In [1]:
```
import numpy as np
import pandas as pd
```

In [2]:
```
x=pd.read_csv(r"C:\Users\user\Downloads\5_Instagram data - 5_Instagram data.csv
print(x)
```

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves
0	3920	2586	1028	619	56	98
1	5394	2727	1838	1174	78	194
2	4021	2085	1188	0	533	41
3	4528	2700	621	932	73	172
4	2518	1704	255	279	37	96
..	...	...	...	...	...	...
114	13700	5185	3041	5352	77	573
115	5731	1923	1368	2266	65	135
116	4139	1133	1538	1367	33	36
117	32695	11815	3147	17414	170	1095
118	36919	13473	4176	16444	2547	653

	Comments	Shares	Likes	Profile Visits	Follows
0	9	5	162	35	2
1	7	14	224	48	10
2	11	1	131	62	12
3	10	7	213	23	8
4	5	4	123	8	0
..	...	...	...	...	...
114	2	38	373	73	80
115	4	1	148	20	18
116	0	1	92	34	10
117	2	75	549	148	214
118	5	26	443	611	228

	Caption
0	Here are some of the most important data visua...
1	Here are some of the best data science project...
2	Learn how to train a machine learning model an...
3	Here's how you can write a Python program to d...
4	Plotting annotations while visualizing your da...
..	...
114	Here are some of the best data science certifi...
115	Clustering is a machine learning technique use...
116	Clustering music genres is a task of grouping ...
117	Here are some of the best data science certifi...
118	175 Python Projects with Source Code solved an...

	Hashtags
0	#finance #money #business #investing #investme...
1	#healthcare #health #covid #data #datascience ...
2	#data #datascience #dataanalysis #dataanalytic...
3	#python #pythonprogramming #pythonprojects #py...
4	#datavisualization #datascience #data #dataana...
..	...
114	#datascience #datasciencejobs #datasciencetrai...
115	#machinelearning #machinelearningalgorithms #d...
116	#machinelearning #machinelearningalgorithms #d...
117	#datascience #datasciencejobs #datasciencetrai...
118	#python #pythonprogramming #pythonprojects #py...

[119 rows x 13 columns]

In [3]:
```
x.head()
```

Out[3]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	Foll
0	3920	2586	1028	619	56	98	9	5	162	35	
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	

In [5]:
```
x.tail(6)
```

Out[5]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
113	10206	2371	1624	6000	117	182	10	17	172	237	
114	13700	5185	3041	5352	77	573	2	38	373	73	
115	5731	1923	1368	2266	65	135	4	1	148	20	
116	4139	1133	1538	1367	33	36	0	1	92	34	
117	32695	11815	3147	17414	170	1095	2	75	549	148	
118	36919	13473	4176	16444	2547	653	5	26	443	611	

In [6]:
```
x.dtypes
```

Out[6]:
```
Impressions          int64
From Home            int64
From Hashtags        int64
From Explore         int64
From Other           int64
Saves                int64
Comments             int64
Shares               int64
Likes                int64
Profile Visits       int64
Follows              int64
Caption             object
Hashtags            object
dtype: object
```

In [7]:
```
x.index
```

Out[7]:
```
RangeIndex(start=0, stop=119, step=1)
```

In [8]:
```
x.describe
```

Out[8]:
```
<bound method NDFrame.describe of      Impressions  From Home  From Hashtags
From Explore  From Other  Saves  \
0            3920       2586           1028          619           56     98
1            5394       2727           1838         1174           78    194
2            4021       2085           1188            0          533     41
3            4528       2700            621          932           73    172
4            2518       1704            255          279           37     96
..            ...        ...            ...          ...          ...    ...
114         13700       5185           3041         5352           77    573
115          5731       1923           1368         2266           65    135
116          4139       1133           1538         1367           33     36
117         32695      11815           3147        17414          170   1095
118         36919      13473           4176        16444         2547    653

     Comments  Shares  Likes  Profile Visits  Follows  \
0           9       5    162              35        2
1           7      14    224              48       10
2          11       1    131              62       12
3          10       7    213              23        8
4           5       4    123               8        0
..        ...     ...    ...             ...      ...
114         2      38    373              73       80
115         4       1    148              20       18
116         0       1     92              34       10
117         2      75    549             148      214
118         5      26    443             611      228

                                              Caption  \
0    Here are some of the most important data visua...
1    Here are some of the best data science project...
2    Learn how to train a machine learning model an...
3    Here□s how you can write a Python program to d...
4    Plotting annotations while visualizing your da...
..                                                 ...
114  Here are some of the best data science certifi...
115  Clustering is a machine learning technique use...
116  Clustering music genres is a task of grouping ...
117  Here are some of the best data science certifi...
118  175 Python Projects with Source Code solved an...

                                              Hashtags
0    #finance #money #business #investing #investme...
1    #healthcare #health #covid #data #datascience ...
2    #data #datascience #dataanalysis #dataanalytic...
3    #python #pythonprogramming #pythonprojects #py...
4    #datavisualization #datascience #data #dataana...
..                                                 ...
114  #datascience #datasciencejobs #datasciencetrai...
115  #machinelearning #machinelearningalgorithms #d...
116  #machinelearning #machinelearningalgorithms #d...
117  #datascience #datasciencejobs #datasciencetrai...
118  #python #pythonprogramming #pythonprojects #py...

[119 rows x 13 columns]>
```

In [9]:
```
x["Saves"]
```

Out[9]:
```
0        98
1       194
2        41
3       172
4        96
       ...
114     573
115     135
116      36
117    1095
118     653
Name: Saves, Length: 119, dtype: int64
```

In [10]:
```
x.loc[1:7]
```

Out[10]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	Foll
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	
5	3884	2046	1214	329	43	74	7	10	144	9	
6	2621	1543	599	333	25	22	5	1	76	26	
7	3541	2071	628	500	60	135	4	9	124	12	

In [11]:
```
x.fillna(value=100)
```

Out[11]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
0	3920	2586	1028	619	56	98	9	5	162	35	
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	
...	...	...	...	...	...	...	...	...	...	...	
114	13700	5185	3041	5352	77	573	2	38	373	73	
115	5731	1923	1368	2266	65	135	4	1	148	20	
116	4139	1133	1538	1367	33	36	0	1	92	34	
117	32695	11815	3147	17414	170	1095	2	75	549	148	

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
118	36919	13473	4176	16444	2547	653	5	26	443	611	

119 rows × 13 columns

In [12]:
```
x.dropna()
```

Out[12]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
0	3920	2586	1028	619	56	98	9	5	162	35	
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	
...	...	...	...	...	...	...	...	...	...	...	
114	13700	5185	3041	5352	77	573	2	38	373	73	
115	5731	1923	1368	2266	65	135	4	1	148	20	
116	4139	1133	1538	1367	33	36	0	1	92	34	
117	32695	11815	3147	17414	170	1095	2	75	549	148	

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
118	36919	13473	4176	16444	2547	653	5	26	443	611	

119 rows × 13 columns

In [13]:
```
x.columns
```

Out[13]:
```
Index(['Impressions', 'From Home', 'From Hashtags', 'From Explore',
       'From Other', 'Saves', 'Comments', 'Shares', 'Likes', 'Profile Visit
s',
       'Follows', 'Caption', 'Hashtags'],
      dtype='object')
```

In [14]:
```
x.dropna(axis=1,how="any")
```

Out[14]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
0	3920	2586	1028	619	56	98	9	5	162	35	
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	
...	...	...	...	...	...	...	...	...	...	...	
114	13700	5185	3041	5352	77	573	2	38	373	73	
115	5731	1923	1368	2266	65	135	4	1	148	20	
116	4139	1133	1538	1367	33	36	0	1	92	34	
117	32695	11815	3147	17414	170	1095	2	75	549	148	

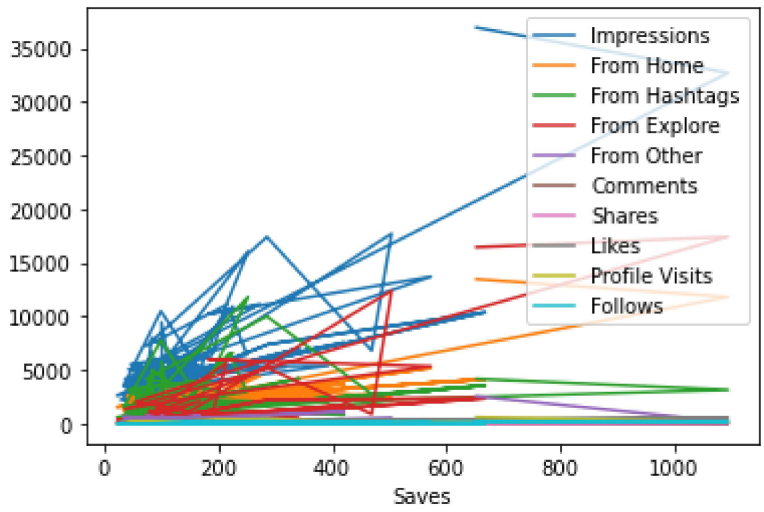
	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	F
118	36919	13473	4176	16444	2547	653	5	26	443	611	

119 rows × 13 columns

In [15]:
```
import matplotlib.pyplot as pp
```

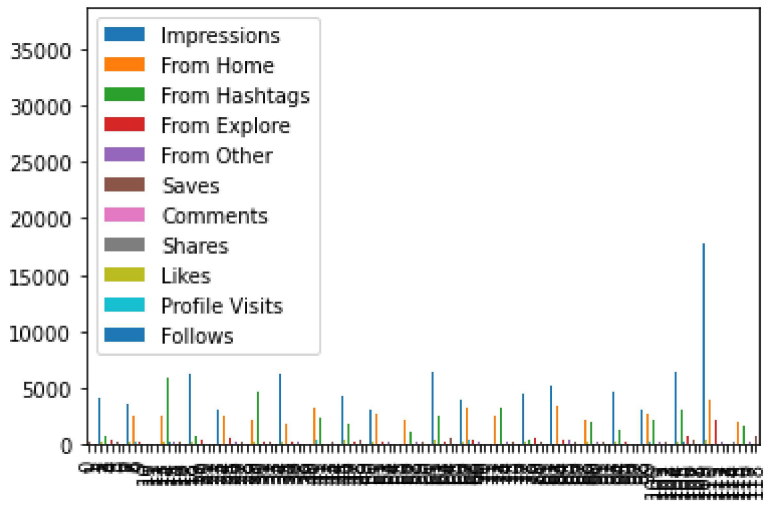
In [16]:
```
x.plot.line('Saves')
```

Out[16]: <AxesSubplot:xlabel='Saves'>



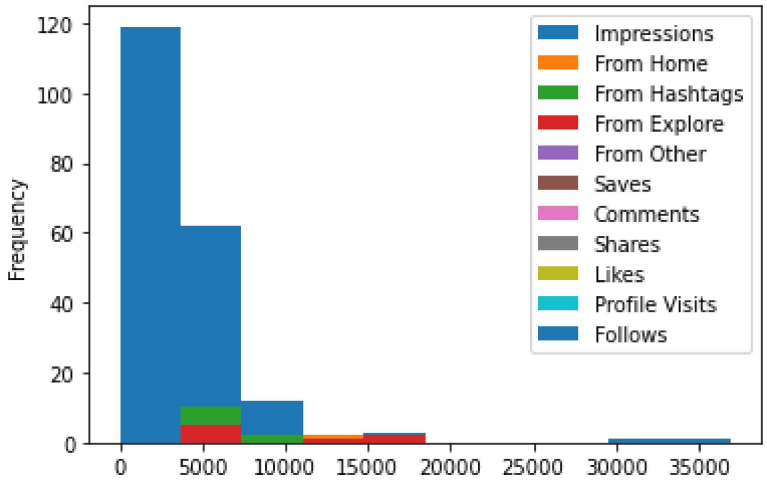
In [17]:
```
x.plot.bar()
```

Out[17]: <AxesSubplot:>



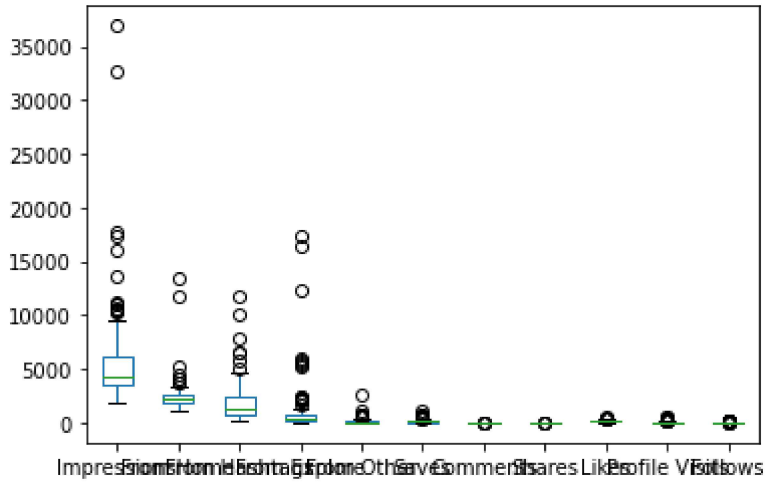
In [18]:
```
x.plot.hist()
```

Out[18]: <AxesSubplot:ylabel='Frequency'>



In [32]:
```
x.plot.box()
```

Out[32]: <AxesSubplot:>



In [33]:
```
y=x[["Shares"]]
y
```

Out[33]:

	Shares
0	5
1	14
2	1
3	7
4	4
...	...
114	38
115	1
116	1
117	75
118	26

119 rows × 1 columns

In [35]:
```
x.mean()
```

Out[35]:
```
Impressions       5703.991597
From Home         2475.789916
From Hashtags     1887.512605
From Explore      1078.100840
From Other         171.092437
Saves              153.310924
Comments             6.663866
Shares               9.361345
Likes              173.781513
Profile Visits      50.621849
Follows             20.756303
dtype: float64
```

In [22]:
```
x.median()
```

Out[22]:
```
Impressions       4289.0
From Home         2207.0
From Hashtags     1278.0
From Explore       326.0
From Other          74.0
Saves              109.0
Comments             6.0
Shares               6.0
Likes              151.0
Profile Visits      23.0
Follows              8.0
dtype: float64
```

In [23]:
```
x.mode()
```

Out[23]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	Fo
0	5394.0	1975.0	116	45.0	34.0	40.0	6.0	3.0	114.0	19.0	
1	NaN	NaN	201	84.0	NaN	135.0	NaN	NaN	151.0	21.0	
2	NaN	NaN	278	NaN	NaN	144.0	NaN	NaN	NaN	NaN	
3	NaN	NaN	362	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
4	NaN	NaN	411	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
5	NaN	NaN	583	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
6	NaN	NaN	655	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
7	NaN	NaN	707	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
8	NaN	NaN	771	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
9	NaN	NaN	794	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
10	NaN	NaN	1248	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
11	NaN	NaN	1260	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
12	NaN	NaN	1278	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
13	NaN	NaN	1693	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
14	NaN	NaN	1938	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
15	NaN	NaN	2351	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
16	NaN	NaN	2975	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
17	NaN	NaN	3450	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
18	NaN	NaN	3551	NaN	NaN	NaN	NaN	NaN	NaN	NaN	

In [24]:
```
x.sum()
```

Out[24]:
```
Impressions                                                  678775
From Home                                                    294619
From Hashtags                                                224614
From Explore                                                 128294
From Other                                                    20360
Saves                                                         18244
Comments                                                        793
Shares                                                         1114
Likes                                                         20680
Profile Visits                                                 6024
Follows                                                        2470
Caption          Here are some of the most important data visua...
Hashtags         #finance #money #business #investing #investme...
dtype: object
```

In [25]:
```
x.count()
```

Out[25]:
```
Impressions       119
From Home         119
From Hashtags     119
From Explore      119
From Other        119
Saves             119
Comments          119
Shares            119
Likes             119
Profile Visits    119
Follows           119
Caption           119
Hashtags          119
dtype: int64
```

In [26]:
```
x.min()
```

Out[26]:
```
Impressions                                                    1941
From Home                                                      1133
From Hashtags                                                   116
From Explore                                                      0
From Other                                                        9
Saves                                                            22
Comments                                                          0
Shares                                                            0
Likes                                                            72
Profile Visits                                                    4
Follows                                                           0
Caption          170 Python Projects with Source Code solved an...
Hashtags         #career #job #jobs #jobsearch #education #busi...
dtype: object
```

In [27]:
```
x.max()
```

Out[27]:
```
Impressions                                                    36919
From Home                                                      13473
From Hashtags                                                  11817
From Explore                                                   17414
From Other                                                      2547
Saves                                                           1095
Comments                                                          19
Shares                                                            75
Likes                                                            549
Profile Visits                                                   611
Follows                                                          260
Caption           You must have seen the news divided into categ...
Hashtags          #timeseries #time #statistics #datascience #bi...
dtype: object
```

In [28]:
```
from numpy import cov
from scipy.stats import pearsonr
from scipy.stats import spearmanr
```

In [29]:
```
d1=x["Saves"]
d2=x["Comments"]
cov(d1,d2)
```

Out[29]:
```
array([[ 2.44352330e+04, -1.49115511e+01],
       [-1.49115511e+01,  1.25640222e+01]])
```

In [30]:
```
print(pearsonr(d1,d2))
```

```
(-0.02691226370756101, 0.7714093067398262)
```

In [31]:
```
print(spearmanr(d1,d2))
```

```
SpearmanrResult(correlation=0.18289066665208123, pvalue=0.04649539344941905)
```

In [ ]:
```

```