22mcs108

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[ ]:

```
import pandas as pd
df=pd.read_csv("./ortho.csv")
df.head()
```

[ ]:

```
  Branch_Plant    Item_Nbr       Item_Desc1       Item_Desc2          Lot_Nbr  \
0        91210     8270310  Dummy Value 48  Dummy Value 95  Dummy Value 100
1        91210    71150004  Dummy Value 31  Dummy Value 75   Dummy Value 54
2        91210    71150003  Dummy Value 31  Dummy Value 89   Dummy Value 39
3        91210   234010061  Dummy Value 74  Dummy Value 36   Dummy Value 32
4        91209    5545A701  Dummy Value 16  Dummy Value 53   Dummy Value 98

   Location  Product_Line_Code       Product_Line Item_Type_Code  \
0    SSBULK                101              Knees            IMP
1  G12ES1E01               101              Knees            IMP
2  G01FS1B01               101              Knees            IMP
3  T01AS1C01               105  Surgical Implants            IMP
4  P02AS1A01               101              Knees            IMP

    Item_Type  … Qty_On_Hand Qty_Hard_Committed Total_Value  \
0  Implant SKU  …          24                  0   132631.38
1  Implant SKU  …           3                  0    20938.15
2  Implant SKU  …           8                  0    55917.15
3  Implant SKU  …          10                  0    33614.42
4  Implant SKU  …           2                  0    27788.00

  Total_Value_In_Lacs  Qty_Soft_Committed  Qty_Work_Order_Hard_Committed  \
0                1.33                   0                              0
1                0.21                   0                              0
2                0.56                   0                              0
3                0.34                   0                              0
4                0.28                   0                              0

  Qty_Future_Committed Qty_Available Year_Expiry  Item_Month_Aging.1
0                    0            24        2023                   1
1                    0             3        2023                   3
2                    0             8        2023                   5
```

```
3                    0            10         2020                      31
4                    0             2         2022                      15

[5 rows x 32 columns]
```

0.2 1. Top 5 products

[ ]:

```
import seaborn as sn
import numpy as np
tsortedDf=set(df.Product_Line)
# n=len(tsortedDf)
arr=list(tsortedDf)
arr
```

[ ]:

```
['Cranio-Maxillofacial',
 'Video',
 'MEDPOR',
 'General Surgery',
 'NSE Other (incl ENT&SilverGli)',
 'Neuro',
 'Navigation',
 'Thoraco-Lumbar',
 'Interbody Devices',
 'Micro - NSE',
 'Endoscopy Service',
 'Cervical',
 'Interventional Pain']
```

[ ]:

```
n=len(arr)
n
```

[ ]:

```
13
```

[ ]:

```
arrLabel=[]
arrCount=[]
j=0
for i in arr:
    x=df.loc[df.Product_Line==i]
    t=x.Qty_Available.count()
    print(j,i,t)
    arrLabel.append(i)
    arrCount.append(t)
    j=j+1
    # arrCount.add(i,t)
```

```
0 Cranio-Maxillofacial 67
1 Video 45
```

```
2 MEDPOR 6
3 General Surgery 60
4 NSE Other (incl ENT&SilverGli) 25
5 Neuro 12
6 Navigation 13
7 Thoraco-Lumbar 44
8 Interbody Devices 5
9 Micro - NSE 49
10 Endoscopy Service 1
11 Cervical 6
12 Interventional Pain 4
```

[ ]:

```
print(arrCount)
print(arrLabel)
```

```
[67, 45, 6, 60, 25, 12, 13, 44, 5, 49, 1, 6, 4]
['Cranio-Maxillofacial', 'Video', 'MEDPOR', 'General Surgery', 'NSE Other (incl
ENT&SilverGli)', 'Neuro', 'Navigation', 'Thoraco-Lumbar', 'Interbody Devices',
'Micro - NSE', 'Endoscopy Service', 'Cervical', 'Interventional Pain']
```

[ ]:

```
dataCount=pd.DataFrame(list(zip(arrLabel,arrCount)),columns=['Label','Count'])

dataForPlot=dataCount.head().sort_values(by='Count',ascending=False)
dataForPlot.head()
```

[ ]:

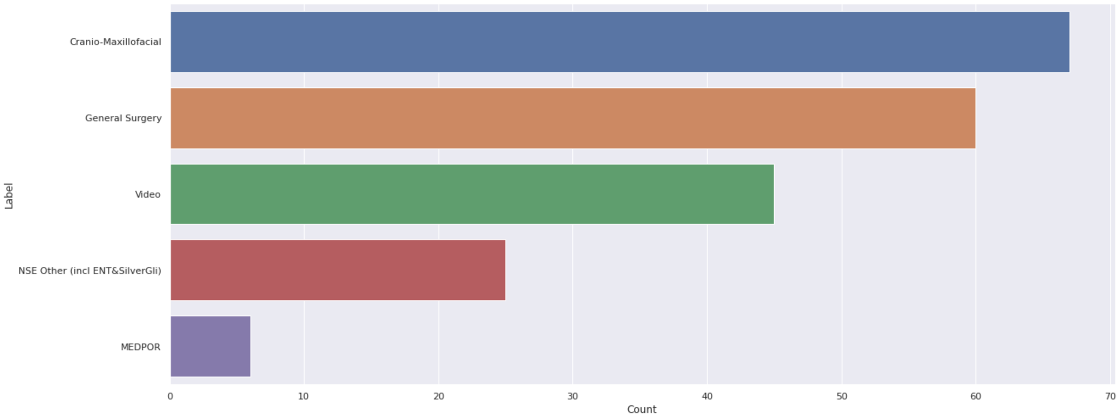
```
                           Label  Count
0           Cranio-Maxillofacial     67
3                General Surgery     60
1                          Video     45
4  NSE Other (incl ENT&SilverGli)     25
2                         MEDPOR      6
```

[ ]:

```
sn.barplot(x=dataForPlot.Count,y=dataForPlot.Label)
```

[ ]:

```
<AxesSubplot:xlabel='Count', ylabel='Label'>
```



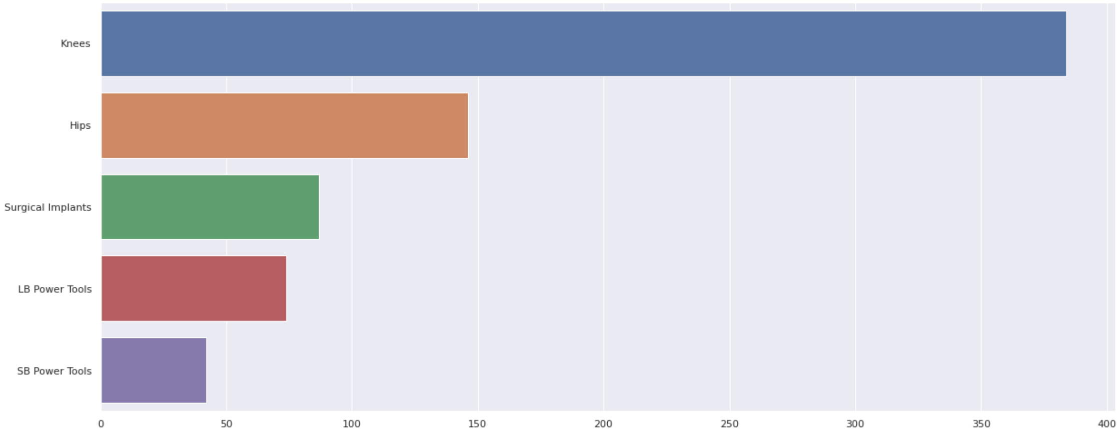
```
[ ]: import seaborn as sn
     import numpy as np
     tsortedDf=set(df.Product_Line)
     # n=len(tsortedDf)
     arr=list(tsortedDf)
     t=df.Product_Line.value_counts()
     topFive=t.head(5)
     topFive
```

```
[ ]: Knees                    384
     Hips                     146
     Surgical Implants         87
     LB Power Tools            74
     SB Power Tools            42
     Name: Product_Line, dtype: int64
```

```
[ ]: label=['Knees','Hips','Surgical Implants','LB Power Tools','SB Power Tools']
     arr=np.array(topFive)
     sn.barplot(arr,y=label)
```

```
/home/ubuntu/anaconda3/lib/python3.9/site-packages/seaborn/_decorators.py:36:
FutureWarning: Pass the following variable as a keyword arg: x. From version
0.12, the only valid positional argument will be `data`, and passing other
arguments without an explicit keyword will result in an error or
misinterpretation.
  warnings.warn(
```

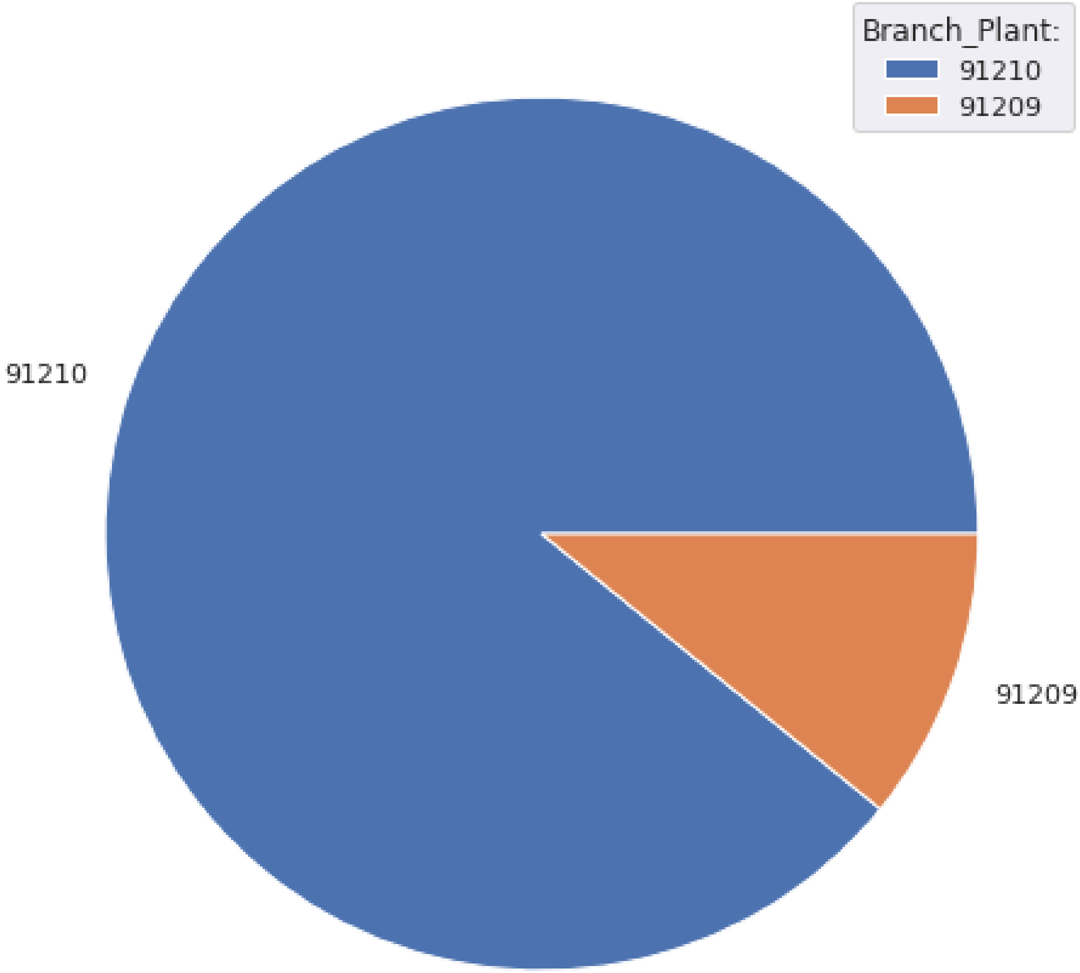
```
[ ]: <AxesSubplot:>
```



0.3 2. Branch Plant Split

[ ]:

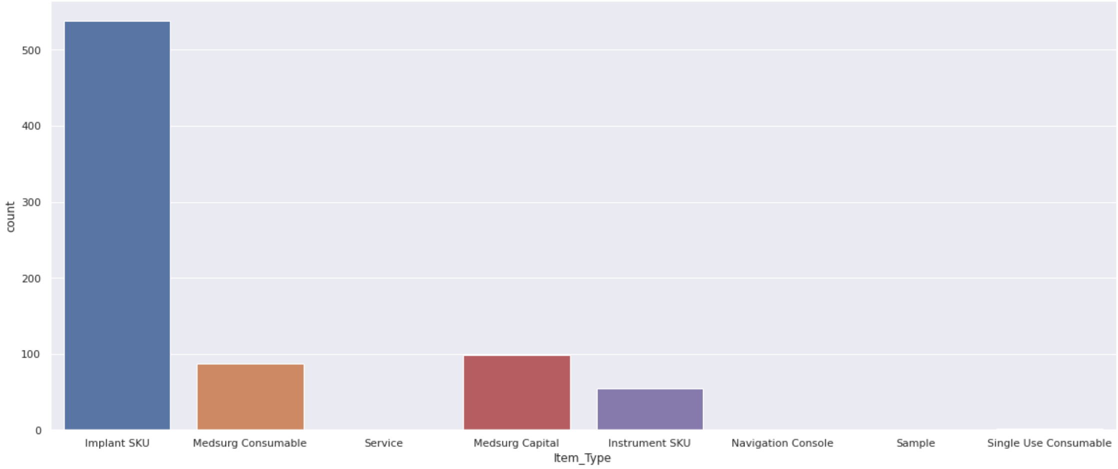
```
import matplotlib.pyplot as plt
arr=[91210,91209]
t=df.Branch_Plant.value_counts()
plt.pie(t,labels=arr)
plt.legend(title = "Branch_Plant:")
plt.show()
```



0.4 3. Item Type Split

```
[ ]: sn.set(rc={'figure.figsize':(20,8.27)})
     sn.countplot(x =df.Item_Type)
```

```
[ ]: <AxesSubplot:xlabel='Item_Type', ylabel='count'>
```



0.5 4. Upcoming Item Expiry

```
[ ]: val=df.Year_Expiry.value_counts()
     val=val.sort_index()
     val
```

```
[ ]: 2019     42
     2020     79
     2021    100
     2022    197
     2023    192
     2037      1
     2038      1
     2040     69
     2099    102
     Name: Year_Expiry, dtype: int64
```

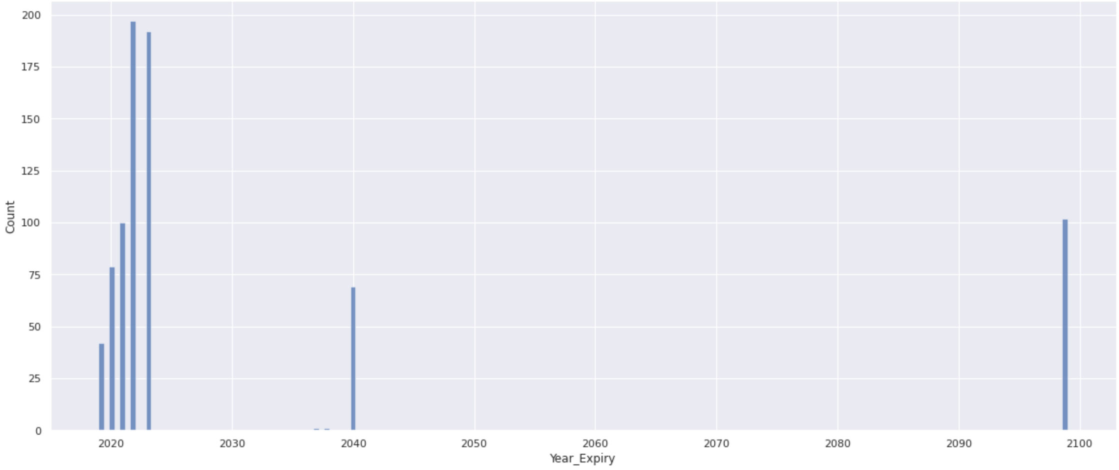
```
[ ]: t=set(np.array(df.Year_Expiry))
     listOfSet = list(t)
     listOfSet
```

```
[ ]: [2019, 2020, 2021, 2022, 2023, 2099, 2037, 2038, 2040]
```

[ ]:

```
sn.histplot(df.Year_Expiry)
# plt.grid()
```

```
[ ]: <AxesSubplot:xlabel='Year_Expiry', ylabel='Count'>
```



[ ]:

```
import pandas as pd
df=pd.read_csv("./part1.csv")
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 337 entries, 0 to 336
Data columns (total 32 columns):
 #   Column                         Non-Null Count  Dtype
---  ------                         --------------  -----
 0   Branch_Plant                   337 non-null    int64
 1   Item_Nbr                       337 non-null    object
 2   Item_Desc1                     337 non-null    object
 3   Item_Desc2                     337 non-null    object
 4   Lot_Nbr                        337 non-null    object
 5   Location                       337 non-null    object
 6   Product_Line_Code              337 non-null    int64
 7   Product_Line                   337 non-null    object
 8   Item_Type_Code                 337 non-null    object
 9   Item_Type                      337 non-null    object
 10  Product_Level3                 337 non-null    object
 11  Product_Level4                 337 non-null    object
 12  Product_Level5                 337 non-null    object
 13  First_GRN_Date                 337 non-null    object
 14  Item_Year_Aging                337 non-null    int64
 15  Item_Month_Aging               337 non-null    int64
 16  Expiry_Date                    337 non-null    object
 17  Manufacturing_Date_(PRC only)  36 non-null     object
 18  UOM                            337 non-null    object
 19  Pack_Content                   337 non-null    int64
 20  Lot_Status                     6 non-null      object
 21  Unit_Cost                      337 non-null    float64
 22  Qty_On_Hand                    337 non-null    int64
 23  Qty_Hard_Committed             337 non-null    int64
 24  Total_Value                    337 non-null    float64
 25  Total_Value_In_Lacs            337 non-null    float64
 26  Qty_Soft_Committed             337 non-null    int64
 27  Qty_Work_Order_Hard_Committed  337 non-null    int64
 28  Qty_Future_Committed           337 non-null    int64
 29  Qty_Available                  337 non-null    int64
 30  Year_Expiry                    337 non-null    int64
 31  Item_Month_Aging.1             337 non-null    int64
dtypes: float64(3), int64(13), object(16)
memory usage: 84.4+ KB
```

[ ]:

```
df.dropna()
tsortedDf=set(df.Product_Line)
n=len(tsortedDf)
t=df.filter(items=['Product_Line','Total_Value']).value_counts()
topFive=t.head(5)
topFive
```

[ ]:

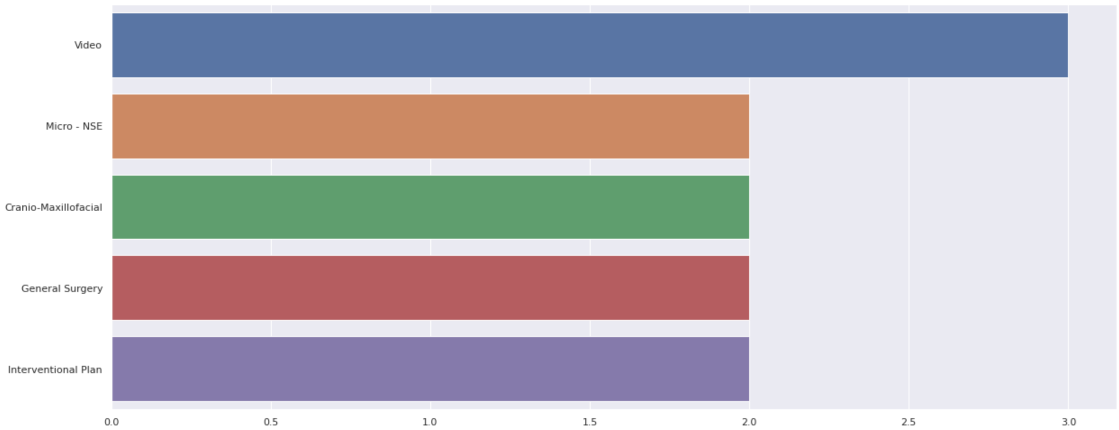
```
Product_Line     Total_Value
General Surgery  7909.82        3
Video            74508.12       2
                 64285.95       2
General Surgery  7367.98        2
                 75404.60       2
dtype: int64
```

[ ]:

```
label=['Video','Micro - NSE','Cranio-Maxillofacial','General␣
 ↪Surgery','Interventional Plan']
sn.barplot(x=topFive,y=label)
```

[ ]:

```
<AxesSubplot:>
```


Video
Micro - NSE
Cranio-Maxillofacial
General Surgery
Interventional Plan
0.0
0.5
1.0
1.5
2.0
2.5
3.0

[ ]: