**public** **class** TV\_Program {

 **private** String name;

 **private** **double** audienceRate;

 **private** String day;

 **private** **int** time;

 **public** TV\_Program(String name, **double** audienceRate, String day, **int** time) {

 **this**.name = name;

 **this**.audienceRate = audienceRate;

 **this**.day = day;

 **this**.time = time;

 }

 **public** String getName() {

 **return** name;

 }

 **public** **double** getAudienceRate() {

 **return** audienceRate;

 }

 **public** String getDay() {

 **return** day;

 }

 **public** **int** getTime() {

 **return** time;

 }

 }

**public** **class** TV\_Channel {

 **private** String name;

 **private** **boolean** live;

 **private** **int** frequancy;

 **private** TV\_Program[] arProg;

 **private** **int** nbp;

 **public** TV\_Channel(String name, **boolean** live, **int** frequancy)

 {

 **this**.name = name;

 **this**.live = live;

 **this**.frequancy = frequancy;

 arProg = **new** TV\_Program[25];

 nbp = 0;

 }

 **public** TV\_Channel(TV\_Channel p)

 {

 name = p.name;

 live = p.live;

 frequancy = p.frequancy;

 arProg=**new** TV\_Program[p.arProg.length];

 nbp = 0;

 **for**(**int** i=0; i<p.nbp; i++)

 addProgram(p.arProg[i]);

 }

 **public** **boolean** addProgram(TV\_Program p)

 {

 **if**(nbp >= arProg.length)

 **return** **false**;

 arProg[nbp] = p; //aggregation

 nbp++;

 **return** **true**;

 }

 **public** **boolean** contains(String pname)

 {

 **for**(**int** i=0; i<nbp; i++)

 **if**(arProg[i].getName().equals(pname))

 **return** **true**;

 **return** **false**;

 }

 **public** **double** avgAudienceRate(String d)

 {

 **double** sum=0;

 **int** count =0;

 **for**(**int** i=0; i<nbp; i++)

 **if**(arProg[i].getDay().equals(d))

 {

 sum+=arProg[i].getAudienceRate();

 count++;

 }

 **if**(count == 0) **return** 0;

 **return** sum/count;

 }

 **public** **boolean** isLive() {

 **return** live;

 }

}

**public** **class** TV\_Group {

 **private** String name;

 **private** TV\_Channel[] arTV;

 **private** **int** nbc;

 TV\_Group(String name, **int** size)

 {

 **this**.name = name;

 arTV = **new** TV\_Channel[size];

 nbc = 0;

 }

 **public** **boolean** add(TV\_Channel tvc)

 {

 **if**(nbc >= arTV.length)

 **return** **false**;

 arTV[nbc] = **new** TV\_Channel(tvc); //composition

 nbc++;

 **return** **true**;

 }

 **public** TV\_Channel[] searchTV\_Channels(String pName)

 {

 TV\_Channel tvc[]=**new** TV\_Channel[nbc];

 **int** k=0;

 **for**(**int** i=0; i<nbc; i++)

 **if**(arTV[i].contains(pName))

 { tvc[k]=arTV[i];

 k++;

 }

 **return** tvc;

 }

 **public** **int** countLiveTV(String d, **double** a)

 {

 **int** count=0;

 **for**(**int** i=0; i<nbc; i++)

 **if**(arTV[i].isLive()

 && arTV[i].avgAudienceRate(d) > a)

 count++;

 **return** count;

 }

 **public** TV\_Channel bestTV\_Channel(String d)

 {

 TV\_Channel best = arTV[0];

 **for**(**int** i=1; i<nbc; i++)

 **if**(best.avgAudienceRate(d) < arTV[i].avgAudienceRate(d))

 best = arTV[i];

 **return** best;

 }

}

**public** **class** Main {

 /\*\*

 \* **@param** args

 \*/

 **public** **static** **void** main(String[] args) {

 // **TODO** Auto-generated method stub

 TV\_Program prog1 = **new** TV\_Program("Islamic voice",80,"Saturday",21);

 TV\_Program prog2 = **new** TV\_Program("Quran and Sunnah",70,"Sunday",23);

 TV\_Channel tvc = **new** TV\_Channel("Peace TV", **false**,13547);

 System.***out***.println(tvc.addProgram(prog1));

 System.***out***.println( tvc.addProgram(prog2));

 TV\_Group tvg = **new** TV\_Group("Islam Every Where",10);

 System.***out***.println(tvg.add(tvc));

 System.***out***.println(tvg.countLiveTV("Sunday", 50));

 }

}

**OUTPUT :**

true

true

true

0