**Solution : Lab 10**

import java.util.Scanner;

public class CourseManager1 {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.print("Enter number of students: ");

int numOfStudents = input.nextInt();

while (numOfStudents < 1){

System.out.print("Number of students is invalid. Enter number of students: ");

numOfStudents = input.nextInt();

}

double[] scores = new double[numOfStudents];

System.out.print("Please enter students' scores: ");

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

double score = input.nextDouble();

if (score >= 0 && score <= 100){

scores[i] = score;

}

else {

System.out.println("The score " + score + " you entered is wrong. Program will store score 0.");

}

}

System.out.print("The scores are: ");

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

System.out.print(scores[i] + " ");

}

System.out.println();

}

}

import java.util.Scanner;

public class CourseManager2 {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.print("Enter number of students: ");

int numOfStudents = input.nextInt();

while (numOfStudents < 1){

System.out.print("Number of students is invalid. Enter number of students: ");

numOfStudents = input.nextInt();

}

double[] scores = new double[numOfStudents];

System.out.print("Please enter students' scores: ");

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

double score = input.nextDouble();

if (score >= 0 && score <= 100){

scores[i] = score;

}

else {

System.out.println("The score " + score + " you entered is wrong. Program will store score 0.");

}

}

char[] grades = scoreToGrade(scores);

System.out.print("The scores/grades are: ");

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

System.out.print(scores[i] + "/" + grades[i] + " ");

}

System.out.println();

}

// Precondition: all scores in the array are between 0 and 100

public static char[] scoreToGrade(double[] scores){

char[] grades = new char[scores.length];

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

if (scores[i] >= 90)

grades[i] = 'A';

else if (scores[i] >= 80)

grades[i] = 'B';

else if (scores[i] >= 70)

grades[i] = 'C';

else if (scores[i] >= 60)

grades[i] = 'D';

else

grades[i] = 'F';

}

return grades;

}

}

class CourseManager6{

private Student [] students;

private int nStudents ;

public static int MAX\_SIZE=100;

public CourseManager6() {

students = new Student [100];

nStudents=0;

}

public Student getarray(int i){

return students[i];

}

/\*\*\*\*\*\*\*Adding the student\*\*\*\*\*\*\*\*\*\*/

public void addStudent(Student newStudent) {

if (nStudents < 100)

{

if (findStudentByName(newStudent.getName())==-1)

{

students[nStudents]=newStudent;

nStudents++;

}

else

System.out.println("ERROR: STUDENT ALREADY ADDED");

}

else

System.out.println("ERROR: COURSE IS FULL");

/\* 2- add the new student to the list

Increment the current number of students\*/

}

/\*\*\*\*\*\*\*\*Display the student list\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

public void displayStudent(int i) {

System.out.println(students[i].getId()+", "+students[i].getName()+", "+students[i].getScore());

}

public int getNStudents() {

return nStudents;

}

public int findStudentByName (String name){

for (int i = 0 ; i < nStudents; i++)

{

if (students[i].getName().equalsIgnoreCase(name))

return i;

}

return -1;

}

/\*\*\*\*\*\*Maximum score\*\*\*\*\*\*\*\*\*\*\*\*/

public int findMaxScoreIndex ()

{

//double topscore=0;

int max=0;

/// s[0] =90 ; s[1] = 95 ; s[2]= 93 s[3] = 99 s[4]=95

for (int i = 0 ; i < nStudents ; i++)

{

if (students[i].getScore()>students[max].getScore()){

max=i;

}

}

return max;

}

/\*\*\*\*\*\*\*\*\*Averag of all the scores\*\*\*\*\*\*\*\*\*\*\*\*/

public double findAverageScore(){

double sum = 0;

for (int i = 0 ; i<nStudents;i++){

sum+=students[i].getScore();

}

if (nStudents!=0)

return (sum/nStudents);

else return 0;

}

}

import java.util.Scanner;

public class TestCourseManager6 {

/\*\*

\* @param args

\*/

public static void main(String[] args) {

// TODO Auto-generated method stub

Scanner read = new Scanner(System.in);

CourseManager6 cm6 = new CourseManager6();

int id ;

String name;

double score;

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

{

System.out.println("Please enter the ID, name, and score of student "+i+": ");

id = read.nextInt();

name=read.next();

score=read.nextDouble();

Student s = new Student (id,name,score);

cm6.addStudent(s);

}

System.out.println("Students are: ");

for ( int i = 0 ; i < cm6.getNStudents() ; i++)

{

cm6.displayStudent(i);

}

int maxindex = cm6.findMaxScoreIndex();

System.out.println("the name of the max student is :"+cm6.getarray(maxindex).getName());

System.out.println("The Student with the maximum score is: ");

cm6.displayStudent(cm6.findMaxScoreIndex());

System.out.println("Average is: "+cm6.findAverageScore());

}

public static int search(int t)

{

return 0;

}

}