05.Super users.

A company defines its super users as those who have made at least two transactions. From the following table, write a query to return, for each user, the date when they become a superuser,ordered by oldest super users first. Users who are not super users should also be present in the table.

```python
import pandas as pd
import numpy as  np

data = {'user_id'            : [1,2,1,3,1,2,4,3],
        'product_id'         : [101,105,111,121,101,105,101,105],
        'transaction_date'  : ['12-FEB-20',
                               '13-FEB-20',
                               '14-FEB-20',
                               '15-FEB-20',
                               '16-FEB-20',
                               '17-FEB-20',
                               '16-FEB-20',
                               '15-FEB-20']
       }

users=pd.DataFrame(data)


date=users['transaction_date']
date=pd.to_datetime(date,format="%d-%b-%y")
print(users)
```

```
      user_id  product_id transaction_date
   0        1         101        12-FEB-20
   1        2         105        13-FEB-20
   2        1         111        14-FEB-20
   3        3         121        15-FEB-20
   4        1         101        16-FEB-20
   5        2         105        17-FEB-20
   6        4         101        16-FEB-20
   7        3         105        15-FEB-20
```

```python
df1=(users[['user_id','transaction_date']].sort_values(by=['user_id','transaction_date'])
)
print(f'Dates of transactions:\n{df1}')
```

```
Dates of transactions:
      user_id transaction_date
   0        1        12-FEB-20
   2        1        14-FEB-20
   4        1        16-FEB-20
   1        2        13-FEB-20
   5        2        17-FEB-20
   3        3        15-FEB-20
```

```
    7        3          15-FEB-20
    6        4          16-FEB-20


super=(users.sort_values(by=['user_id','transaction_date'])
        .groupby('user_id'
                ,as_index=False
            )
        .agg(date=('transaction_date'
                ,lambda x:
                        x.iloc[1] if len(x)>1 else pd.NaT
            )
        )
)
print(f'What is the date a super:\n{super}')
```

⇥▾ What is the date a super:
```
      user_id       date
  0         1  14-FEB-20
  1         2  17-FEB-20
  2         3  15-FEB-20
  3         4        NaT
```