sessions

December 29, 2023

[4]:
```
import os
import pandas as pd
from config_file import data_path

path = os.path.join(data_path, "sessions.jsonl")
df = pd.read_json(path, orient="records", lines=True)
```

[5]:
```
df.head()
```

[5]:

	timestamp	user_id	track_id	event_type	session_id
0	2023-11-07 04:12:46.175410	NaN	None	play	124
1	2023-11-07 04:17:30.308410	101.0	None	advertisement	124
2	2023-11-07 04:17:46.308410	101.0	None	None	124
3	2023-11-07 04:18:05.308410	101.0	None	None	124
4	2023-11-07 04:18:56.567939	101.0	7fZrNlR5JAW6iGWOYJj54g	play	125

[6]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 77907 entries, 0 to 77906
Data columns (total 5 columns):
 #   Column      Non-Null Count  Dtype
---  ------      --------------  -----
 0   timestamp   77907 non-null  datetime64[ns]
 1   user_id     62446 non-null  float64
 2   track_id    62234 non-null  object
 3   event_type  62493 non-null  object
 4   session_id  77907 non-null  int64
dtypes: datetime64[ns](1), float64(1), int64(1), object(2)
memory usage: 3.0+ MB
```

[7]:
```
df.describe()
```

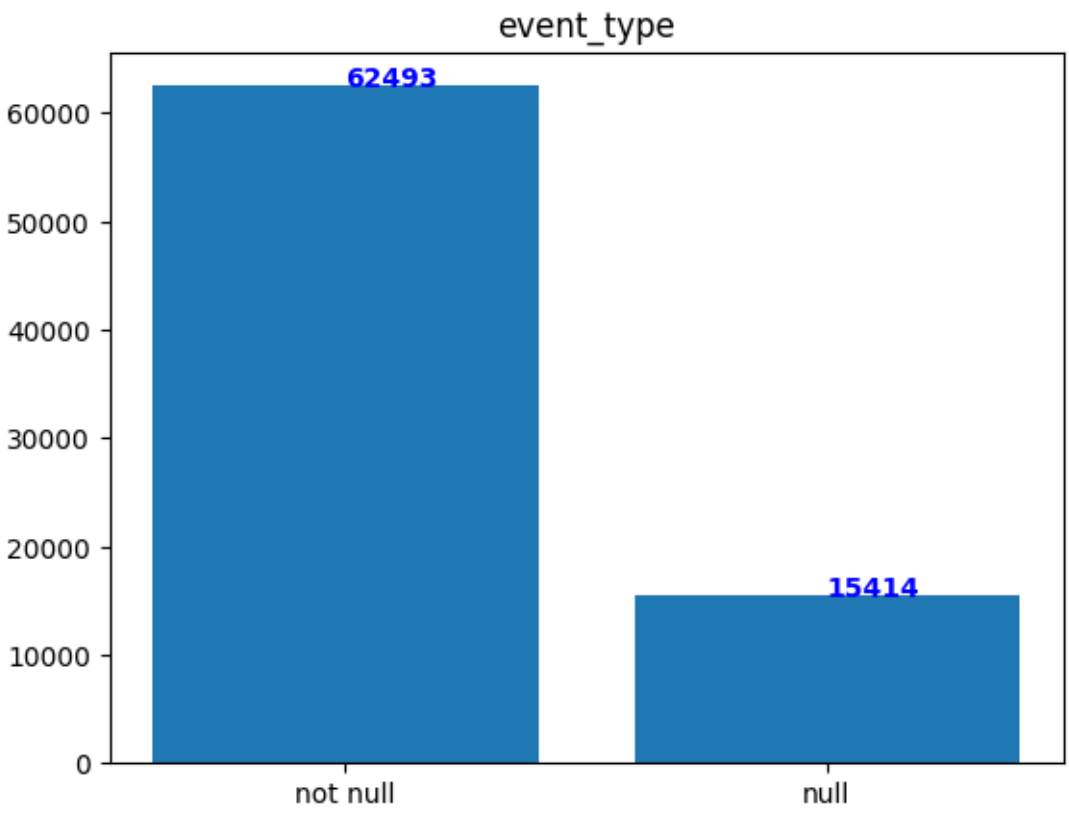
[7]:

	timestamp	user_id	session_id
count	77907	62446.000000	77907.000000
mean	2023-08-09 14:10:36.259038208	123.696105	6554.397538
min	2023-01-02 01:13:52.744708	101.000000	124.000000
25%	2023-06-17 08:48:25.871105024	111.000000	3309.000000
50%	2023-08-25 10:52:54.598779904	124.000000	6559.000000
75%	2023-10-14 07:08:26.018503936	136.000000	9797.000000
max	2023-11-26 23:57:02.573605	150.000000	12991.000000
std	NaN	14.225628	3718.716857

[8]:
```
from matplotlib import pyplot as plt
def plot_hist(df, col):
    col_info = [df[col].notnull().sum(), df[col].isnull().sum()]
    print(f"not null: {col_info[0]}, null: {col_info[1]}")
    plt.bar(["not null", "null"], col_info)
    for i, v in enumerate(col_info):
        plt.text(i, v, str(v), color="blue", fontweight="bold")
    plt.title(col)
    plt.show()
```

[16]:
```
plot_hist(df, "event_type")
```

```
not null: 62493, null: 15414
```



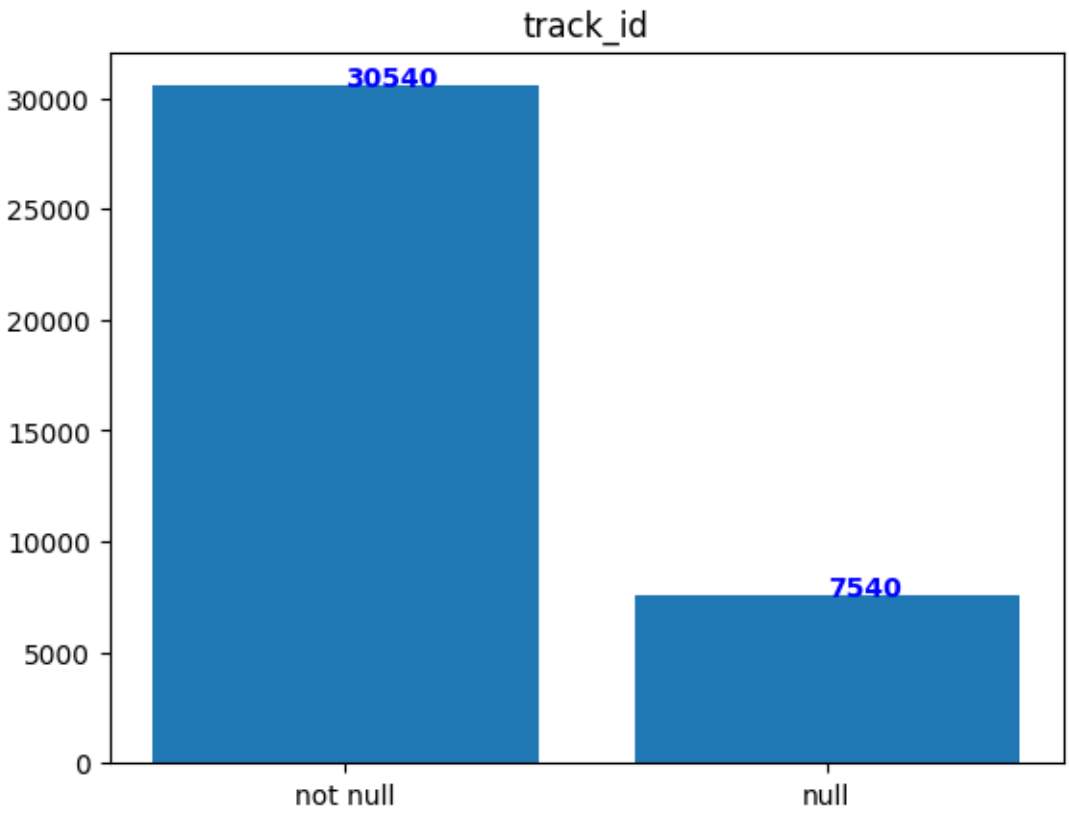
[9]:
```
df_play = df[df["event_type"]=="play"]
df_play = df_play[["timestamp", "track_id"]]
df_play.head()
```

[9]:

	timestamp	track_id
0	2023-11-07 04:12:46.175410	None
4	2023-11-07 04:18:56.567939	7fZrNlR5JAW6iGW0YJj54g
6	2023-11-07 04:20:14.595939	1zLDoWZouIhWZLEBEpTJqV
7	2023-11-07 04:22:50.848939	6pXeqWsXc6r3O1JanHujuX
8	2023-11-07 04:27:30.504939	5kkOyblSB4fHMNiTC69a5t

[10]:
```
plot_hist(df_play, "track_id")
```

```
not null: 30540, null: 7540
```



[11]:
```
df_play = df_play[df_play["track_id"].notnull()]
```

[12]:
```
df_play["timestamp"].min(), df_play["timestamp"].max()
```

[12]:
```
(Timestamp('2023-01-02 01:19:13.277708'),
 Timestamp('2023-11-26 23:49:21.333605'))
```

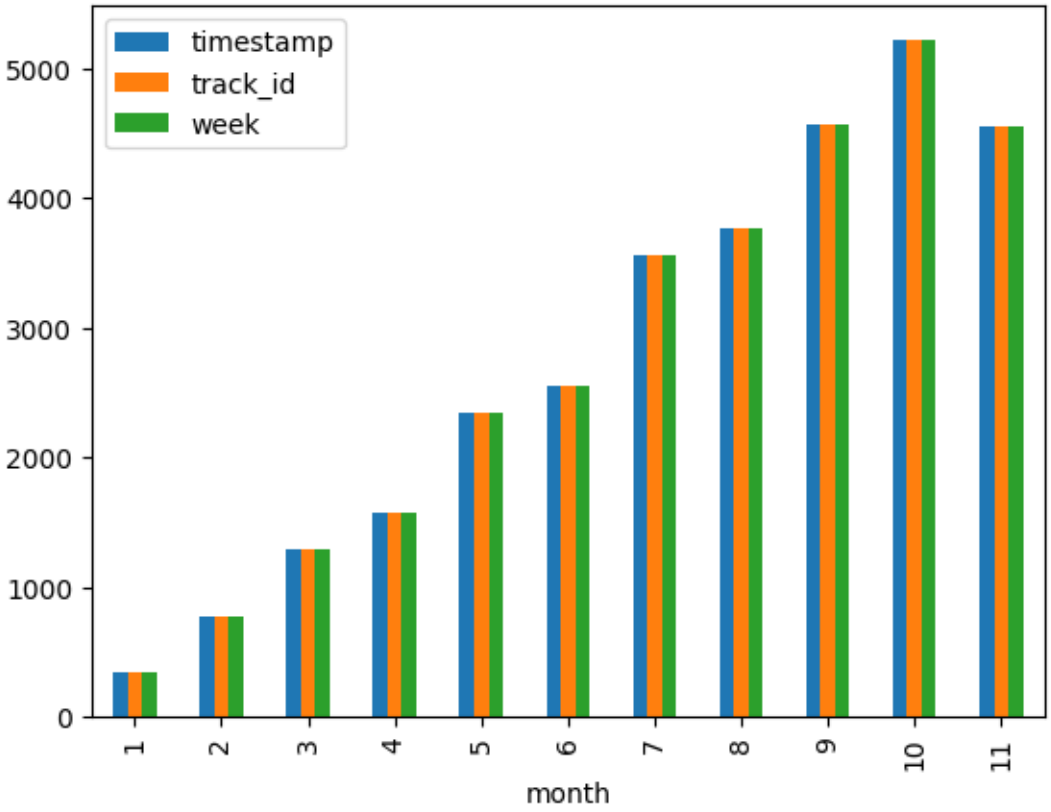
[13]:
```
df_play["month"] = df_play["timestamp"].dt.month
df_play["week"] = df_play["timestamp"].dt.dayofyear // 7
df_play.head()
```

[13]:

	timestamp	track_id	month	week
4	2023-11-07 04:18:56.567939	7fZrNlR5JAW6iGW0YJj54g	11	44
6	2023-11-07 04:20:14.595939	1zLDoWZouIhWZLEBEpTJqV	11	44
7	2023-11-07 04:22:50.848939	6pXeqWsXc6r3O1JanHujuX	11	44
8	2023-11-07 04:27:30.504939	5kkOyblSB4fHMNiTC69a5t	11	44
9	2023-11-07 04:32:27.437939	4qVR3CF8FuFvHN4L6vXlB1	11	44

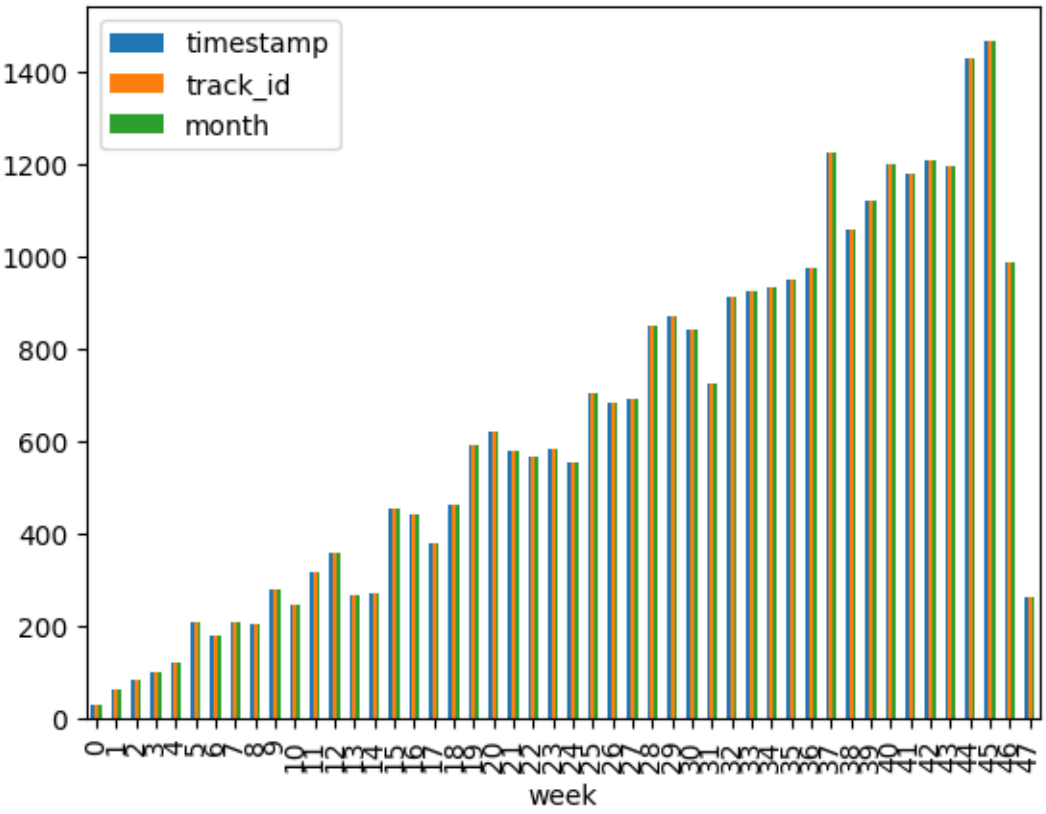
[14]:
```
# make plot how many tracks played in each month
df_play.groupby("month").count().plot.bar()
```

[14]: <Axes: xlabel='month'>



[15]:
```
# make plot how many tracks played in each week
df_play.groupby("week").count().plot.bar()
```

[15]: <Axes: xlabel='week'>



0.1 Podsumowanie

- track_id oraz event_type przyjmują czasami wartość `null`