Lab Sheet 08

01)Answer

```
package lab08;

public class List {
    private int maxsize;
    private int position;
    private Product[]entry;

    public List(int size){
        maxsize=size;
        position=-1;
        entry=new Product[maxsize];
    }
    boolean isEmpty(){
        return(position==-1);
    }
    boolean isFull(){
        return(position==maxsize-1);
    }
    public int listSize(){
        return(position+1);
    }
    public void insertLast(Product x){
        if (isFull()) {
            System.out.println("Attempt to delete an entry from an empty list");
        }else{
            entry[++position]=x;
        }
    }
    public void insertList(int p,Product x){
        if (isFull()) {
            System.out.println("Attempt to delete an entry from an empty list");
        }else if (p<0||p>listSize()) {
            System.out.println("Attempt to delete a position not in the list");
        }else{
            for(int i=listSize();i>p;i--){
                entry[i]=entry[i-1];
                entry[p]=x;
```

```
                position++;
            }
        }
    }
    public void deleteList(int p){
        if (isEmpty()) {
            System.out.println("Attempt to delete an entry from an empty list");
        }else if (p<0||p>listSize()) {
            System.out.println("Attempt to delete a position not in the list");
        }else{
            for(int i=p;i<listSize()-1;i++){
                entry[i]=entry[i-1];
                position--;
            }
        }
    }
    public void retriveList(int p){
        if (isEmpty()) {
            System.out.println("Attempt to delete an entry from an empty list");
        }else if(p<0||p>listSize()){
            System.out.println("Attempt to delete a position not in the list");
        }else{
            System.out.println(entry[p]);
        }
    }
    public void replaceList(int p,Product x){
        if (isEmpty()) {
            System.out.println("Attempt to delete an entry from an empty list");
        }else if(p<0||p>listSize()){
            System.out.println("Attempt to delete a position not in the list");
        }else{
            entry[p]=x;
        }
    }
    public void traverseList(){
        for (int i = 0; i < position+1; i++) {
            System.out.println(entry[i]);
        }
    }
    public double calculatesalesAmount(Product x){
        return(x.unitePrice*x.QSOFriday);
    }
    public void displaysalesAmount(){
        System.out.println("Product ID\tSales Amount(Rs.)");
        for (int i = 0; i < listSize(); i++) {
```

```
            double saleAmount=calculatesalesAmount(entry[i]);
            System.out.println(entry[i].productID+"\t\t"+saleAmount);
        }
    }
    public void sortBysalesAmount(){
        for (int i = 0; i < listSize()-1; i++) {
            for (int j = i+1; j < listSize(); j++) {
                if
(calculatesalesAmount(entry[i])<calculatesalesAmount(entry[j])) {
                    Product temp=entry[i];
                    entry[i]=entry[j];
                    entry[j]=temp;
                }
            }
        }
    }
    public void correctQuantity(String x,int y){
        for (int i = 0; i < listSize(); i++) {
            if (entry[i].productName.trim().equals(x)) {
                entry[i].QSOFriday=y;
            }
        }
    }
    public void displaysalesAbove(double amount){
        System.out.println("Products with Sales Amount above Rs.: " + amount +
"/=");
        for (int i = 0; i < listSize(); i++) {
            double saleAmount=calculatesalesAmount(entry[i]);
            if (saleAmount>amount) {
                System.out.println(entry[i]);
            }
        }
    }
    public void calculateSales(String x){
        double total=0;
        for (int i = 0; i < listSize(); i++) {
            if (entry[i].category.trim().equals(x)) {
                total+=calculatesalesAmount(entry[i]);
            }
        }
        System.out.println("Total Sales Amount for "+x+" Category: Rs.
"+total+"/=");
    }
    public double calculateElectonicSales(){
        double total=0;
```

```
        for (int i = 0; i < listSize(); i++) {
            if (entry[i].category.trim().equals("Electronics")) {
                total+=calculatesalesAmount(entry[i]);
            }
        }
        return total;
    }
    public double calculatetotalsales(){
        double Total=0;
        for (int i = 0; i < listSize(); i++) {
            Total+=calculatesalesAmount(entry[i]);
        }
        return Total;
    }
    public double calculateElectronicsalespercentage(){
        return(calculateElectonicSales()/calculatetotalsales())*100;
    }
}
```

```
package lab08;

public class Product {
    public String productID;
    public String productName;
    public String category;
    public double unitePrice;
    public int QSOFriday;

    public Product(String productID, String productName, String category, double
unitePrice, int QSOFriday) {
        this.productID = productID;
        this.productName = productName;
        this.category = category;
        this.unitePrice = unitePrice;
        this.QSOFriday = QSOFriday;
    }
    public String toString(){
        return(productID+"\t\t"+productName+"\t\t"+category+"\t\t"+unitePrice+"\t
\t"+QSOFriday);
    }


}
```

```
package lab08;

public class mainPromt {
    public static void main(String[] args) {
        Product p1=new Product("P108", "Wireless Mouse\t", "Electronics",
2160,30);
        Product p2=new Product("P034", "Handbag\t\t", "Accessories ", 3450,5);
        Product p3=new Product("P078", "Phone cover\t", "Accessories ", 1750,26);
        Product p4=new Product("P105", "Bluetooth Speaker", "Electronics",
13780,5);
        Product p5=new Product("P003", "Ladies blouse\t", "Clothing ", 1650,18);
        Product p6=new Product("P053", "Shampoo\t\t", "Groceries", 2370,20);
        Product p7=new Product("P114", "Laptop\t\t", "Electronics", 250000,3);
        Product p8=new Product("P004", "Frock\t\t", "Clothing ", 4520,10);
        Product p9=new Product("P117", "Earphone\t", "Electronics", 7860,2);
        Product p10=new Product("P120", "Microwave oven\t", "Electronics",
56830,15);

        List l1=new List(10);
        l1.insertLast(p1);
        l1.insertLast(p2);
        l1.insertLast(p3);
        l1.insertLast(p4);
        l1.insertLast(p5);
        l1.insertLast(p6);
        l1.insertLast(p7);
        l1.insertLast(p8);
        l1.insertLast(p9);
        l1.insertLast(p10);

        System.out.println("Part (a)----------------------------------------
------------------------------");
        System.out.println("Product ID\tProduct
Name\t\t\tCategory\t\tUnitePrice(Rs.)\tQuantity Sold on Friday");
        l1.traverseList();

        System.out.println("");
        System.out.println("Part (b)----------------------------------------
------------------------------");
        System.out.println("");
        l1.displaysalesAmount();

        System.out.println("");
```

```
        System.out.println("Part (c)-----------------------------------------
------------------------------");
        System.out.println("");
        l1.sortBysalesAmount();
        l1.traverseList();

        System.out.println("");
        System.out.println("Part (d)-----------------------------------------
------------------------------");
        System.out.println("");
        l1.correctQuantity("Frock", 49);
        l1.traverseList();

        System.out.println("");
        System.out.println("Part (e)-----------------------------------------
------------------------------");
        System.out.println("");
        l1.displaysalesAbove(40000);


        //System.out.println("");
        //l1.calculateSales("Electronics");
        System.out.println("");
        System.out.println("Part (f)-----------------------------------------
------------------------------");
        System.out.println("");
        double ElectronicsSales=l1.calculateElectonicSales();
        System.out.println("Total Sales Amount for Electronics Category: Rs.
"+ElectronicsSales+"/=");

        System.out.println("");
        System.out.println("Part (g)-----------------------------------------
------------------------------");
        System.out.println("");
        double calculatepercentage=l1.calculateElectronicsalespercentage();
        System.out.println("Percentage of Sales from Electronics:
"+calculatepercentage+"%");
        System.out.println("-------------------------------------------------
------------------------------");
    }
}
```

Outputs:-

```
rithms\Peactical Tutorial\Labsheet-08'; & 'C:\Program Files\Java\jdk-17\bin\java.exe' '-agentlib:jdwp=transport=dt_so
-cp' 'C:\Users\desit\AppData\Roaming\Code\User\workspaceStorage\81f03df18e22e16b2b1b6e3dfb144b9e\redhat.java\jdt_ws\L
Part (a)-------------------------------------------------------------------------
Product ID      Product Name                    Category                UnitePrice(Rs.) Quantity Sold on Friday
P108            Wireless Mouse                  Electronics             2160.0          30
P034            Handbag                         Accessories             3450.0          5
P078            Phone cover                     Accessories             1750.0          26
P105            Bluetooth Speaker               Electronics             13780.0         5
P003            Ladies blouse                   Clothing                1650.0          18
P053            Shampoo                         Groceries               2370.0          20
P114            Laptop                          Electronics             250000.0                3
P004            Frock                           Clothing                4520.0          10
P117            Earphone                        Electronics             7860.0          2
P120            Microwave oven                  Electronics             56830.0         15

Part (b)-------------------------------------------------------------------------

Product ID      Sales Amount(Rs.)
P108            64800.0
P034            17250.0
P078            45500.0
P105            68900.0
P003            29700.0
P053            47400.0
P114            750000.0
P004            45200.0
P117            15720.0
P120            852450.0

Part (c)-------------------------------------------------------------------------

P120            Microwave oven                  Electronics             56830.0         15
P114            Laptop                          Electronics             250000.0                3
P105            Bluetooth Speaker               Electronics             13780.0         5
P108            Wireless Mouse                  Electronics             2160.0          30
P053            Shampoo                         Groceries               2370.0          20
P078            Phone cover                     Accessories             1750.0          26
P004            Frock                           Clothing                4520.0          10
P003            Ladies blouse                   Clothing                1650.0          18
P034            Handbag                         Accessories             3450.0          5
P117            Earphone                        Electronics             7860.0          2
```

```
Part (d)--------------------------------------------------------------------------

P120            Microwave oven                  Electronics             56830.0         15
P114            Laptop                          Electronics             250000.0                3
P105            Bluetooth Speaker               Electronics             13780.0         5
P108            Wireless Mouse                  Electronics             2160.0          30
P053            Shampoo                         Groceries               2370.0          20
P078            Phone cover                     Accessories             1750.0          26
P004            Frock                           Clothing                4520.0          49
P003            Ladies blouse                   Clothing                1650.0          18
P034            Handbag                         Accessories             3450.0          5
P117            Earphone                        Electronics             7860.0          2

Part (e)--------------------------------------------------------------------------

Products with Sales Amount above Rs.: 40000.0/=
P120            Microwave oven                  Electronics             56830.0         15
P114            Laptop                          Electronics             250000.0                3
P105            Bluetooth Speaker               Electronics             13780.0         5
P108            Wireless Mouse                  Electronics             2160.0          30
P053            Shampoo                         Groceries               2370.0          20
P078            Phone cover                     Accessories             1750.0          26
P004            Frock                           Clothing                4520.0          49

Part (f)--------------------------------------------------------------------------

Total Sales Amount for Electronics Category: Rs. 1751870.0/=

Part (g)--------------------------------------------------------------------------

Percentage of Sales from Electronics: 82.9012871474541%
------------------------------------------------------------------------------------
```