### 11.5作业，第八章例题

#### 程序清单8-1

**package eight;**

**import java.util .Scanner;**

**public class PassTwoDimensionalArray {**

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

**int[][] m=getArray();**

**System.out.println("\nSum of all elements is "+sum(m));**

**}**

**public static int[][] getArray(){**

**Scanner input = new Scanner(System.in);**

**int[][] m = new int[3][4];**

**System.out.println("Enter "+m.length+"rows and"+m[0].length+"columns: ");**

**for(int i=0;i<m.length;i++)**

**for(int j=0;j<m[i].length;j++)**

**m[i][j]=input.nextInt();**

**return m;**

**}**

**public static int sum(int[][] m) {**

**int total=0;**

**for(int row=0;row<m.length;row++) {**

**for(int column=0;column<m[row].length;column++) {**

**total+=m[row][column];**

**}**

**}**

**return total;**

**}**

**}**

#### 程序清单8-2

**package eight;**

**public class GradeExam {**

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

**char[][] answers= {**

**{'A','B','A','C','C','D','E','E','A','D'},**

**{'D','B','A','B','C','A','E','E','A','D'},**

**{'E','D','D','A','C','B','E','E','A','D'},**

**{'C','B','A','E','D','C','E','E','A','D'},**

**{'A','B','D','C','C','D','E','E','A','D'},**

**{'B','B','E','C','C','D','E','E','A','D'},**

**{'B','B','A','C','C','D','E','E','A','D'},**

**{'E','B','E','C','C','D','E','E','A','D'}**

**};**

**char[] keys= {'D','B','D','C','C','D','A','E','A','D'};**

**for(int i=0;i<answers.length;i++) {**

**int correctCount=0;**

**for(int j=0;j<answers[i].length;j++) {**

**if(answers[i][j]==keys[i])**

**correctCount++;**

**}**

**System.out.println("Student"+i+"s correct count is"+correctCount);**

**}**

**}**

**}**

#### 程序清单8-3

**package eight;**

**import java.util.Scanner;**

**public class FindNearestPoints {**

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

**Scanner input = new Scanner(System.in);**

**System.out.print("Enter the number of points: ");**

**int numberOfPoints = input.nextInt();**

**double[][] points = new double[numberOfPoints][2];**

**System.out.print("Enter "+numberOfPoints+" points: ");**

**for(int i=0;i<points.length;i++) {**

**points[i][0]=input.nextDouble();**

**points[i][1]=input.nextDouble();**

**}**

**int p1=0,p2=1;**

**double shortestDistance=distance(points[p1][0],points[p1][1],points[p2][0],points[p2][1]);**

**for(int i=0;i<points.length;i++) {**

**for(int j=i+1;j<points.length;j++) {**

**double distance=distance(points[i][0],points[i][1],points[j][0],points[j][1]);**

**if(shortestDistance>distance) {**

**p1=i;**

**p2=j;**

**shortestDistance=distance;**

**}**

**}**

**}**

**System.out.println("The closest two points are "+"("+points[p1][0]+","+points[p1][1]+") and ("+points[p2][0]+","+points[p2][1]+")");**

**}**

**public static double distance(double x1,double y1,double x2,double y2) {**

**return Math.sqrt((x2-x1)\*(x2-x1)+(y2-y1)\*(y2-y1));**

**}**

**}**

#### 程序清单8-4

**package eight;**

**import java.util.Scanner;**

**public class CheckSudokuSolution {**

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

**int[][] grid=readASolution();**

**System.out.println(isValid(grid) ? "Valid solution":"Invalid solution");**

**}**

**public static int[][] readASolution(){**

**Scanner input = new Scanner(System.in);**

**System.out.println("Enter a Sudoku puzzle solution:");**

**int[][] grid = new int[9][9];**

**for(int i=0;i<9;i++)**

**for(int j=0;j<9;j++)**

**grid[i][j]=input.nextInt();**

**return grid;**

**}**

**public static boolean isValid(int grid) {**

**for(int i=0;i<9;i++)**

**for(int j=0;j<9;j++)**

**if(grid[i][j]<1 || grid[i][j]>9 || !isValid(i,j,grid))**

**return false;**

**return true;**

**}**

**public static boolean isValid(int i,int j,int[][] grid) {**

**for(int column=0;column<9;column++)**

**if(column!=j&&grid[i][column]==grid[i][j])**

**return false;**

**for(int row=0;row<9;row++)**

**if(row!=i&&grid[row][j]==grid[i][j])**

**return false;**

**for(int row=(i/3)\*3;row<(j/3)\*3+3;row++)**

**for(int col=(j/3)\*3;col<(j/3)\*3+3;col++)**

**if(row!=i&&col!=j&&grid[row][col]==grid[i][j])**

**return false;**

**return true;**

**}**

**}**

#### 程序清单8-5

**package eight;**

**import java.util.Scanner;**

**public class Weather {**

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

**final int NUMBER\_OF\_DAYS=10;**

**final int NUMBER\_OF\_HOURS=24;**

**double[][][] data=new double[NUMBER\_OF\_DAYS][NUMBER\_OF\_HOURS][2];**

**Scanner input = new Scanner(System.in);**

**for(int k=0;k<NUMBER\_OF\_DAYS\*NUMBER\_OF\_HOURS;k++) {**

**int day=input.nextInt();**

**int hour=input.nextInt();**

**double temperature=input.nextDouble();**

**double humidity=input.nextDouble();**

**data[day-1][hour-1][0]=temperature;**

**data[day-1][hour-1][1]=humidity;**

**}**

**for(int i=0;i<NUMBER\_OF\_DAYS;i++) {**

**double dailyTemperatureTotal=0,dailyHumidityTotal=0;**

**for(int j=0;j<NUMBER\_OF\_HOURS;j++) {**

**dailyTemperatureTotal+=data[i][j][0];**

**dailyHumidityTotal+=data[i][j][1];**

**}**

**System.out.println("Day"+i+"'s average temperature is"+dailyTemperatureTotal/NUMBER\_OF\_HOURS);**

**System.out.println("Day"+i+"'s average humidity is"+dailyHumidityTotal/NUMBER\_OF\_HOURS);**

**}**

**}**

**}**

#### 程序清单8-6

**package eight;**

**import java.util.Scanner;**

**public class GuessBirthdayUsingArray {**

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

**int day=0;**

**int answer;**

**int[][][] dates= {**

**{{1,3,5,7},{9,11,13,15},{17,19,21,23},{25,27,29,31}},**

**{{2,3,6,7},{10,11,14,15},{18,19,22,23},{26,27,30,31}},**

**{{4,5,6,7},{12,13,14,15},{20,21,22,23},{28,29,30,31}},**

**{{8,9,10,11},{12,13,14,15},{24,25,26,27},{28,29,30,31}},**

**{{16,17,18,19},{20,21,22,23},{24,25,26,27},{28,29,30,31}}**

**};**

**Scanner input = new Scanner(System.in);**

**for(int i =0;i<5;i++) {**

**System.out.println("Is your birthday in Set"+(i+1)+"?");**

**for(int j=0;j<4;j++) {**

**for(int k=0;k<4;k++)**

**System.out.printf("%4d",dates[i][j][k]);**

**System.out.println();**

**}**

**System.out.print("\nEnter 0 for Noand 1for Yes: ");**

**answer=input.nextInt();**

**if(answer==1)**

**day+=dates[i][0][0];**

**}**

**System.out.println("Your birthday is"+day);**

**}**

**}**