1. Read CSV into python data structure

```python
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'>
```

```python
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 Kandal
        kar', '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 El
        e.', 'P00006': 'Gada Ele.', 'P00007': 'Vijay Sales', 'P00008': 'Surya Ele.', 'P00009': 'Raka Ele.', 'P00010': 'Gada E
        le.', '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', 'P0002
        0': 'Gada Ele.'}

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

2. Find the most popular product for sales

```python
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

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

```python
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

```python
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

```python
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.

```python
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("Freqenct 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")

        Freqenct 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

```python
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'

```python
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
```