In [1]:
```python
import pandas as pd
```

In [2]:
```python
df = pd.read_csv('/Users/melvinlicaros/Downloads/series.csv')
```

In [3]:
```python
df
```

Out[3]:

	series_id	title	genre	platform
0	1	series_1	Fantasy	VoyceMe
1	2	series_2	Adventure	VoyceMe
2	3	series_3	Sci-Fi	Competitor1
3	4	series_4	Fantasy	Competitor2
4	5	series_5	Adventure	Competitor1
5	6	series_6	Sci-Fi	VoyceMe
6	7	series_7	Historical	Competitor2
7	8	series_8	Historical	VoyceMe

In [4]:
```python
df1 = pd.read_csv('/Users/melvinlicaros/Downloads/transactions.csv')
```

In [5]:
```python
df1.head()
```

Out[5]:

	date	series_id	views	search_count	user_id
0	2023-01-01	1	3424	106	17
1	2023-01-01	2	2594	513	79
2	2023-01-01	3	4428	142	88
3	2023-01-01	4	4000	309	57
4	2023-01-01	5	5807	125	96

In [6]:
```python
df2 = pd.read_csv('/Users/melvinlicaros/Downloads/users.csv')
```

In [7]:
```python
df2.head(20)
```

Out[7]:

	user_id	user_name	user_email
0	1	user_1	user_1@example.com
1	2	user_2	user_2@example.com
2	3	user_3	user_3@example.com
3	4	user_4	user_4@example.com
4	5	user_5	user_5@example.com
5	6	user_6	user_6@example.com
6	7	user_7	user_7@example.com
7	8	user_8	user_8@example.com
8	9	user_9	user_9@example.com
9	10	user_10	user_10@example.com
10	11	user_11	user_11@example.com
11	12	user_12	user_12@example.com
12	13	user_13	user_13@example.com
13	14	user_14	user_14@example.com
14	15	user_15	user_15@example.com
15	16	user_16	user_16@example.com
16	17	user_17	user_17@example.com
17	18	user_18	user_18@example.com
18	19	user_19	user_19@example.com
19	20	user_20	user_20@example.com

In [8]:
```python
data = pd.merge(df, df1)
```

In [9]:
```python
#data.loc[(data['series_id'] == 3) & (data['user_id'] == 88)]
```

In [10]:
```python
data.head()
```

Out[10]:

	series_id	title	genre	platform	date	views	search_count	user_id
0	1	series_1	Fantasy	VoyceMe	2023-01-01	3424	106	17
1	1	series_1	Fantasy	VoyceMe	2023-01-02	4291	955	46
2	1	series_1	Fantasy	VoyceMe	2023-01-03	2169	805	67
3	1	series_1	Fantasy	VoyceMe	2023-01-04	4814	277	16
4	1	series_1	Fantasy	VoyceMe	2023-01-05	4542	892	68

In [11]:
```python
raw_data = pd.merge(data, df2)
```

In [12]:
```python
raw_data.head()
```

Out[12]:

	series_id	title	genre	platform	date	views	search_count	user_id	user_name	user_email
0	1	series_1	Fantasy	VoyceMe	2023-01-01	3424	106	17	user_17	user_17@example.com
1	4	series_4	Fantasy	Competitor2	2023-01-18	5324	224	17	user_17	user_17@example.com
2	1	series_1	Fantasy	VoyceMe	2023-01-02	4291	955	46	user_46	user_46@example.com
3	1	series_1	Fantasy	VoyceMe	2023-01-16	5040	828	46	user_46	user_46@example.com
4	2	series_2	Adventure	VoyceMe	2023-01-17	4002	753	46	user_46	user_46@example.com

In [13]:
```python
raw_data['date'] = pd.to_datetime(raw_data['date'])
```

In [14]:
```python
# Add 'Month' and 'Week' columns
#raw_data['Month'] = raw_data['date'].dt.month
raw_data['Month']=pd.DatetimeIndex(raw_data.date).month
```

In [15]:
```python
raw_data
```

Out[15]:

	series_id	title	genre	platform	date	views	search_count	user_id	user_name	user_email	Month
0	1	series_1	Fantasy	VoyceMe	2023-01-01	3424	106	17	user_17	user_17@example.com	1
1	4	series_4	Fantasy	Competitor2	2023-01-18	5324	224	17	user_17	user_17@example.com	1
2	1	series_1	Fantasy	VoyceMe	2023-01-02	4291	955	46	user_46	user_46@example.com	1
3	1	series_1	Fantasy	VoyceMe	2023-01-16	5040	828	46	user_46	user_46@example.com	1
4	2	series_2	Adventure	VoyceMe	2023-01-17	4002	753	46	user_46	user_46@example.com	1
...	...	...	...	...	...	...	...	...	...	...	...
243	7	series_7	Historical	Competitor2	2023-01-16	3110	886	9	user_9	user_9@example.com	1
244	8	series_8	Historical	VoyceMe	2023-01-17	5301	645	9	user_9	user_9@example.com	1
245	8	series_8	Historical	VoyceMe	2023-01-07	4837	497	77	user_77	user_77@example.com	1
246	8	series_8	Historical	VoyceMe	2023-01-09	5594	949	43	user_43	user_43@example.com	1
247	8	series_8	Historical	VoyceMe	2023-01-14	5259	195	43	user_43	user_43@example.com	1

248 rows × 11 columns

In [16]:
```python
raw_data['Week']=pd.DatetimeIndex(raw_data.date).week
```

```
/var/folders/k9/_6137_nn21790znlvybhk4cr0000gn/T/ipykernel_3469/2909170867.py:1: FutureWarning: weekofyear and week have been deprecated, please use DatetimeIndex.isocalendar().week instead, which returns a Series. To exactly reproduce the behavior of week and weekofyear and return an Index, you may call pd.Int
64Index(idx.isocalendar().week)
  raw_data['Week']=pd.DatetimeIndex(raw_data.date).week
```

In [17]:
```python
raw_data.head(50)
```

Out[17]:

	series_id	title	genre	platform	date	views	search_count	user_id	user_name	user_email	Month	Week
0	1	series_1	Fantasy	VoyceMe	2023-01-01	3424	106	17	user_17	user_17@example.com	1	52
1	4	series_4	Fantasy	Competitor2	2023-01-18	5324	224	17	user_17	user_17@example.com	1	3
2	1	series_1	Fantasy	VoyceMe	2023-01-02	4291	955	46	user_46	user_46@example.com	1	1
3	1	series_1	Fantasy	VoyceMe	2023-01-16	5040	828	46	user_46	user_46@example.com	1	3
4	2	series_2	Adventure	VoyceMe	2023-01-17	4002	753	46	user_46	user_46@example.com	1	3
5	6	series_6	Sci-Fi	VoyceMe	2023-01-01	3558	212	46	user_46	user_46@example.com	1	52
6	1	series_1	Fantasy	VoyceMe	2023-01-03	2169	805	67	user_67	user_67@example.com	1	1
7	3	series_3	Sci-Fi	Competitor1	2023-01-17	3750	789	67	user_67	user_67@example.com	1	3
8	5	series_5	Adventure	Competitor1	2023-01-04	3247	966	67	user_67	user_67@example.com	1	1
9	1	series_1	Fantasy	VoyceMe	2023-01-04	4814	277	16	user_16	user_16@example.com	1	1
10	3	series_3	Sci-Fi	Competitor1	2023-01-30	2131	854	16	user_16	user_16@example.com	1	5
11	6	series_6	Sci-Fi	VoyceMe	2023-01-06	3596	436	16	user_16	user_16@example.com	1	1
12	8	series_8	Historical	VoyceMe	2023-01-28	4587	754	16	user_16	user_16@example.com	1	4
13	1	series_1	Fantasy	VoyceMe	2023-01-05	4542	892	68	user_68	user_68@example.com	1	1
14	6	series_6	Sci-Fi	VoyceMe	2023-01-30	5471	211	68	user_68	user_68@example.com	1	5
15	1	series_1	Fantasy	VoyceMe	2023-01-06	4244	118	11	user_11	user_11@example.com	1	1
16	4	series_4	Fantasy	Competitor2	2023-01-05	2421	218	11	user_11	user_11@example.com	1	1
17	7	series_7	Historical	Competitor2	2023-01-26	5739	686	11	user_11	user_11@example.com	1	4
18	1	series_1	Fantasy	VoyceMe	2023-01-07	3413	272	30	user_30	user_30@example.com	1	1
19	3	series_3	Sci-Fi	Competitor1	2023-01-13	3408	509	30	user_30	user_30@example.com	1	2
20	1	series_1	Fantasy	VoyceMe	2023-01-08	3080	447	38	user_38	user_38@example.com	1	1
21	1	series_1	Fantasy	VoyceMe	2023-01-20	3768	328	38	user_38	user_38@example.com	1	3
22	3	series_3	Sci-Fi	Competitor1	2023-01-05	2615	652	38	user_38	user_38@example.com	1	1
23	3	series_3	Sci-Fi	Competitor1	2023-01-08	5288	929	38	user_38	user_38@example.com	1	1
24	7	series_7	Historical	Competitor2	2023-01-04	2351	446	38	user_38	user_38@example.com	1	1
25	7	series_7	Historical	Competitor2	2023-01-05	4734	830	38	user_38	user_38@example.com	1	1
26	8	series_8	Historical	VoyceMe	2023-01-21	4726	237	38	user_38	user_38@example.com	1	3
27	1	series_1	Fantasy	VoyceMe	2023-01-09	2232	574	82	user_82	user_82@example.com	1	2
28	5	series_5	Adventure	Competitor1	2023-01-30	3187	557	82	user_82	user_82@example.com	1	5
29	1	series_1	Fantasy	VoyceMe	2023-01-10	5948	213	2	user_2	user_2@example.com	1	2
30	2	series_2	Adventure	VoyceMe	2023-01-15	5616	563	2	user_2	user_2@example.com	1	2
31	4	series_4	Fantasy	Competitor2	2023-01-19	4205	453	2	user_2	user_2@example.com	1	3
32	6	series_6	Sci-Fi	VoyceMe	2023-01-24	2016	340	2	user_2	user_2@example.com	1	4
33	1	series_1	Fantasy	VoyceMe	2023-01-11	3386	319	73	user_73	user_73@example.com	1	2
34	4	series_4	Fantasy	Competitor2	2023-01-03	5849	265	73	user_73	user_73@example.com	1	1
35	4	series_4	Fantasy	Competitor2	2023-01-23	2274	381	73	user_73	user_73@example.com	1	4
36	1	series_1	Fantasy	VoyceMe	2023-01-12	5072	396	6	user_6	user_6@example.com	1	2
37	2	series_2	Adventure	VoyceMe	2023-01-28	2940	828	6	user_6	user_6@example.com	1	4
38	4	series_4	Fantasy	Competitor2	2023-01-31	4350	277	6	user_6	user_6@example.com	1	5
39	1	series_1	Fantasy	VoyceMe	2023-01-13	4466	349	40	user_40	user_40@example.com	1	2
40	3	series_3	Sci-Fi	Competitor1	2023-01-27	2344	575	40	user_40	user_40@example.com	1	4
41	6	series_6	Sci-Fi	VoyceMe	2023-01-13	4401	906	40	user_40	user_40@example.com	1	2
42	6	series_6	Sci-Fi	VoyceMe	2023-01-16	5230	675	40	user_40	user_40@example.com	1	3
43	1	series_1	Fantasy	VoyceMe	2023-01-14	4098	704	15	user_15	user_15@example.com	1	2
44	2	series_2	Adventure	VoyceMe	2023-01-13	4449	871	15	user_15	user_15@example.com	1	2
45	5	series_5	Adventure	Competitor1	2023-01-20	4297	830	15	user_15	user_15@example.com	1	3
46	1	series_1	Fantasy	VoyceMe	2023-01-15	3027	628	28	user_28	user_28@example.com	1	2
47	3	series_3	Sci-Fi	Competitor1	2023-01-23	2776	847	28	user_28	user_28@example.com	1	4
48	8	series_8	Historical	VoyceMe	2023-01-02	5732	124	28	user_28	user_28@example.com	1	1
49	1	series_1	Fantasy	VoyceMe	2023-01-17	2340	906	60	user_60	user_60@example.com	1	3

In [18]:
```python
raw_data.to_excel('/Users/melvinlicaros/Downloads/final_data.xlsx', index=False)
```

In [25]:
```python
group_by_raw_data = raw_data.groupby(['platform','Month','Week']).agg({'views': 'sum', 'search_count': 'sum'})
```

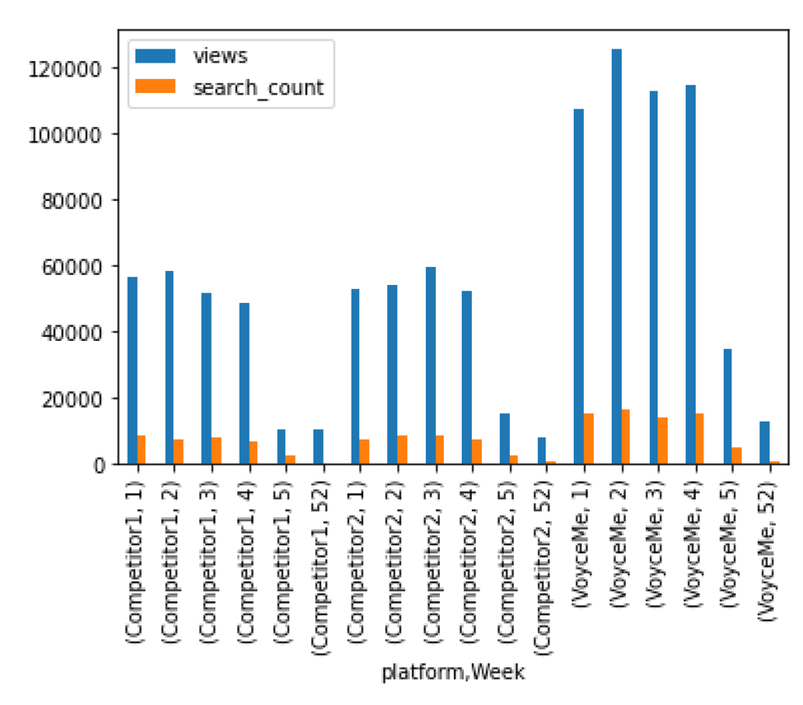
In [26]:
```python
group_by_raw_data
```

Out[26]:

platform	Month	Week	views	search_count
Competitor1	**1**	**1**	56481	8589
		2	58030	7224
		3	51813	7792
		4	48337	6632
		5	10278	2354
		52	10235	267
Competitor2	**1**	**1**	52490	7261
		2	53987	8770
		3	59681	8608
		4	52291	7073
		5	15159	2315
		52	8048	931
VoyceMe	**1**	**1**	107028	14931
		2	125486	16128
		3	112550	14093
		4	114275	15236
		5	34428	4612
		52	12632	931

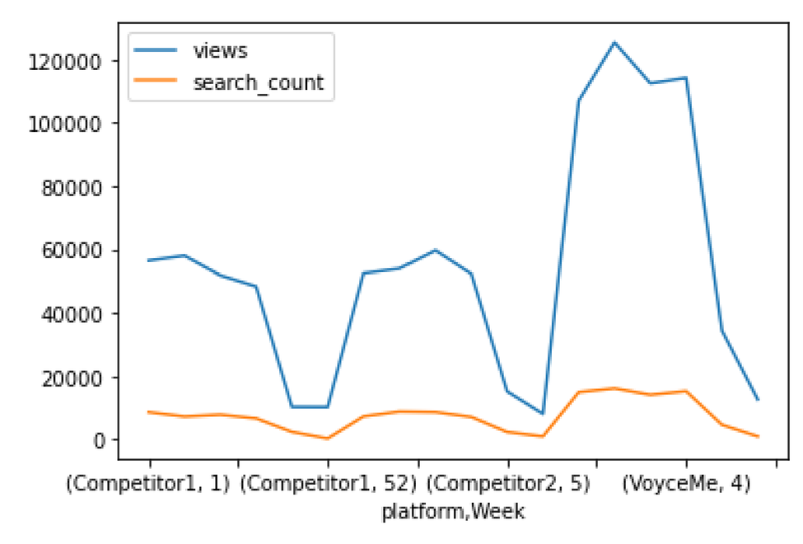
In [23]:
```python
group_by_raw_data.plot.bar()
```

Out[23]: <AxesSubplot:xlabel='platform,Week'>



In [24]:
```python
group_by_raw_data.plot.line()
```

Out[24]: <AxesSubplot:xlabel='platform,Week'>



In [ ]: