

```

public abstract class MobileDevice {
    private String brand;
    private double speed;
    protected int storage;
    protected double price;

    public MobileDevice(String b, int st, double sp) {
        brand = b;
        storage = st;
        speed = sp;
        price = 0.0;
    }

    public MobileDevice(MobileDevice m) {
        brand = m.brand;
        storage = m.storage;
        speed = m.speed;
        price = m.price;
    }

    public abstract double calculatePrice();

    public String getBrand() {
        return brand;
    }
}

public class SmartPhone extends MobileDevice {

    private int nbSim;

    public SmartPhone(String b, int st, double sp, int nbS) {
        super(b, st, sp);
        nbSim = nbS;
    }

    public SmartPhone(SmartPhone s) {
        super(s);
        nbSim = s.nbSim;
    }

    public int getNbSim() {
        return nbSim;
    }

    public double calculatePrice() {
        price = 1300 + nbSim * 150.0;
        return price;
    }
}

```

```

public class Company {
    private String name;
    private MobileDevice arrMob[];
    private int nbMD;

    public Company(String name, int size) {
        this.name = name;
        arrMob = new MobileDevice[size];
        nbMD = 0;
    }

    public String addMobile(MobileDevice m) {

        if (nbMD < arrMob.length) {

            if (m instanceof SmartPhone)
                arrMob[nbMD] = new SmartPhone( (SmartPhone) m);
            else
                arrMob[nbMD] = new Tablet( (Tablet) m);

            nbMD ++;
            return "Sucessfully added";
        }
        else
            return "Can not be added";
    }

    public int countMobileDevices (String b) {

        int count = 0;
        for (int i = 0; i < nbMD; i++) {
            if (arrMob[i].getBrand().equals(b))
                count ++;
        }
        return count;
    }

    public double averagePricesOfSmartPhones () {

        int count = 0;
        double sum = 0.0;
        double avg = 0.0;
        for (int i = 0; i < nbMD; i++) {
            if (arrMob[i] instanceof SmartPhone ) {
                count ++;
                sum += arrMob[i].calculatePrice();
            }
        }

        if (count > 0)
            avg = sum / count;

        return avg;
    }
}

```

```

public double averagePricesOfSmartPhones (int nbS, String b) {

    int count = 0;
    double sum = 0.0;
    double avg = 0.0;
    SmartPhone s;
    for (int i = 0; i < nbMD; i++) {
        if (arrMob[i] instanceof SmartPhone ) {
            s = (SmartPhone) arrMob[i];
            if ( arrMob[i].getBrand().equals(b) &&
                s.getNbSim() > nbS) {
                count ++;
                sum += arrMob[i].calculatePrice();
            }
        }
    }

    if (count > 0)
        avg = sum / count;

    return avg;
}

public int saveSmartPhones(SmartPhone sp[], int nbS)
{

    int count = 0;
    SmartPhone s;
    for (int i=0; i < nbMD; i++) {
        if (arrMob[i] instanceof SmartPhone) {
            s = (SmartPhone) arrMob[i];

            if (s.getNbSim() > nbS) {
                //alt: ap[count] = s;
                sp[count] = (SmartPhone)arrMob[i];
                count ++;
            }
        }
    }
    return count;
}
}

```