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#1)READ CSV INTO PYTHON DATA STRUCTURE
Product_details=[]
Supplier_details=dict()
Customer_details=[] #tuple()
gender={}

fp1=open("/content/sample_data/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()
#print(type(Customer_details))
Customer_details=tuple(Customer_details)
print(type(Customer_details))

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="")
```

OUTPUT 1)

```
<class 'tuple'>

Product_details
 ['Lenovo Laptop', 'Samsung M31', 'Realmi 10pro', 'Oppo F21', 'Lenovo
Laptop', 'Samsung M31', '"LG TV 32"""', 'Oppo F21', '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', '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 '}{'Lenovo Laptop': 1}
```

```python
#2)FIND THE MOST POPULAR PRODUCT FOR SALES

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:
      #intitalizing the count
      frequency[item]=1
      #printing the frequency
      print(frequency)
      marklist= sorted(frequency.items(),key=lambda 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],"time
s")
```

OUTPUT 2)

```
{'Lenovo Laptop': 1}
The most popular product for sales Lenovo Laptop sold 1 times
{'Lenovo Laptop': 1, 'Samsung M31': 1}
{'Lenovo Laptop': 1, 'Samsung M31': 1}
The most popular product for sales Lenovo Laptop sold 1 times
{'Lenovo Laptop': 1, 'Samsung M31': 1, 'Realmi 10pro': 1}
{'Lenovo Laptop': 1, 'Samsung M31': 1, 'Realmi 10pro': 1}
The most popular product for sales Lenovo Laptop sold 1 times
{'Lenovo Laptop': 1, 'Samsung M31': 1, 'Realmi 10pro': 1, 'Oppo F21':
1}
```

```
{'Lenovo Laptop': 1, 'Samsung M31': 1, 'Realmi 10pro': 1, 'Oppo F21':
1}
The most popular product for sales Lenovo Laptop sold 1 times
{'Lenovo Laptop': 2, 'Samsung M31': 2, 'Realmi 10pro': 1, 'Oppo F21':
1, '"LG TV 32"""': 1}
{'Lenovo Laptop': 2, 'Samsung M31': 2, 'Realmi 10pro': 1, 'Oppo F21':
1, '"LG TV 32"""': 1}
The most popular product for sales Lenovo Laptop sold 2 times
```

```
#3) FIND THE BEST SUPPLIER FOR SALES

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:
      #intializing 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],"Item
s")
```

OUTPUT 3)

```
{'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
```

```
#4 ) Find teh customer who buys most of the products.
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:
      #intializing the count
      frequency[item]=1
#printing the frequency
```

```
print("Frequency 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],"It
ems")
```

OUTPUT 4)

Frequency 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

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```
#5) FIND THE NUMBER OF CUSTOMERS WHO ARE 'FEMALE'

# 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+=1
   print("Total no of male=",male)
   print("Total no of Female",female)
```

OUTPUT 5)

['Kaustubh Mahajan' , 'Siddhi Kiwale' , 'Sanket Kandalkar' , 'Yash Mali' , 'Yash Bagul' , 'Tanuja Mali']
Total no of male= 1
Total no of Female 1
Total no of male= 4
Total no of Female 2