import java.io.\*;

class student{

String roll,name,grade;

float ass1,ass2,ass3,tot;

BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

private boolean flag=true;

public void accept() throws Exception{

do{

System.out.println("Enter student number : ");

roll = br.readLine();

if(roll.length() == 0){

System.out.println("Student name cannot be empty!!");

flag=false;

}

else

flag=true;

}while(flag==false);

flag=true;

do{

System.out.println("Enter student name : ");

name=br.readLine();

if(name.length()==0){

System.out.println("Name cannot be empty!");

flag=false;

}

else

flag=true;

}while(flag==false);

// Assignment 1 marks

flag=true;

do{

System.out.println("Enter assignment 1 marks : ");

ass1=Float.parseFloat(br.readLine());

if(ass1 < 0 || ass1 > 20){

System.out.println("Marks for assignment 1 should be in the range 0 to 20");

flag=false;

}

else

flag=true;

}while(flag==false);

// Assignment 2 marks

flag=true;

do{

System.out.println("Enter assignment 2 marks : ");

ass2=Float.parseFloat(br.readLine());

if(ass2 < 0 || ass2 > 30){

System.out.println("Marks for assignment 2 should be in the range 0 to 30");

flag=false;

}

else

flag=true;

}while(flag==false);

// Assignment 3 marks

flag=true;

do{

System.out.println("Enter assignment 3 marks : ");

ass3=Float.parseFloat(br.readLine());

if(ass3 < 0 || ass3 > 50){

System.out.println("Marks for assignment 3 should be in the range 0 to 50");

flag = false;

}

else

flag=true;

}while(flag==false);

tot=ass1+ass2+ass3;

}

public void display(){

System.out.println(this.roll+"\t"+this.name+"\t"+this.ass1+"\t"+this.ass2+"\t"+this.ass3+"\t"+this.tot+"\t"+this.grade);

}

public void grade(){

if(tot < 50)

grade="F";

else if(tot >=50 && tot <65)

grade = "P";

else if(tot >=65 && tot <75)

grade = "C";

else if(tot >=75 && tot <85)

grade = "D";

else if(tot >=85)

grade="HD";

}

}

class testMain{

public static void main(String args[]) throws Exception{

float min=100,max=0,avg=0;

String x="",y="";

int n=3,i;

student st[]=new student[n];

for(i=0;i<n;i++){

st[i]=new student();

st[i].accept();

st[i].grade();

}

System.out.println("Roll\tName\tAss1\tAss2\tAss3\tTotal\tGrade");

for(i=0;i<3;i++)

st[i].display();

// find the minimum marks

for(i=0;i<3;i++){

if(st[i].tot < min){

min=st[i].tot;

x=st[i].name;

}

}

// find the maximum marks

for(i=0;i<3;i++){

if(st[i].tot > max){

max=st[i].tot;

y=st[i].name;

}

}

// find the average of all

for(i=0;i<3;i++){

avg = avg + ( (max+min)/3 );

}

System.out.println("Minimum marks are scored by "+x+": "+min);

System.out.println("Maximum marks are scored by "+y+": "+max);

System.out.println("Average marks scored : "+avg);

}