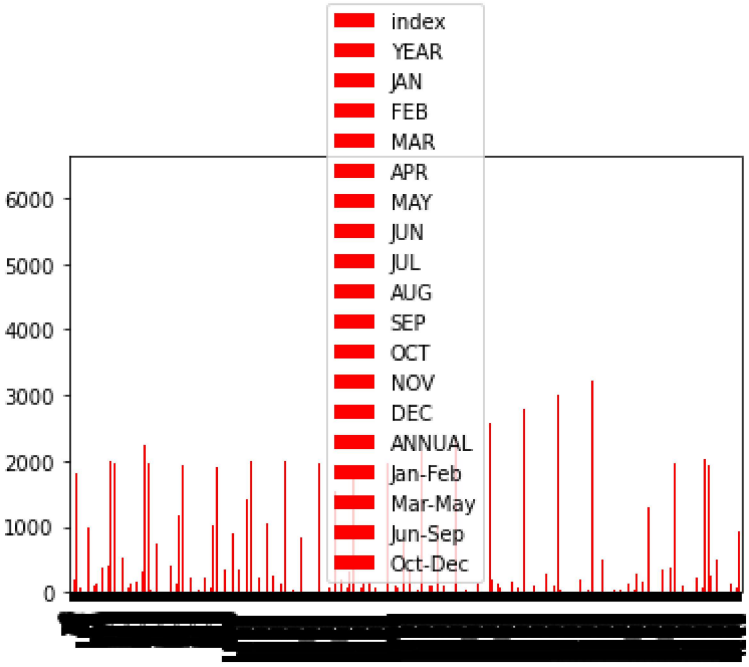
In [12]:
```
sd.plot.bar()
```

Out[12]: <AxesSubplot:>



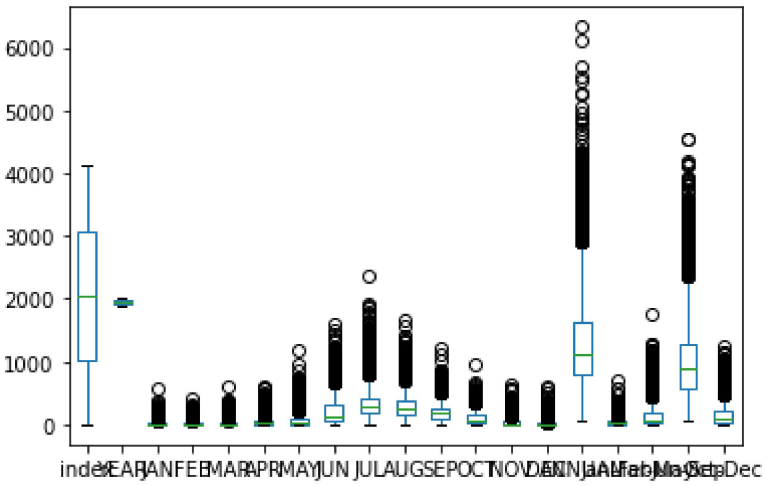
In [13]:
```
sd.plot.bar(color='r')
```

Out[13]: <AxesSubplot:>



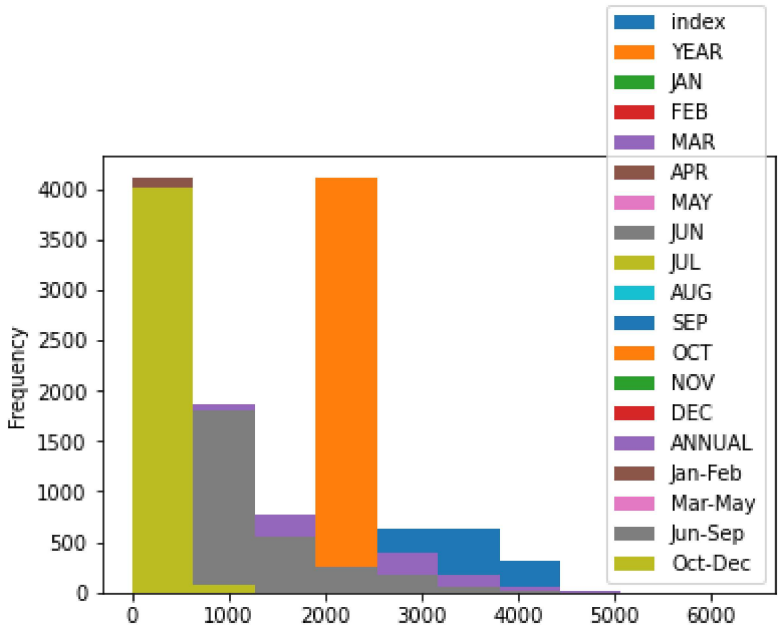
In [14]:
```
sd.plot.box()
```

Out[14]: <AxesSubplot:>



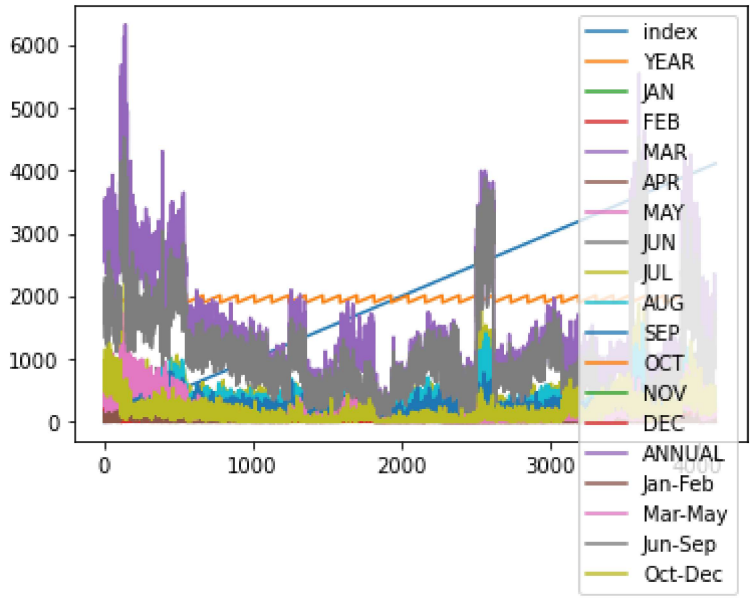
In [15]:
```
sd.plot.hist()
```

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



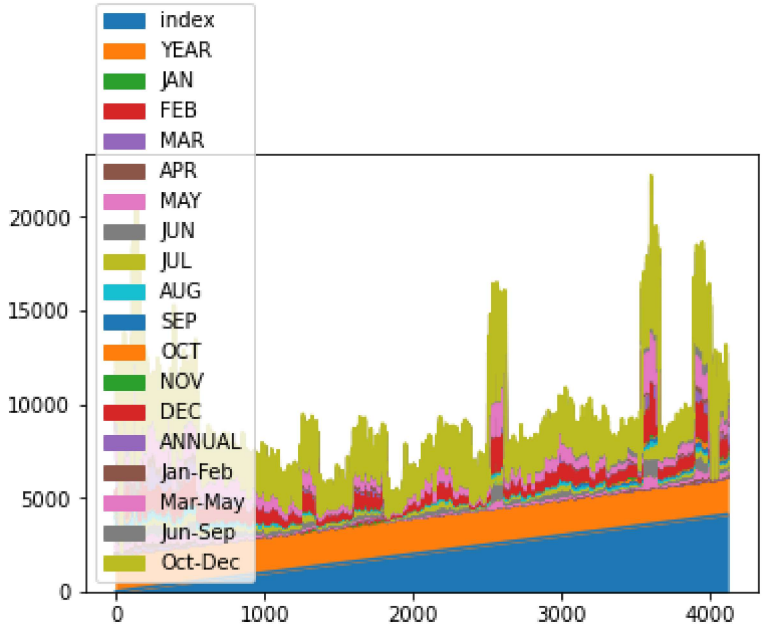
In [16]:
```
sd.plot.line()
```

Out[16]: <AxesSubplot:>



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

Out[17]: <AxesSubplot:>



In [ ]: