

***Дисциплина: Учебная практика***

**Отчетпо выполнению заданияна тему: «Lesson 4».**

Выполнил: Маханов АА

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https://github.com/SeyVetch/ConsoleApp3

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using Microsoft.VisualBasic;

/// <summary>

/// 1ИСП11-17 Маханов А.А.

/// </summary>

namespace ConsoleApp2

{

class Program

{

static public void prog1()

{

//listing

}

static public void prog2()

{

//программа 2

Console.WriteLine("Напишите число");

int n = Int32.Parse(Console.ReadLine());

if (n >= 1)

{

int[] x = new int[n];

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

{

x[i] = i \* 5 + 2;

Console.Write(x[i] + " ");

}

Console.WriteLine();

}

else

{

Console.WriteLine("Ошибка при вводе числа");

}

}

static public void prog3()

{

//программа 3

Console.WriteLine("Напишите число");

int[] x = new int[11];

for (int i = 0; i < 11; i++)

{

x[i] = Convert.ToInt32(Math.Pow(2, i));

}

for (int i = 0; i < 11; i++)

{

Console.Write(x[i] + " ");

}

Console.WriteLine();

for (int i = 0; i < 11; i++)

{

Console.Write(x[10 - i] + " ");

}

Console.WriteLine();

}

static public void prog4()

{

//программа 4

char[] s = new char[10];

for (int i = 0; i < 10; i += 1)

{

s[i] = (char) (97 + i \* 2);

}

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

{

Console.Write(s[i] + " ");

}

Console.WriteLine();

}

static public void prog5()

{

//программа 5

char[] s = new char[10];

int x = 0;

char c = 'A';

bool isVowel = true;

for (int i = 0; i < 10; i += 1)

{

while (isVowel)

{

c = (char)('A' + x);

isVowel = "AEIOU".IndexOf(c) >= 0;

x++;

}

s[i] = c;

isVowel = true;

}

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

{

Console.Write(s[i] + " ");

}

Console.WriteLine();

}

static public void prog6()

{

//программа 6

Console.WriteLine("Напишите число");

int n = Int32.Parse(Console.ReadLine());

if (n >= 1)

{

int a = int.MaxValue, b = -1;

int[] x = new int[n];

Random rnd = new Random();

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

{

x[i] = rnd.Next(1, 100);

Console.Write(x[i] + " ");

if (x[i] < a)

{

b = i + 1;

a = x[i];

}

}

Console.WriteLine();

Console.WriteLine("Число мин: " + a + ", номер числа: " + b);

}

else

{

Console.WriteLine("Ошибка при вводе числа");

}

}

static public void prog7()

{

//программа 7

Console.WriteLine("Напишите число");

int n = Int32.Parse(Console.ReadLine());

if (n >= 1)

{

int[] x = new int[n];

Random rnd = new Random();

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

{

x[i] = rnd.Next(1, 100);

Console.Write(x[i] + " ");

}

Console.WriteLine();

bool flag = true;

while (flag)

{

flag = false;

for (int i = 0; i < n - 1; i++)

{

if (x[i] < x[i + 1])

{

flag = true;

int temp = x[i];

x[i] = x[i + 1];

x[i + 1] = temp;

}

}

}

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

{

Console.Write(x[i] + " ");

}

Console.WriteLine();

}

else

{

Console.WriteLine("Ошибка при вводе числа");

}

}

static public void prog8()

{

//программа 8

char[] s = new char[10];

for (int i = 0; i < 10; i += 1)

{

s[i] = (char)('A' + i);

}

char[] c = new char[10];

s.CopyTo(c, 0);

for (int i = 0; i < 10; i += 1)

{

s[i] = c[9 - i];

}

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

{

Console.Write(s[i] + " ");

}

Console.WriteLine();

}

static public void prog9()

{

//программа 9

Random rnd = new Random();

int[,] x = new int[10, 10];

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

{

for (int j = 0; j < 10; j++)

{

x[i, j] = rnd.Next(1, 1000);

Console.Write(x[i, j] + " ");

}

Console.WriteLine();

}

Console.WriteLine();

int[,] y = new int[10, 10];

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

{

for (int j = 0; j < 10; j++)

{

y[i, j] = x[i, j];

}

}

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

{

for (int j = 0; j < 10; j++)

{

x[i, j] = y[j, i];

Console.Write(x[i, j] + " ");

}

Console.WriteLine();

}

}

static public void prog10()

{

//программа 10

Random rnd = new Random();

int[,] x = new int[10, 10];

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

{

for (int j = 0; j < 10; j++)

{

x[i, j] = rnd.Next(1, 100);

Console.Write(x[i, j] + " ");

}

Console.WriteLine();

}

Console.WriteLine();

int[,] y = new int[9, 9];

int a = rnd.Next(0, 9);

int b = rnd.Next(0, 9);

int c = 0;

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

{

if (i != a)

{

int d = 0;

for (int j = 0; j < 10; j++)

{

if (j != b)

{

y[c, d] = x[i, j];

d++;

}

}

c++;

}

}

for (int i = 0; i < 9; i++)

{

for (int j = 0; j < 9; j++)

{

Console.Write(y[i, j] + " ");

}

Console.WriteLine();

}

Console.WriteLine();

}

static int[] dir(int cx, int cy, int dx, int dy, int[,] ma)

{

int[] directions = new int[2];

directions[0] = dx;

directions[1] = dy;

bool flagborderxpos = cx == 8;

if (!flagborderxpos)

{

flagborderxpos = ma[cx + 1, cy] == 1;

}

bool flagborderypos = cy == 8;

if (!flagborderypos)

{

flagborderypos = ma[cx, cy + 1] == 1;

}

bool flagborderxneg = cx == 0;

if (!flagborderxneg)

{

flagborderxneg = ma[cx - 1, cy] == 1;

}

bool flagborderyneg = cy == 0;

if (!flagborderyneg)

{

flagborderyneg = ma[cx, cy - 1] == 1;

}

bool up = dx == 0 && dy == 1;

bool down = dx == 0 && dy == -1;

bool right = dx == 1 && dy == 0;

bool left = dx == -1 && dy == 0;

if (flagborderxpos && right)

{

directions[0] = 0;

directions[1] = 1;

}

if (flagborderyneg && down)

{

directions[0] = 1;

directions[1] = 0;

}

if (flagborderxneg && left)

{

directions[0] = 0;

directions[1] = -1;

}

if (flagborderypos && up)

{

directions[0] = -1;

directions[1] = 0;

}

if (flagborderxneg && flagborderxpos && flagborderyneg && flagborderypos)

{

directions[0] = 0;

directions[1] = 0;

}

return directions;

}

static public void prog11()

{

//программа 11

//недоработал :(

int[,] a = new int[9, 9];

int[,] b = new int[9, 9];

for (int i = 0; i < 9; i++)

{

for (int j = 0; j < 9; j++)

{

a[i, j] = 0;

}

}

int dirx = 1;

int diry = 0;

int x = 0;

int y = 0;

int n = 0;

while (true)

{

a[x, y] = 1;

b[y, x] = n;

x += dirx;

y += diry;

if (dirx == 0 && diry == 0)

{

break;

}

int[] d = dir(x, y, dirx, diry, a);

dirx = d[0];

diry = d[1];

n++;

}

for (int i = 0; i < 9; i++)

{

for (int j = 0; j < 9; j++)

{

Console.Write(b[i, j] + "\t");

}

Console.WriteLine();

}

}

static void Main(string[] args)

{

string num = Interaction.InputBox("Какую программу открыть?", "Программа");

//выбор программы 1-11

switch (num)

{

case "1":

prog1();

break;

case "2":

prog2();

break;

case "3":

prog3();

break;

case "4":

prog4();

break;

case "5":

prog5();

break;

case "6":

prog6();

break;

case "7":

prog7();

break;

case "8":

prog8();

break;

case "9":

prog9();

break;

case "10":

prog10();

break;

case "11":

prog11();

break;

default:

MessageBox.Show("Неверный номер");

break;

}

Console.ReadLine();

}

}

}