package BT\_1;

import java.util.ArrayList;

import java.util.Arrays;

import java.util.List;

// import java.util.HashSet;

import java.util.Scanner;

// import java.util.Set;

public class CauHoi {

public static void cau1() {

float a, b, x ;

System.out.println("Pt bac 1");

try (Scanner sc = new Scanner(System.in)) {

System.out.println("Nhap a");

a = sc.nextFloat();

System.out.println("Nhap b");

b = sc.nextFloat();

}

if(a==0 && b>=0) {

System.out.println("Pt vo nghiem");

}else if(a==0 && b==0){

System.out.println("Pt vo so nghiem");

}else if(a>0 && b>0){

x = -b/a;

System.out.println("Gia tri la: "+x);

}

}

public static void cau2() {

double a, b, c, x1, x2, D;

System.out.println("Pt bac 2");

try (Scanner sc = new Scanner(System.in)) {

System.out.println("Nhap a");

a = sc.nextDouble();

System.out.println("Nhap b");

b = sc.nextDouble();

System.out.println("Nhap c");

c = sc.nextDouble();

}

D = Math.pow(b, 2) - 4 \* a \* c;

if (a == 0) {

System.out.println("Nhap loi");

} else {

if (D < 0) {

System.out.println("Pt vo nghiem");

} else if (D == 0) {

x1 = -b / (2 \* a);

System.out.println("Pt co nghiem kep la" + x1);

} else {

x1 = (-b - Math.sqrt(D)) / (2 \* a);

x2 = (-b + Math.sqrt(D)) / (2 \* a);

System.out.println("Pt co 2 ngiem la:");

System.out.println("gia tri x1 la: " + x1);

System.out.println("gia tri x2 la: "+ x2);

}

}

}

public static void cau3() {

double soDien;

System.out.println("Tinh tien dien");

try (Scanner sc = new Scanner(System.in)) {

System.out.println("SoDien sua dung");

soDien = sc.nextDouble();

}

if(soDien>0 && soDien<50) {

double x1 = soDien\*1000;

System.out.println("Gia tien la: "+x1);

}else if(soDien>50) {

double x2 = soDien\*1000 + (soDien-50) \* 1200;

System.out.println("Gia tien la: "+x2);

}

}

static boolean cau5(double x) {

double y = Math.sqrt(x);

return ((y - Math.floor(y)) == 0);

}

public static void cau6() {

System.out.println("Diem trung binh ");

double a, b, c, Hk;

try (Scanner sc = new Scanner(System.in)) {

System.out.println("Nhap diem Toan: ");

a = sc.nextDouble();

System.out.println("Nhap diem Ly: ");

b = sc.nextDouble();

System.out.println("Nhap diem Hoa: ");

c = sc.nextDouble();

}

Hk = (a+b+c)/3;

if(Hk<5) {

System.out.println("Kem");

}else if(Hk>5 && Hk<7) {

System.out.println("Trung Binh");

}else if(Hk>7 && Hk<8) {

System.out.println("Kha");

}else if(Hk>8) {

System.out.println("Gioi");

}else if(Hk>10 || Hk<0) {

System.out.println("Diem bi nhap sai");

}

}

public static void cau7() {

int a, b, c;

try (Scanner sc = new Scanner(System.in)) {

System.out.println("Nhap gia tri hang tram");

a= sc.nextInt();

System.out.println("Nhap gia tri hang chuc");

b = sc.nextInt();

System.out.println("Nha gia tri hang don vi");

c = sc.nextInt();

}

switch (a) {

case 1:

System.out.println("Mot tram");

break;

case 2:

System.out.println("Hai tram");

break;

case 3:

System.out.println("Ba tram");

break;

case 4:

System.out.println("Bon tram");

break;

case 5:

System.out.println("Nam tram");

break;

case 6:

System.out.println("Sau tram");

break;

case 7:

System.out.println("Bay tram");

break;

case 8:

System.out.println("Tam tram");

break;

case 9:

System.out.println("Chin tram");

break;

case 0:

System.out.println("khong tram");

break;

default:

System.out.println("Nhap loi");

break;

}

switch (b) {

case 1:

System.out.println("Muoi");

break;

case 2:

System.out.println("Hai muoi");

break;

case 3:

System.out.println("Ba muoi");

break;

case 4:

System.out.println("Bon muoi");

break;

case 5:

System.out.println("Nam muoi");

break;

case 6:

System.out.println("Sau muoi");

break;

case 7:

System.out.println("Bay muoi");

break;

case 8:

System.out.println("Tam muoi");

break;

case 9:

System.out.println("Chin muoi");

break;

case 0:

System.out.println("le");

break;

default:

System.out.println("Nhap loi");

break;

}

switch (c) {

case 1:

System.out.println("Mot ");

break;

case 2:

System.out.println("Hai ");

break;

case 3:

System.out.println("Ba ");

break;

case 4:

System.out.println("Bon ");

break;

case 5:

System.out.println("Nam ");

break;

case 6:

System.out.println("Sau ");

break;

case 7:

System.out.println("Bay ");

break;

case 8:

System.out.println("Tam ");

break;

case 9:

System.out.println("Chin ");

break;

case 0:

System.out.println("0");

break;

default:

System.out.println("Nhap loi");

break;

}

}

public static long cau8(int n) {

long giai\_thua = 1;

if (n == 0 || n == 1) {

return giai\_thua;

} else {

for (int i = 2; i <= n; i++) {

giai\_thua \*= i;

}

return giai\_thua;

}

}

public static void cau9() {

int n = 1;

try (Scanner sc = new Scanner(System.in)) {

System.out.println("Cac so tu 1 den 9\n");

System.out.println("Nhap so can xoa");

n = sc.nextInt();

}

String[] arr = {"1", "2" , "3", "4", "5", "6", "7", "8", "9"};

List<String> testList = new ArrayList<>(Arrays.asList(arr));

System.out.println("Dong Array chua mang:\n"+ testList);

switch (n) {

case 1: {

testList.remove(0);

break;

}

case 2: {

testList.remove(1);

break;

}

case 3: {

testList.remove(2);

break;

}

case 4: {

testList.remove(3);

break;

}

case 5: {

testList.remove(4);

break;

}

case 6: {

testList.remove(5);

break;

}

case 7: {

testList.remove(6);

break;

}

case 8: {

testList.remove(7);

break;

}

case 9: {

testList.remove(8);

break;

}

case 10: {

testList.remove(9);

break;

}

default:

System.out.println("Nhap du lieu sai\n");

}

System.out.println("Xoa phan tu thu n da nhap trong ArrayList:\n"+ testList);

arr = testList.toArray(new String[0]);

System.out.println("Mang ket qua :\n"+Arrays.toString(arr));

}

public static void cau10() {

int m, n;

int soPhanTu0 = 0;

int soPhanTuKhac0 = 0;

try (Scanner sc = new Scanner(System.in)) {

do {

System.out.println("Nhap so dong: ");

m = sc.nextInt();

System.out.println("Nhap so cot: ");

n = sc.nextInt();

} while (m < 1 || n < 1);

int A[][] = new int[m][n];

System.out.println("Nhap cac phan tu ma tran");

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

for (int j = 0; j < n; j++) {

System.out.print("A[" + i + "," + j + "] = ");

A[i][j] = sc.nextInt();

}

}

System.out.println("Ma tran vua nhap la: ");

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

for (int j = 0; j < n; j++) {

System.out.print(A[i][j] + "\t");

}

System.out.println("\n");

}

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

for (int j = 0; j < n; j++) {

if (A[i][j] == 0) {

soPhanTu0++;

} else {

soPhanTuKhac0++;

}

}

}

}

if (soPhanTu0 > soPhanTuKhac0) {

System.out.println("La ma tran doi xung");

} else {

System.out.println("Ko phai la ma tran doi xung");

}

}

public static void main(String[] args) {

int luaChon = 0;

try (Scanner sc = new Scanner(System.in)) {

do {

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

System.out.println("MENU");

System.out.println("1.Pt bac nhat");

System.out.println("2.Pt bac 2");

System.out.println("3.kiem tra tien dien");

System.out.println("4.Quay lai MENU");

System.out.println("5.kiem tra so chinh phuong");

System.out.println("6.xet loai hoc sinh");

System.out.println("7.nhap 1 so nguyen 3 nguyen to");

System.out.println("8.tinh giai thua so nguyen");

System.out.println("9.xoa phan tu x neu co");

System.out.println("10.bai toan nhap vao ma tran doi xung cho do thi vo huong co trong so");

System.out.println("0.Thoat khoi chuong trinh");

luaChon = sc.nextInt();

sc.nextLine();

if(luaChon==1) {

cau1();

break;

}else if(luaChon==2) {

cau2();

break;

}else if(luaChon==3) {

cau3();

break;

}else if(luaChon==4) {

System.out.println("Tro ve MENU");

}else if(luaChon==5) {

System.out.println("Nhap so nguyen n");

int n = sc.nextInt();

if(cau5(n)) {

System.out.println(n+" la so chinh phuong");

break;

}else {

System.out.println(n+" ko la so chinh phuong");

break;

}

}else if(luaChon==6) {

cau6();

break;

}else if(luaChon==7) {

cau7();

break;

}else if(luaChon==8) {

System.out.println("Nhap n so nguyen");

int n = sc.nextInt();

while (true) {

System.out.println("Giai thua la: "+CauHoi.cau8(n));

n++;

break;

}

}else if(luaChon==9) {

cau9();

break;

}else if(luaChon==10) {

cau10();

break;

}

}while(luaChon != 0);

}

}

}