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;

}

}

import java.util.Scanner;

class CourseManager3 {

private double[] scores;

private char[] grades;

public void readScores() {

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();

}

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.");

}

}

}

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

public void scoreToGrade() {

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';

}

}

public void printGrades(){

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();

}

}

public class TestCourseManager3 {

public static void main(String[] args) {

CourseManager3 cm = new CourseManager3();

cm.readScores();

cm.scoreToGrade();

cm.printGrades();

}

}

import java.util.Scanner;

class CourseManager4 {

private double[] scores;

private char[] grades;

public void readScores() {

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();

}

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.");

}

}

}

// Precondition: scores is not null and all scores in the array are between 0 and 100

public void scoreToGrade() {

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';

}

}

// Precondition: scores and grades are not null

public void printGrades(){

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();

}

private double sum(){

double resultSum = 0;

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

resultSum += scores[i];

}

return resultSum;

}

// Precondition: scores is not null

public double average(){

return sum() / scores.length;

}

}

public class TestCourseManager4 {

public static void main(String[] args) {

CourseManager4 cm = new CourseManager4();

cm.readScores();

cm.scoreToGrade();

cm.printGrades();

System.out.println("Average = " + cm.average());

}

}

import java.util.Scanner;

class CourseManager5 {

private int[] ids;

private String[] names;

private double[] scores;

private int nStudents;

public static final int MAX\_SIZE = 100;

CourseManager5() {

ids = new int[100];

names = new String[100];

scores = new double[100];

nStudents = 0;

}

public void addStudent(int id, String name, double score) {

if (nStudents < MAX\_SIZE) {

ids[nStudents] = id;

names[nStudents] = name;

scores[nStudents] = score;

nStudents++;

} else

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

}

public void displayStudent(int i) {

System.out.print(ids[i] + ", " + names[i] + ", "

+ scores[i]);

}

public int getNStudents() {

return nStudents;

}

}

public class TestCourseManager5 {

public static void main(String[] args) {

Scanner kb = new Scanner(System.in);

CourseManager5 c1 = new CourseManager5();

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 = kb.nextInt();

name = kb.next();

score = kb.nextDouble();

c1.addStudent(id, name, score);

}

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

for (int i = 0; i < c1.getNStudents(); i++) {

c1.displayStudent(i);

System.out.println();

}

}

}

import java.util.Scanner;

class CourseManager6 {

private int[] ids;

private String[] names;

private double[] scores;

private int nStudents;

public static final int MAX\_SIZE = 100;

CourseManager6() {

ids = new int[100];

names = new String[100];

scores = new double[100];

nStudents = 0;

}

public void addStudent(int id, String name, double score) {

if (nStudents < MAX\_SIZE) {

if (findStudentName(name) == -1) {

ids[nStudents] = id;

names[nStudents] = name;

scores[nStudents] = score;

nStudents++;

} else

System.out.println("ERROR: STUDENT "

+ "ALRAEDY THERE");

} else

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

}

public int findStudentName(String name) {

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

if (names[i].equalsIgnoreCase(name))

return i;

return -1;

}

public void displayStudent(int i) {

System.out.print(ids[i] + ", " + names[i] + ", "

+ scores[i]);

}

public int getNStudents() {

return nStudents;

}

}

public class TestCourseManager6 {

public static void main(String[] args) {

Scanner kb = new Scanner(System.in);

CourseManager6 c1 = new CourseManager6();

int id;

String name;

double score;

System.out.println("Please enter the ID, name, and "

+ "score of a student: ");

id = kb.nextInt();

name = kb.next();

score = kb.nextDouble();

c1.addStudent(id, name, score);

System.out.println("Please enter the ID, name, and "

+ "score of a student: ");

id = kb.nextInt();

name = kb.next();

score = kb.nextDouble();

c1.addStudent(id, name, score);

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

for (int i = 0; i < c1.getNStudents(); i++) {

c1.displayStudent(i);

}

}

}

import java.util.Scanner;

class CourseManager7 {

private int[] ids;

private String[] names;

private double[] scores;

private int nStudents;

public static final int MAX\_SIZE = 100;

CourseManager7() {

ids = new int[100];

names = new String[100];

scores = new double[100];

nStudents = 0;

}

public void addStudent(int id, String name, double score) {

if (nStudents < MAX\_SIZE) {

if (findStudentName(name) == -1) {

ids[nStudents] = id;

names[nStudents] = name;

scores[nStudents] = score;

nStudents++;

} else

System.out.println("ERROR: STUDENT ALRAEDY THERE");

} else

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

}

public int findStudentName(String name) {

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

if (names[i].equalsIgnoreCase(name))

return i;

return -1;

}

public double findAverageScore() {

if (nStudents > 0) {

double sum = 0.0;

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

sum += scores[i];

return (sum / nStudents);

} else

return 0;

}

public int findMaxScoreIndex() {

int max = 0;

if (nStudents <= 0)

max = -1;

for (int i = 1; i < nStudents; i++) {

if (scores[i] > scores[max])

max = i;

}

return max;

}

public void displayStudent(int i) {

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

}

public int getNStudents() {

return nStudents;

}

}

public class TestCourseManager7 {

public static void main(String[] args) {

Scanner kb = new Scanner(System.in);

CourseManager7 c1 = new CourseManager7();

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 = kb.nextInt();

name = kb.next();

score = kb.nextDouble();

c1.addStudent(id, name, score);

}

System.out.println("The class average = " + c1.findAverageScore());

System.out.println("The student with the highest score:");

c1.displayStudent(c1.findMaxScoreIndex());

}

}