**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