

LO: 4 Assessment Standard: Classes & Objects, Reading from a Text File.

Question

A fabric consultant has been issued a task of completing statistics for the percentage of different types of fabric used at clothing manufacturing companies. A survey has been done at the following companies:

Chengu Clothing#27#35#12
Bonga Outfitters#43#10#23
Glamour Girls#18#33#21
CoolRays#45#21#12

The format of the entries is as follows:

The first field represents the company name, followed by the percentage of cotton, followed by the percentage of silk, followed by the percentage of satin used.

1.1 Create a file called clothingComp.txt that stores the information above.

1.2 Write a class called ClothingCompany to create variables using the following field properties:

compName (String), **cotton**(int), **silk**(int), **satin**(int), Code a default constructor.

1.3 Create a parameterized constructor that will pass values and initialize all fields in the class.

1.4 Write a toString method that returns the information about the company after concatenating all fields. *The format must be as follows:*

Company Name Cotton Silk Satin

1.5 Write a method called display that receives the array and the size to display.

1.6 Write a method called sort that receives the array and size and sorts in alphabetical order according to the Company name.

1.7 Write a method called search that receives the array, size and the company to search for. The method must return the position of the company that is being searched.

1.8 Write a spaces method to format the display.

1.9 Create a class called TestClothingCompany that:

1.9.1 creates an array named compArr that stores objects of ClothingCompany.

1.9.2 Uses a method called readFromFile that reads the contents of the file into a Scanner object, separates the text into the four required fields, uses the information to create new objects in the ClothingCompany class. Use a counter to reflect the size of the array.

1.9.3 Use a method called menu that allows for the following options:

A: Display B: Sort C: Search and Update Q: Quit

1.9.4 Use a switch statement to cater for each option. If option 'C' is selected, allow the user to input the name of the company to search for, followed by the new percentage of cotton fabric. Update the cotton field for the respective company by making the necessary changes.. If the company to search for does not exist, display a suitable message. The menu options should be displayed until option 'Q' is selected.

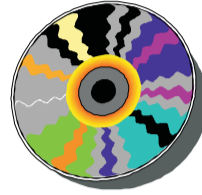


Answer:

```

Class ClothingCompany
{
    private String compName="";
    private int cotton=0;
    private int silk =0;
    private int satin =0;
    ClothingCompany()
    {
    }
    ClothingCompany(String name,int c, int s, int satn)
    {
        compName = name;
        cotton=c;
        silk=s;
        satin = satn;
    }
    public String getName()
    {
        return compName;
    }
    public void setCotton(int c)
    {
        cotton = c;
    }
    public String toString()
    {
        String temp =
        compName+spaces(compName,20)+cotton+spaces(""+cotton,1
        0)
        + silk+spaces(""+silk,10)+satin;
        return temp;
    }
    public String spaces(String s, int w)
    {
        String temp="";
        for (int i=0;i<w-s.length();i++)
        {
            temp += " ";
        }
        return temp;
    }
    public void display(ClothingCompany [] comp,int c)
    {
        for (int i=0;i<c;i++)
        {
            System.out.println(comp[i]);
        }
    }
    public void sort(ClothingCompany []comp,int c)
    {
        for (int i=0;i<c-1;i++)
        {
            for (int j=i+1;j<c;j++)
            {
                if (comp[i].getName().compareTo(comp[j].getName())>0)
                {
                    ClothingCompany temp = comp[i];
                    comp[i] = comp[j];
                    comp[j] = temp;
                }
            }
        }
    }
    public int search(ClothingCompany [] comp,int c, String name)
    {
        int p=-1, i=0;
        boolean flag = false;
        while (!flag && i < c)
        {
            if (comp[i].getName().equalsIgnoreCase(name))
            {
                p=i;
                flag = true;
            }
            i++;
        }
        return p;
    }
}

```

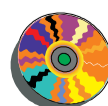


Test Class / Driver Class / User Class

```

import java.io.*;
import java.util.*;
import javax.swing.*;
public class TestClothingCompany
{
    ClothingCompany [] compArr = new ClothingCompany[25];
    ClothingCompany my = new ClothingCompany ( );
    int size=0;
    char option = ' ';
    public static void main (String [] args)
    {
        new TestClothingCompany ( );
        TestClothingCompany ( )
        {
            readFromFile ( ); // calling void method to read contents of
            file.
            do

```



```

        menu ( );
        option = JOptionPane.showInputDialog("Enter your
        option").charAt(0);
        options(option);
    }
    while (option != 'Q');
    }
    public void readFromFile()
    {
        Scanner contents = null;
        try{
            contents = new Scanner (new
            File("clothingComp.txt"));
        }
        catch(FileNotFoundException e)
        {
            System.out.println("Cannot find file");
        }
        while (contents.hasNext ( ))
        {
            String [ ] line = contents.nextLine().split("#");
            compArr[size] = new ClothingCompany(line[0],
            Integer.parseInt(line[1]),
            Integer.parseInt(line[2]),Integer.parseInt(line[3]));
            size++;
        }
    }
    public void menu ( )
    {
        System.out.println(" A. Display");
        System.out.println(" B. Sort");
        System.out.println(" C. Search");
        System.out.println(" Q. Quit");
    }
    public void options(char choice)
    {
        switch(choice)
        {
            case 'A': my.display(compArr,size);
            break;
            case 'B': my.sort(compArr,size);
            my.display(compArr,size);
            break;
            case 'C': String searchName
            =JOptionPane.showInputDialog("Enter
            Company name to search for");
            int posn =
            my.search(compArr,size,searchName);
            if (posn>=0)
            {
                int
                percent=Integer.parseInt(JOptionPane.showInputDialog("E
                nter
                new percentage of cotton for "+searchName));
                compArr[posn].setCotton(percent);
                JOptionPane.showMessageDialog(null,searchName+" is
                Updated!!!");
            }
            else
            {
                JOptionPane.showMessageDialog(null,searchName+"
                Does not exist!!!");
            }
            break;
        }
    }
}

```

