import java.util.Scanner;

import java.util.InputMismatchException;

public class GradeCalculator {

public static int calculateTotalMarks(int[] marks) {

int total = 0;

for (int mark : marks) {

total += mark;

}

return total;

}

public static double calculateAveragePercentage(int totalMarks, int numSubjects) {

return (double) totalMarks / numSubjects;

}

public static String calculateGrade(double averagePercentage) {

if (averagePercentage >= 90) {

return "A";

} else if (averagePercentage >= 80) {

return "B";

} else if (averagePercentage >= 70) {

return "C";

} else if (averagePercentage >= 60) {

return "D";

}else if(averagePercentage >=50){

return “E”;

} else {

return "F";

}

}

public static void displayResults(int totalMarks, double averagePercentage, String grade) {

System.out.println("\nResults:");

System.out.println("Total Marks: " + totalMarks);

System.out.println("Average Percentage: " + String.format("%.2f", averagePercentage) + "%");

System.out.println("Grade: " + grade);

}

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

int numSubjects = 0;

while (true) {

try {

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

numSubjects = scanner.nextInt();

if (numSubjects <= 0) {

System.out.println("Number of subjects must be greater than zero. Please try again.");

} else {

break;

}

} catch (InputMismatchException e) {

System.out.println("Invalid input. Please enter an integer.");

scanner.next(); // clear the invalid input

}

}

int[] marks = new int[numSubjects];

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

while (true) {

try {

System.out.print("Enter marks obtained in subject " + (i + 1) + " (out of 100): ");

int mark = scanner.nextInt();

if (mark < 0 || mark > 100) {

System.out.println("Marks should be between 0 and 100. Please try again.");

} else {

marks[i] = mark;

break;

}

} catch (InputMismatchException e) {

System.out.println("Invalid input. Please enter an integer.");

scanner.next(); // clear the invalid input

}

}

}

int totalMarks = calculateTotalMarks(marks);

double averagePercentage = calculateAveragePercentage(totalMarks, numSubjects);

String grade = calculateGrade(averagePercentage);

displayResults(totalMarks, averagePercentage, grade);

scanner.close();

}

}