import java.util.Scanner;

public class Main {

public static void main(String[] args) {

// print\_miles\_table();

// calculate\_tuition();

// two\_heighest\_scores();

// System.out.println(sum\_digits(22));

// System.out.println(reverse(432));

// System.out.println(is\_palindrome(333));

// display\_sorted\_numbers(3, 1, 2);

}

// 5.4

public static void print\_miles\_table() {

System.out.println("miles\tkilometers");

for(int i = 1 ; i < 11 ; i++) {

System.out.println(i + "\t\t" + i\*1609);

}

}

// 5.7

public static void calculate\_tuition() {

double moneyPerYear = 10000;

for(int i = 0 ; i < 10 ; i++){

moneyPerYear = moneyPerYear + 0.05 \* moneyPerYear;

System.out.printf("year %d = %.2f $\n", i+1, moneyPerYear);

}

System.out.println("-----------------------------");

double neededMoney = 0;

for(int i = 0 ; i < 4 ; i++) {

moneyPerYear = moneyPerYear + 0.05 \* moneyPerYear;

neededMoney = neededMoney + moneyPerYear;

}

System.out.printf("needed money after 10 years in four year is %.2f $", neededMoney);

}

// 5.9

public static void two\_heighest\_scores() {

// create a scanner

Scanner scanner = new Scanner(System.in);

// take number of students

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

int numberOfStudents = scanner.nextInt();

// create two arrays one for names and another one for scores

String[] names = new String[numberOfStudents];

int[] scores = new int[numberOfStudents];

// take input

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

System.out.print("enter name of the student #" + (i + 1) + " : ");

names[i] = scanner.next();

System.out.print("enter student " + (i + 1) + " score: ");

scores[i] = scanner.nextInt();

}

int greatestScore = scores[0];

int indexOfGreatestStudent = 0;

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

if(scores[i] > greatestScore){

indexOfGreatestStudent = i;

}

}

int indexOfSecond = 0;

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

if (i == indexOfGreatestStudent){

continue;

}

if(scores[i] > greatestScore) {

indexOfSecond = i;

}

}

System.out.println("1. " + names[indexOfGreatestStudent] + " -->> " + scores[indexOfGreatestStudent]);

System.out.println("2. " + names[indexOfSecond] + " -->> " + scores[indexOfSecond]);

}

// 6.2

public static int sum\_digits(long num) {

int res = 0;

while(num > 0) {

res = res + (int) (num % 10);

num = num / 10;

}

return res;

}

// 6.3

public static int reverse(int number) {

int reversed = 0;

while(number != 0) {

int digit = number % 10;

reversed = reversed \* 10 + digit;

number /= 10;

}

return reversed;

}

// 6.3

public static boolean is\_palindrome(int num) {

return (num == reverse(num));

}

// 6.5

public static void display\_sorted\_numbers(double x, double y, double z) {

if(x < y && x < z) {

if(y < z) {

System.out.println(x + " -> " + y + " -> "+ z);

}

else if(z < y) {

System.out.println(x + " -> " + z + " -> "+ y);

}

}

if(y < x && y < z) {

if(x < z) {

System.out.println(y + " -> " + x + " -> "+ z);

}

else if(z < x) {

System.out.println(y + " -> " + z + " -> "+ x);

}

}

if (z < x && z < y) {

if(x < y) {

System.out.println(z + " -> " + x + " -> "+ y);

}

else if (y < x) {

System.out.println(z + " -> " + y + " -> "+ x);

}

}

}

}