

1. Read CSV into python data structure

```
In [1]: Product_details=[]
Supplier_details=dict()
Customer_details=[]
gender={}

fp1=open("Sales.csv","r")
data=fp1.readline()

while(True):

    data=fp1.readline()
    if not data:
        break;
    #print(data)
    data=data.replace("\n","")
    temp=data.split(",")
    Product_details.append(temp[1])
    Customer_details.append(temp[3])
    Supplier_details.update({temp[0]:temp[2]})
    gender.update({temp[3]:temp[4]})

fp1.close()

Customer_details=tuple(Customer_details)
print(type(Customer_details))

<class 'tuple'>
```

```
In [3]: print("\nProduct_details\n",Product_details,end="")
print("\n\nCustomer_details\n",Customer_details,end="")
print("\n\nSupplier_details\n",Supplier_details,end="")
print("\n\nGender_details\n",gender,end="")

Product_details
['Lenovo Laptop', 'Samsung M31', 'Realmi 10pro', 'Oppo F21', 'Lenovo Laptop', 'Samsung M31', '"LG TV 32"', 'Oppo F 21', 'Lenovo Laptop', 'Samsung M31', '"LG TV 32"', 'Lenovo Laptop', 'Samsung M31', 'Realmi 10pro', 'Lenovo Laptop', 'Oppo F21', '"LG TV 32"', 'Lenovo Laptop', 'Samsung M31', '"LG TV 32"']

Customer_details
('Kaustubh Mahajan', 'Siddhi Kiwale', 'Sanket Kandalkar', 'Yash Mali', 'Yash Bagul', 'Siddhi Kiwale', 'Sanket Kandalkar', 'Kaustubh Mahajan', 'Yash Mali', 'Siddhi Kiwale', 'Siddhi Kiwale', 'Siddhi Kiwale', 'Sanket Kandalkar', 'Kaustubh Mahajan', 'Yash Mali', 'Siddhi Kiwale', 'Tanuja Mali', 'Kaustubh Mahajan', 'Sanket Kandalkar', 'Siddhi Kiwale', 'Kaustubh Mahajan', 'Yash Mali')

Supplier_details
{'P00001': 'Raka Ele.', 'P00002': 'Vijay Sales', 'P00003': 'Gada Ele.', 'P00004': 'Surya Ele.', 'P00005': 'Raka Ele.', 'P00006': 'Gada Ele.', 'P00007': 'Vijay Sales', 'P00008': 'Surya Ele.', 'P00009': 'Raka Ele.', 'P00010': 'Gada Ele.', 'P00011': 'Surya Ele.', 'P00012': 'Raka Ele.', 'P00013': 'Surya Ele.', 'P00014': 'Raka Ele.', 'P00015': 'Gada Ele.', 'P00016': 'Vijay Sales', 'P00017': 'Deshmukh sales', 'P00018': 'Raka Ele.', 'P00019': 'Deshmukh sales', 'P00020': 'Gada Ele.'}

Gender_details
{'Kaustubh Mahajan': 'Male', 'Siddhi Kiwale': 'Female', 'Sanket Kandalkar': 'Male', 'Yash Mali': 'Male', 'Yash Bagul': 'Male', 'Tanuja Mali': 'Female'}
```

2. Find the most popular product for sales

```
In [4]: frequency = {}#{Lenovo Laptop:3}
# iterating over the list
for item in Product_details:
    # checking the element in dictionary
    if item in frequency:
        # incrementing the counter
        frequency[item] += 1
    else:
        # initializing the count
        frequency[item] = 1
# printing the frequency
print(frequency)
marklist = sorted(frequency.items(), key=lambda x:x[1],reverse=True)
sortdict = dict(marklist)
print(sortdict)
print("The most popular product for sales",list(sortdict.keys())[0], " sold ",list(sortdict.values())[0],"times")

{'Lenovo Laptop': 6, 'Samsung M31': 5, 'Realmi 10pro': 2, 'Oppo F21': 3, '"LG TV 32"': 4}
{'Lenovo Laptop': 6, 'Samsung M31': 5, '"LG TV 32"': 4, 'Oppo F21': 3, 'Realmi 10pro': 2}
The most popular product for sales Lenovo Laptop sold 6 times
```

OR

```
In [ ]: # to install collections
pip install collections #shift+enter

In [6]: from collections import Counter
counter = dict(Counter(Product_details))
sorted_counter = sorted(counter.items(), key=lambda x:x[1],reverse=True)
sorted_counter=dict(sorted_counter)
print("The most popular product for sales",list(sorted_counter.keys())[0],
      " sold ",list(sorted_counter.values())[0],"times")

The most popular product for sales Lenovo Laptop sold 6 times
```

3. Find the best supplier for sales

```
In [7]: frequency = {}
# iterating over the list
for item in Supplier_details.values():
    # checking the element in dictionary
    if item in frequency:
        # incrementing the counter
        frequency[item] += 1
    else:
        # initializing the count
        frequency[item] = 1
# printing the frequency
print(frequency)
marklist = sorted(frequency.items(), key=lambda x:x[1],reverse=True)
sortdict = dict(marklist)
print(sortdict)
print("The most popular Supplier for sales",list(sortdict.keys())[0],
      " sold ",list(sortdict.values())[0],"Items")

{'Raka Ele.': 6, 'Vijay Sales': 3, 'Gada Ele.': 5, 'Surya Ele.': 4, 'Deshmukh sales': 2}
{'Raka Ele.': 6, 'Gada Ele.': 5, 'Surya Ele.': 4, 'Vijay Sales': 3, 'Deshmukh sales': 2}
The most popular Supplier for sales Raka Ele. sold 6 Items
```

OR

```
In [8]: from collections import Counter
counter = dict(Counter(list(Supplier_details.values())))
sorted_counter = sorted(counter.items(), key=lambda x:x[1],reverse=True)
sorted_counter=dict(sorted_counter)
print("The most popular Supplier for sales",list(sorted_counter.keys())[0],
      " sold ",list(sorted_counter.values())[0],"Items")

The most popular Supplier for sales Raka Ele. sold 6 Items
```

4. Find the customer who buys most of the products.

```
In [9]: frequency = {}
# iterating over the list
for item in Customer_details:
    # checking the element in dictionary
    if item in frequency:
        # incrementing the counter
        frequency[item] += 1
    else:
        # initializing the count
        frequency[item] = 1
# printing the frequency
print("Frequenct is as below:\n",frequency)
marklist = sorted(frequency.items(), key=lambda x:x[1],reverse=True)
sortdict = dict(marklist)
print("\nSorted dict is as below:\n",sortdict)
print("\n\nThe customer who buys most of the products",list(sortdict.keys())[0],
      " buy ",list(sortdict.values())[0],"Items")

Frequenct is as below:
{'Kaustubh Mahajan': 5, 'Siddhi Kiwale': 5, 'Sanket Kandalkar': 4, 'Yash Mali': 4, 'Yash Bagul': 1, 'Tanuja Mali': 1}

Sorted dict is as below:
{'Kaustubh Mahajan': 5, 'Siddhi Kiwale': 5, 'Sanket Kandalkar': 4, 'Yash Mali': 4, 'Yash Bagul': 1, 'Tanuja Mali': 1}

The customer who buys most of the products Kaustubh Mahajan buy 5 Items
```

OR

```
In [10]: from collections import Counter
counter = dict(Counter(Customer_details))
sorted_counter = sorted(counter.items(), key=lambda x:x[1],reverse=True)
sorted_counter=dict(sorted_counter)
print("The customer who buys most of the products",list(sorted_counter.keys())[0],
      " buy ",list(sorted_counter.values())[0],"Items")

The customer who buys most of the products Kaustubh Mahajan buy 5 Items
```

5. Find the number of customer who are ‘Female’

```
In [11]: # Identify Unique Customer
from collections import Counter
counter = dict(Counter(Customer_details))
names=list(counter.keys())
print(names)
male=0
female=0

for name in names:
    if gender[name]=="Male":
        male=male+1
    if gender[name]=="Female":
        female=female+1
print("Total no of Male=",male)
print("Total no of Female=",female)

['Kaustubh Mahajan', 'Siddhi Kiwale', 'Sanket Kandalkar', 'Yash Mali', 'Yash Bagul', 'Tanuja Mali']
Total no of Male= 4
Total no of Female= 2
```