

```

//Professor Ziegler
//HW3
//Jinglin Tan

import java.util.Scanner;
import java.io.*;

//program 3 creates a table of exam statistics
class pgm3{
    public static void main(String[] args) throws IOException{
        int id;
        int right = 0;
        int wrong = 0;
        int total = 0;           //total questions answered
        int omit = 0;           //# of questions omitted
        int grade = 0;
        int totalStudent = 0;    //count of students
        int firstLoop = 1;       //help to assign percent and grade 1st time
        int bestGID = 0;         //id of best grade
        int bestPID = 0;         //id of best percent
        int bestGrade = 0;
        double bestPercent = 0;
        double percent = 0;
        String status = " ";     //right wrong status
        String omitStat = " ";  //omit status

        File myFile = new File("c:/myfile.txt"); //create file object
        //Scanner inputFile = new Scanner(System.in);
        Scanner inputFile = new Scanner(myFile); //read from file

        //PrintWriter outputFile = new PrintWriter(System.out);
        PrintWriter outputFile = new PrintWriter("c:/myoutput.txt");

        outputFile.println("\t\t\t\t\tTable of exam statistics");
        outputFile.println();
        outputFile.println(" ID\tRight\tWrong\t#answered   #omitted"
            + "   grade\t Correct status\tCorrect pct\tOmission status");

        System.out.print("Please enter an ID(enter -1 to stop): ");
        id = inputFile.nextInt();           //initialize id
        while(id != -1){                    //use -1 as sentinel
            System.out.print("Please enter number of right answers: ");
            right = inputFile.nextInt();
            System.out.print("Please enter number of wrong answers: ");
            wrong = inputFile.nextInt();
            total = right + wrong;          //evaluate total question answered
            if(total <= 50){                //only when total <=50, enter this if()
                omit = 50 - total;          //questions omitted
                if(total != 0)              //when total is not equal to 0
                    percent = (double)right / total;    //type cast double
                grade = right * 2;
                if(firstLoop == 1){         //only does once in loop
                    bestPercent = percent;
                    bestGrade = grade;
                    firstLoop++;
                }
                if(percent > bestPercent){  //when % greater than previous %
                    bestPercent = percent; //assign it to bestPercent
                    bestPID = id;           //record the id
                }
                if(grade > bestGrade){      //when grade better than previous grade

```

### HW3.java

```

        bestGrade = grade;        //assign it to bestGrade
        bestGID = id;             //record the id
    }
    if(right > wrong)
        status = "more right than wrong";    //right wrong status
    if(right < wrong)
        status = "more wrong than right";
    if(right == wrong)
        status = "same number of each ";
    if(omit >= 10)
        omitStat = "10 or more omitted";    //omit status
    else
        omitStat = "less than 10 omitted";
    if(total != 0)
        outputFile.printf("%5d%6d%8d%10d%12d%9d%27s%11.3f%25s", id, right,
            wrong, total, omit, grade, status, percent, omitStat);
    else
        //when no question answered, output a special message
        outputFile.printf("%5d%6d%8d%10d%12d%9d%27s    blank sheet%22s", id,
            right, wrong, total, omit, grade, status, omitStat);
}
if(total > 50)        //when total answered over 50, output an Error message
    outputFile.printf("%5d%6d%8d%10d\tError: total questions answered over 50",
        id, right, wrong, total);
outputFile.println();
totalStudent++;    //count number of students
System.out.print("Please enter an ID(enter -1 to stop): ");
id = inputFile.nextInt();    //enter id for next student
}
outputFile.println();
outputFile.println("The total number of students in the class is "
    + totalStudent);
outputFile.printf("The student %d has the best correct answer percenttage"
    + " %.3f", bestPID, bestPercent);
outputFile.println();
outputFile.printf("The student %d has the highest grade %d", bestGID, bestGrade);
outputFile.println();
outputFile.flush();    //flush the output buffer
System.out.println();
System.out.println("The program has completed");    //show program has finished
outputFile.close();    //close output file
inputFile.close();    //close input file
}
}

```