

```
1 //Shahad almuhizi
2 //436201525
3 public class Contact {
4     private String name;
5     private int num;
6
7     public Contact(String na,int n){
8         name=na;
9         num=n;}
10
11     public String getName(){
12         return name;}
13
14     public int getNum(){
15         return num;}
16
17     public void setmNum(int n){
18         num=n;}
19
20     public String toString(){
21         return "Name: "+name+"--"+"Number: "+num; }}
```

```
1 //Shahad almuhizi
2 //436201525
3 public abstract class MobileComputer extends MobileDevice {
4     public MobileComputer(String b,double s){
5         super(b,s);}
6
7 }
```

```
1 //Shahad almuhizi
2 //436201525
3 public abstract class MobileDevice{
4     protected String brand;
5     protected double storage;
6     private OperatingSystem OS;
7     public MobileDevice(String b,double s){
8         brand=b;
9         storage=s;
10    if (brand.equals("samsung") || brand.equals("lg") ||
brand.equals("kindle fire")){
11        OS=new OperatingSystem("Android");
12        OS.setVersion(8);}
13    if (brand.equals("iphone") || brand.equals("ipod touch")){
14        OS=new OperatingSystem("iOS");
15        OS.setVersion(10);}
16    if (brand.equals("windows pad") || brand.equals("microsoft
tablet pc")){
17        OS=new OperatingSystem("Windows");
18        OS.setVersion(8);}}
19
20    public String getOSname(){
21        return OS.getName();}
22
23    public String getBrand(){
24        return brand;}
25
26    public int getOSversion(){
27        return OS.getVersion();}
28
29    public abstract void display();}
```

```

1 //Shahad almuhizi
2 //436201525
3 import java.util.*;
4 public class MobilePhone extends MobileDevice {
5     private int nOfc;
6     private Contact[] contactList;
7     public MobilePhone(String b,double s){
8         super(b,s);
9         nOfc=0;
10    if (brand.equals("samsung") || brand.equals("lg"))
11    contactList=new Contact[50];
12    if (brand.equals("iphone"))
13    contactList=new Contact[60];
14    if (brand.equals("windows pad"))
15    contactList=new Contact[40];}
16
17    public boolean addContact(Contact c){
18        if (nOfc<contactList.length){
19            contactList[nOfc++]=new Contact (c.getcName(),c.getNum());
20            return true;}
21        return false;}
22
23    public boolean deleteContact(Contact c){
24        int index=-1;
25        if (nOfc>0){
26            index=Search(c);
27            for (int i=index;i<nOfc;i++)
28                contactList[i]=contactList[i+1];
29            contactList[--nOfc]=null;
30            return true;}
31        return false;}
32
33    public int Search(Contact c){
34        for (int i=0;i<nOfc;i++)
35            if (contactList[i].getcName().equals(c.getcName()))
36                if (contactList[i].getNum()==c.getNum())
37                    return i;
38        return -1;}
39
40    public void modify(String n){
41        Scanner console=new Scanner(System.in);
42        boolean found=false;
43        for (int i=0;i<nOfc;i++)
44            if (contactList[i].getcName().equals(n)){
45                System.out.println("Enter the new mobile number: ");
46                int num=console.nextInt();

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47 contactList[i].setmNum(num);
48 found=true;}
49 else
50 found=false;
51 if (found==false)
52 System.out.println("Sorry the contact was not found!");}
53
54 public Contact getContact(int index){
55 Contact cont=new
Contact(contactList[index].getName(),contactList[index].getNum(
));
56 return cont;}
57
58 public void display(){
59 String s="";
60 for (int x=0;x<nOfc;x++)
61 s+=contactList[x].toString();
62 System.out.println("Brand: "+brand+"\tThe Storage:
"+storage+"\tThe operatig System: "+getOSname()+"\tVersion:
"+getOSversion()+"\tcontacts are: "+s);}
63 }

```

```

1 //Shahad almuhizi
2 //436201525
3 public class portableDevice{
4     private int numOfDevices;
5     private MobileDevice[] deviceList;
6
7     public portableDevice(){
8         numOfDevices=0;
9         deviceList=new MobileDevice[100];}
10
11     public boolean addDevice(MobileDevice md){
12         if (numOfDevices<deviceList.length){
13             deviceList[numOfDevices++]=md;
14             return true;}
15         return false;}
16
17     public int CountMobilePhone(String b){
18         int counter=0;
19         for (int i=0;i<numOfDevices;i++)
20             if (deviceList[i] instanceof MobilePhone)
21                 if (deviceList[i].getBrand().equals(b))
22                     counter++;
23         return counter;}
24
25     public MobileDevice getDevice(int index){
26         if (index<numOfDevices)
27             return deviceList[index];
28         return null;}
29
30     public MobileDevice[] getDevicelist(){
31         return deviceList;}
32
33     public void show(){
34         for (int i=0;i<numOfDevices;i++)
35             if (deviceList[i] instanceof TabletComputer)
36                 System.out.println("The brand is: "+deviceList[i].getBrand()+
37                                     "\tThe type is: "+
38                                     (((TabletComputer)deviceList[i]).getType()));}
39 }

```

```
1 //Shahad almuhizi
2 //436201525
3 public class OperatingSystem{
4     private String name;
5     private int version;
6     public OperatingSystem(String n){
7         name=n;}
8
9     public String getName(){
10        return name;}
11
12    public int getVersion(){
13        return version;}
14
15    public void setVersion(int v){
16        version=v;}}
```

```
1 //Shahad almuhizi
2 //436201525
3 import java.util.*;
4 public class TabletComputer extends MobileComputer {
5     private String type;
6
7     public TabletComputer(String b,double s){
8         super(b,s);
9         Scanner console=new Scanner(System.in);
10        System.out.println("Enter the Type:");
11        type=console.nextLine();}
12
13    public String getType(){
14        return type;}
15
16    public void display(){
17
18        System.out.println("Type:["+type+"] Operating System Name:
19        ["+getOSname()+"] Operating System Version: ["+getOSversion()+"]");
20    }}
```



```

1 //Shahad Almuhi
2 //43201525
3 import java.util.*;
4 public class TestClass {
5     static Scanner console=new Scanner (System.in);
6     public static void main (String[] args){
7         boolean add=false;
8         MobileDevice[] obj=new MobileDevice[6];
9
10        System.out.println("Enter The MobilePhone's Storage for
Samsung brand:");
11        double s2=console.nextDouble();
12        MobilePhone m=new MobilePhone("samsung",s2);
13        obj[0]=m;
14        System.out.println("Enter The MobileComputer's Storage for
Samsung brand:");
15        double s3=console.nextDouble();
16        MobilePhone m1=new MobilePhone("samsung",s3);
17        obj[1]=m1;
18        System.out.println("Enter The MobileComputer's Storage for LG
brand:");
19        double s4=console.nextDouble();
20        MobilePhone m2=new MobilePhone("lg",s4);
21        obj[2]=m2;
22        System.out.println("Enter The MobileComputer's Storage for
Iphone brand:");
23        double s5=console.nextDouble();
24        MobilePhone m3=new MobilePhone("iphone",s5);
25        obj[3]=m3;
26
27        for (int f=4;f<6;f++){
28            System.out.println("Enter The MobileComputer's Brand:");
29            String b0=console.next();
30            b0=b0.toLowerCase();
31            System.out.println("Enter The MobileComputer's Storage:");
32            double s=console.nextDouble();
33            MobileComputer ob2=new TabletComputer(b0,s);
34            obj[f]=ob2;}
35
36        System.out.println("*****");
37
38        for (int i=0;i<obj.length;i++)
39            if (obj[i] instanceof MobilePhone){
40
41            System.out.println("Enter the contact's Name you want to
add:");

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42 console.nextLine();
43 String name1=console.nextLine();
44 System.out.println("Enter the contact's Number you want to
add:");
45 int num=console.nextInt();
46 Contact c=new Contact(name1,num);
47 ((MobilePhone)obj[i]).addContact(c);}
48
49 portableDevice p=new portableDevice();
50 for (int s=0;s<obj.length;s++)
51 add=p.addDevice(obj[s]);
52 if (add==true)
53 System.out.println("The addition was successful");
54 else
55 System.out.println("The addition was not successful");
56 System.out.println("*****");
57
58 for (int w=0;w<obj.length;w++)
59 obj[w].display();
60
61 System.out.println("Enter the index Of the Mobile Device:");
62 int index=console.nextInt();
63 System.out.println("The MobileDevice based on "+index+"
is:");
64 MobileDevice objec=p.getDevice(index);
65 objec.display();
66 System.out.println("*****");
67 System.out.println("Enter The Mobile Phone's brand to count
the number of mobile phone:");
68 String br=console.next();
69 br=br.toLowerCase();
70 int count=p.CountMobilePhone(br);
71 System.out.println("The total number of available MobilePhone
the brand is: "+count);
72 System.out.println("*****");
73 System.out.println("The list of Mobile computer's Brand and
Type: ");
74 p.show();
75 }}

```

