**РУСЕНСКИ УНИВЕРСИТЕТ „АНГЕЛ КЪНЧЕВ“**

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ПО

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**Съдържание**

[1. Задание 3](#_Toc438036352)

[2. Описание на използваните структури данни и алгоритми 3](#_Toc438036353)

[3. Код на програмата (листинг) 4](#_Toc438036354)

[3.1 Program.cs 4](#_Toc438036358)

[3.2 frmMain.cs 4](#_Toc438036359)

[3.3 frmMain.Designer.cs 9](#_Toc438036360)

[3.4 Directory.cs 18](#_Toc438036361)

[4. Демо 20](#_Toc438036362)

# Задание

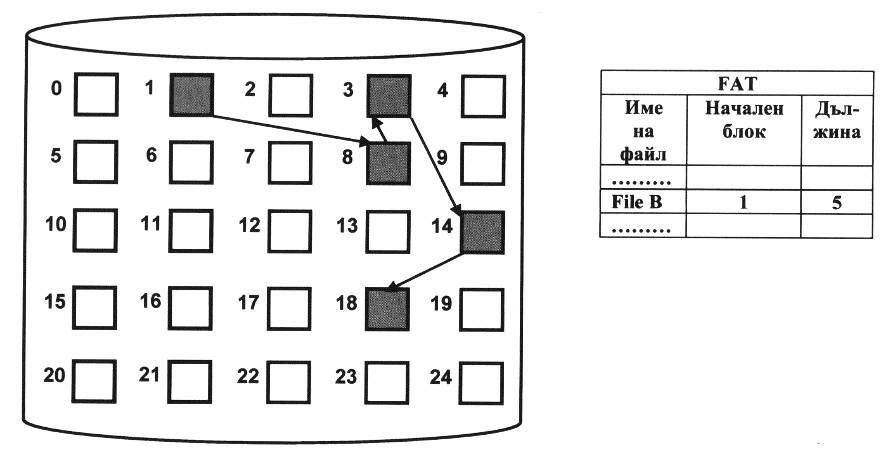
Да се разработи програмна система, симулираща работата на модула за **управление на външна памет – организация File Allocation Table** при следните изходни данни:

* ***Основни необходими структури:***
  + Directory [1..F] главната директория на носителя със структура:
    - Name – име на файла
    - Size – размер на файла
    - FirstBlock – номер на първи блок на разполагане на файла
  + FAT [1..B] блокова карта на носителя със структура:
    - NextBlock – номер на следващия блок на файла
* ***Основни обработки:***
  + SaveFile(Name, Size) създаване на файл Name с размер Size;
  + DeleteFile(Name) изтриване на файл Name;
  + Show показване на състоянието на основните структури

Разработеният проект да има подходящ потребителски интерфейс за обръщение към основните обработки. Обяснителната записка да съдържа заданието, описание на използваните структури данни и алгоритми и програмен листинг.

# Описание на използваните структури данни и алгоритми

При реализацията на задачата е използван верижно (свързано) разпределяне на файлове – всеки блок съдържа указател към следващия блок във веригата (фигура 1). Във FAT има само по един елемент за всеки файл, съдържащ началния блок и дължината на файла.



Фигура 1 Верижно разпределяне

private List<Directory> files; - списък на файловете в главната директория на носителя;

Класът Directory има следните полета:

* String fileName – името на файла;
* Int blockNumber – номера на началния блок на файла;
* uint size – брой блокове (дължина);
* Color color – цветът, който съответства на файла

private int?[] blockMemory е блокова карта на носителя. Ако стойността на i-ия елемент е null то това поле е незаето (празно). Ако е 0 или положително число, то това е указателят към следващият блок. В противен случай ако blockMemory[i] < 0, то това е последният блок на файла.

Използвани са следните функции:

* private void btnSetMemory\_Click(object sender, EventArgs e) – изпълнява след като бутонът „Зареди“ бъде натиснат: изчислява се броят на блоковете и се изчертават на екрана;
* private void btnSaveFile\_Click(object sender, EventArgs e) – изпълнява се, когато бутонът „Запази“ бъде натиснат: служи за добавяне на файл.
* private void Repaint() – използва се за обновяване на визуалните компоненти (цветът на блоковете)
* private int SaveFile(uint size) – функция за записване на файла. Ако операцията е изпълнена успешно се връща номерът на началния блок;
* private void btnDelete\_Click(object sender, EventArgs e) – изпълнява се, когато бутонът „Изтрий“ бъде натиснат: за изтриване на файл;

# Код на програмата (листинг)



## Program.cs

using System;

using System.Windows.Forms;

namespace OS\_FAT

{

static class Program

{

[STAThread]

static void Main()

{

Application.EnableVisualStyles();

Application.SetCompatibleTextRenderingDefault(false);

Application.Run(new frmMain());

}

}

}

## frmMain.cs

using System;

using System.Collections.Generic;

using System.Drawing;

using System.Windows.Forms;

namespace OS\_FAT

{

public partial class frmMain : Form

{

private const int MAX\_BLOCKS\_ON\_ROW = 20;

private uint memorySize;

private uint blockSize;

private uint freeMemorySize;

private int?[] blockMemory;

private List<Directory> files;

public frmMain()

{

InitializeComponent();

}

private void btnSetMemory\_Click(object sender, EventArgs e)

{

// init

files = new List<Directory>();

dataGridView1.DataSource = null;

dataGridView1.Refresh();

memorySize = (uint)this.nudMemorySize.Value;

blockSize = (uint)this.nudBlockSize.Value;

blockMemory = new int?[(int)Math.Round(memorySize / (float)blockSize, MidpointRounding.AwayFromZero)];

for (int i = 0; i < blockMemory.Length; i++)

{

blockMemory[i] = null;

}

freeMemorySize = (uint)blockMemory.Length;

float d = blockMemory.Length / (float)MAX\_BLOCKS\_ON\_ROW;

tableLayoutPanel6.RowCount = (d - (int)d) > 0 ? (int)(d + 1) : (int)d;

tableLayoutPanel6.RowStyles.Clear();

tableLayoutPanel6.SuspendLayout();

tableLayoutPanel6.Controls.Clear();

for (int i = 0; i < tableLayoutPanel6.RowCount; i++)

{

tableLayoutPanel6.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

}

tableLayoutPanel6.ColumnCount = blockMemory.Length < MAX\_BLOCKS\_ON\_ROW ? blockMemory.Length : MAX\_BLOCKS\_ON\_ROW;

tableLayoutPanel6.ColumnStyles.Clear();

for (int j = 0; j < tableLayoutPanel6.ColumnCount; j++)

{

tableLayoutPanel6.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 50F));

}

int counter = 0;

for (int i = 0; i < tableLayoutPanel6.RowCount; i++)

{

for (int j = 0; j < tableLayoutPanel6.ColumnCount; j++)

{

if (counter >= blockMemory.Length)

{

break;

}

Panel backgroundColorPanel = new Panel();

backgroundColorPanel.BackColor = Color.White;

backgroundColorPanel.Dock = DockStyle.Fill;

Label cellNumber = new Label();

cellNumber.ForeColor = Color.DarkGray;

cellNumber.Text = counter.ToString();

backgroundColorPanel.Controls.Add(cellNumber);

tableLayoutPanel6.Controls.Add(backgroundColorPanel, j, i);

counter++;

}

}

tableLayoutPanel6.ResumeLayout();

Repaint();

this.lblMemorySizeStatusValue.Text = blockMemory.Length.ToString();

this.lblFreeMemoryStatusValue.Text = freeMemorySize.ToString();

scContent.Enabled = true;

}

private void btnSaveFile\_Click(object sender, EventArgs e)

{

if (!String.IsNullOrWhiteSpace(tbFileName.Text))

{

Directory file = new Directory();

file.FileName = tbFileName.Text;

uint size = (uint)Math.Round(nudFileSize.Value / nudBlockSize.Value, MidpointRounding.AwayFromZero);

if (size == 0)

{

size = 1;

}

file.Size = (uint)nudFileSize.Value;

file.BlockNumber = SaveFile(size);

if (file.BlockNumber >= 0)

{

KnownColor[] colors = (KnownColor[])Enum.GetValues(typeof(KnownColor));

bool same = false;

do

{

same = false;

file.Color = Color.FromKnownColor(colors[new Random().Next(0, colors.Length)]);

for (int i = 0; i < files.Count; i++)

{

if (files[i].Color == file.Color)

{

same = true;

break;

}

}

} while (file.Color == Color.White || file.Color == Color.DarkGray || file.Color == Color.Transparent || file.Color == Color.GhostWhite || same);

files.Add(file);

tbFileName.Text = "";

nudFileSize.Value = nudFileSize.Minimum;

btnDelete.Enabled = true;

Repaint();

}

else

{

MessageBox.Show("Файлът не може да се запише!");

}

}

else

{

MessageBox.Show("Моля въведете името на файла!");

}

}

private void Repaint()

{

this.lblFreeMemoryStatusValue.Text = freeMemorySize.ToString();

tableLayoutPanel6.SuspendLayout();

int counter = 0;

for (int f = 0; f < files.Count; f++)

{

counter = 0;

bool flag = false;

int next = (int)files[f].BlockNumber;

for (int i = 0; i < tableLayoutPanel6.RowCount; i++)

{

for (int j = 0; j < tableLayoutPanel6.ColumnCount; j++)

{

if (counter == next)

{

next = (int)blockMemory[next];

tableLayoutPanel6.GetControlFromPosition(j, i).BackColor = files[f].Color;

}

else if (next < 0)

{

tableLayoutPanel6.GetControlFromPosition(j, i).BackColor = files[f].Color;

flag = true;

break;

}

counter++;

}

if (flag)

{

break;

}

}

}

counter = 0;

for (int i = 0; i < tableLayoutPanel6.RowCount; i++)

{

for (int j = 0; j < tableLayoutPanel6.ColumnCount; j++)

{

if (counter >= blockMemory.Length)

{

break;

}

if (blockMemory[counter] == null)

{

tableLayoutPanel6.GetControlFromPosition(j, i).BackColor = Color.White;

}

counter++;

}

}

tableLayoutPanel6.ResumeLayout();

BindingSource bs = new BindingSource();

bs.DataSource = files;

dataGridView1.DataSource = bs;

dataGridView1.Columns[dataGridView1.Columns.Count - 1].Visible = false;

}

private int SaveFile(uint size)

{

int firstAddress = -1;

if (freeMemorySize >= size)

{

freeMemorySize -= size;

int sizeCounter = 0;

int prev = -1;

for (int i = 0; i < blockMemory.Length && sizeCounter <= size; i++)

{

if (blockMemory[i] == null)

{

if (firstAddress < 0)

{

firstAddress = i;

prev = i;

blockMemory[i] = i;

}

else if (sizeCounter == size)

{

blockMemory[prev] = -1;

}

else

{

blockMemory[prev] = i;

prev = i;

}

sizeCounter++;

}

}

}

return firstAddress;

}

private void btnDelete\_Click(object sender, EventArgs e)

{

if (dataGridView1.SelectedRows.Count > 0)

{

Directory d = files[dataGridView1.SelectedRows[0].Index];

int prev = -1;

for (int i = d.BlockNumber; i < blockMemory.Length; )

{

freeMemorySize++;

if (blockMemory[i] == -1)

{

blockMemory[i] = null;

break;

}

prev = i;

i = (int)blockMemory[i];

blockMemory[prev] = null;

}

files.RemoveAt(dataGridView1.SelectedRows[0].Index);

Repaint();

btnDelete.Enabled = files.Count > 0 ? true : false;

}

else

{

MessageBox.Show("Моля изберете елемент от FAT таблицата!");

}

}

}

}

## frmMain.Designer.cs

namespace OS\_FAT

{

partial class frmMain

{

/// <summary>

/// Required designer variable.

/// </summary>

private System.ComponentModel.IContainer components = null;

/// <summary>

/// Clean up any resources being used.

/// </summary>

/// <param name="disposing">true if managed resources should be disposed; otherwise, false.</param>

protected override void Dispose(bool disposing)

{

if (disposing && (components != null))

{

components.Dispose();

}

base.Dispose(disposing);

}

#region Windows Form Designer generated code

/// <summary>

/// Required method for Designer support - do not modify

/// the contents of this method with the code editor.

/// </summary>

private void InitializeComponent()

{

this.scMain = new System.Windows.Forms.SplitContainer();

this.tableLayoutPanel1 = new System.Windows.Forms.TableLayoutPanel();

this.btnSetMemory = new System.Windows.Forms.Button();

this.nudMemorySize = new System.Windows.Forms.NumericUpDown();

this.nudBlockSize = new System.Windows.Forms.NumericUpDown();

this.lblMemorySize = new System.Windows.Forms.Label();

this.label1 = new System.Windows.Forms.Label();

this.scContent = new System.Windows.Forms.SplitContainer();

this.tableLayoutPanel6 = new System.Windows.Forms.TableLayoutPanel();

this.tableLayoutPanel2 = new System.Windows.Forms.TableLayoutPanel();

this.tableLayoutPanel3 = new System.Windows.Forms.TableLayoutPanel();

this.btnDelete = new System.Windows.Forms.Button();

this.tableLayoutPanel4 = new System.Windows.Forms.TableLayoutPanel();

this.lblMemorySizeStatusValue = new System.Windows.Forms.Label();

this.lblFreeMemoryStatus = new System.Windows.Forms.Label();

this.lblMemorySizeStatus = new System.Windows.Forms.Label();

this.lblFreeMemoryStatusValue = new System.Windows.Forms.Label();

this.tableLayoutPanel5 = new System.Windows.Forms.TableLayoutPanel();

this.btnSaveFile = new System.Windows.Forms.Button();

this.tbFileName = new System.Windows.Forms.TextBox();

this.lblFileName = new System.Windows.Forms.Label();

this.nudFileSize = new System.Windows.Forms.NumericUpDown();

this.lblFileSize = new System.Windows.Forms.Label();

this.dataGridView1 = new System.Windows.Forms.DataGridView();

((System.ComponentModel.ISupportInitialize)(this.scMain)).BeginInit();

this.scMain.Panel1.SuspendLayout();

this.scMain.Panel2.SuspendLayout();

this.scMain.SuspendLayout();

this.tableLayoutPanel1.SuspendLayout();

((System.ComponentModel.ISupportInitialize)(this.nudMemorySize)).BeginInit();

((System.ComponentModel.ISupportInitialize)(this.nudBlockSize)).BeginInit();

((System.ComponentModel.ISupportInitialize)(this.scContent)).BeginInit();

this.scContent.Panel1.SuspendLayout();

this.scContent.Panel2.SuspendLayout();

this.scContent.SuspendLayout();

this.tableLayoutPanel2.SuspendLayout();

this.tableLayoutPanel3.SuspendLayout();

this.tableLayoutPanel4.SuspendLayout();

this.tableLayoutPanel5.SuspendLayout();

((System.ComponentModel.ISupportInitialize)(this.nudFileSize)).BeginInit();

((System.ComponentModel.ISupportInitialize)(this.dataGridView1)).BeginInit();

this.SuspendLayout();

//

// scMain

//

this.scMain.BorderStyle = System.Windows.Forms.BorderStyle.FixedSingle;

this.scMain.Dock = System.Windows.Forms.DockStyle.Fill;

this.scMain.Location = new System.Drawing.Point(0, 0);

this.scMain.Name = "scMain";

this.scMain.Orientation = System.Windows.Forms.Orientation.Horizontal;

//

// scMain.Panel1

//

this.scMain.Panel1.Controls.Add(this.tableLayoutPanel1);

//

// scMain.Panel2

//

this.scMain.Panel2.Controls.Add(this.scContent);

this.scMain.Size = new System.Drawing.Size(879, 564);

this.scMain.SplitterDistance = 90;

this.scMain.TabIndex = 0;

//

// tableLayoutPanel1

//

this.tableLayoutPanel1.ColumnCount = 3;

this.tableLayoutPanel1.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel1.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel1.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Absolute, 196F));

this.tableLayoutPanel1.Controls.Add(this.btnSetMemory, 2, 1);

this.tableLayoutPanel1.Controls.Add(this.nudMemorySize, 0, 0);

this.tableLayoutPanel1.Controls.Add(this.nudBlockSize, 0, 1);

this.tableLayoutPanel1.Controls.Add(this.lblMemorySize, 1, 0);

this.tableLayoutPanel1.Controls.Add(this.label1, 1, 1);

this.tableLayoutPanel1.Dock = System.Windows.Forms.DockStyle.Fill;

this.tableLayoutPanel1.Location = new System.Drawing.Point(0, 0);

this.tableLayoutPanel1.Name = "tableLayoutPanel1";

this.tableLayoutPanel1.RowCount = 2;

this.tableLayoutPanel1.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel1.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel1.Size = new System.Drawing.Size(877, 88);

this.tableLayoutPanel1.TabIndex = 0;

//

// btnSetMemory

//

this.btnSetMemory.Dock = System.Windows.Forms.DockStyle.Fill;

this.btnSetMemory.Location = new System.Drawing.Point(683, 47);

this.btnSetMemory.Name = "btnSetMemory";

this.btnSetMemory.Size = new System.Drawing.Size(191, 38);

this.btnSetMemory.TabIndex = 0;

this.btnSetMemory.Text = "Зареди";

this.btnSetMemory.UseVisualStyleBackColor = true;

this.btnSetMemory.Click += new System.EventHandler(this.btnSetMemory\_Click);

//

// nudMemorySize

//

this.nudMemorySize.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Left | System.Windows.Forms.AnchorStyles.Right)));

this.nudMemorySize.Location = new System.Drawing.Point(3, 12);

this.nudMemorySize.Maximum = new decimal(new int[] {

500,

0,

0,

0});

this.nudMemorySize.Minimum = new decimal(new int[] {

10,

0,

0,

0});

this.nudMemorySize.Name = "nudMemorySize";

this.nudMemorySize.Size = new System.Drawing.Size(334, 20);

this.nudMemorySize.TabIndex = 1;

this.nudMemorySize.Value = new decimal(new int[] {

100,

0,

0,

0});

//

// nudBlockSize

//

this.nudBlockSize.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Left | System.Windows.Forms.AnchorStyles.Right)));

this.nudBlockSize.Location = new System.Drawing.Point(3, 56);

this.nudBlockSize.Maximum = new decimal(new int[] {

10,

0,

0,

0});

this.nudBlockSize.Minimum = new decimal(new int[] {

1,

0,

0,

0});

this.nudBlockSize.Name = "nudBlockSize";

this.nudBlockSize.Size = new System.Drawing.Size(334, 20);

this.nudBlockSize.TabIndex = 2;

this.nudBlockSize.Value = new decimal(new int[] {

1,

0,

0,

0});

//

// lblMemorySize

//

this.lblMemorySize.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblMemorySize.AutoSize = true;

this.lblMemorySize.Location = new System.Drawing.Point(343, 15);

this.lblMemorySize.Name = "lblMemorySize";

this.lblMemorySize.Size = new System.Drawing.Size(129, 13);

this.lblMemorySize.TabIndex = 3;

this.lblMemorySize.Text = "Размер на паметта (KB)";

//

// label1

//

this.label1.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.label1.AutoSize = true;

this.label1.Location = new System.Drawing.Point(343, 59);

this.label1.Name = "label1";

this.label1.Size = new System.Drawing.Size(149, 13);

this.label1.TabIndex = 4;

this.label1.Text = "Големина на един блок (KB)";

//

// scContent

//

this.scContent.BorderStyle = System.Windows.Forms.BorderStyle.FixedSingle;

this.scContent.Dock = System.Windows.Forms.DockStyle.Fill;

this.scContent.Enabled = false;

this.scContent.Location = new System.Drawing.Point(0, 0);

this.scContent.Name = "scContent";

//

// scContent.Panel1

//

this.scContent.Panel1.Controls.Add(this.tableLayoutPanel6);

//

// scContent.Panel2

//

this.scContent.Panel2.Controls.Add(this.tableLayoutPanel2);

this.scContent.Size = new System.Drawing.Size(879, 470);

this.scContent.SplitterDistance = 652;

this.scContent.TabIndex = 0;

//

// tableLayoutPanel6

//

this.tableLayoutPanel6.ColumnCount = 2;

this.tableLayoutPanel6.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Absolute, 20F));

this.tableLayoutPanel6.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Absolute, 587F));

this.tableLayoutPanel6.Dock = System.Windows.Forms.DockStyle.Fill;

this.tableLayoutPanel6.Location = new System.Drawing.Point(0, 0);

this.tableLayoutPanel6.Name = "tableLayoutPanel6";

this.tableLayoutPanel6.RowCount = 2;

this.tableLayoutPanel6.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel6.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel6.Size = new System.Drawing.Size(650, 468);

this.tableLayoutPanel6.TabIndex = 0;

//

// tableLayoutPanel2

//

this.tableLayoutPanel2.ColumnCount = 1;

this.tableLayoutPanel2.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 100F));

this.tableLayoutPanel2.Controls.Add(this.tableLayoutPanel3, 0, 0);

this.tableLayoutPanel2.Controls.Add(this.tableLayoutPanel4, 0, 2);

this.tableLayoutPanel2.Controls.Add(this.tableLayoutPanel5, 0, 1);

this.tableLayoutPanel2.Dock = System.Windows.Forms.DockStyle.Fill;

this.tableLayoutPanel2.Location = new System.Drawing.Point(0, 0);

this.tableLayoutPanel2.Name = "tableLayoutPanel2";

this.tableLayoutPanel2.RowCount = 3;

this.tableLayoutPanel2.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 55F));

this.tableLayoutPanel2.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 30F));

this.tableLayoutPanel2.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 15F));

this.tableLayoutPanel2.Size = new System.Drawing.Size(221, 468);

this.tableLayoutPanel2.TabIndex = 0;

//

// tableLayoutPanel3

//

this.tableLayoutPanel3.ColumnCount = 1;

this.tableLayoutPanel3.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 100F));

this.tableLayoutPanel3.Controls.Add(this.btnDelete, 0, 1);

this.tableLayoutPanel3.Controls.Add(this.dataGridView1, 0, 0);

this.tableLayoutPanel3.Dock = System.Windows.Forms.DockStyle.Fill;

this.tableLayoutPanel3.Location = new System.Drawing.Point(3, 3);

this.tableLayoutPanel3.Name = "tableLayoutPanel3";

this.tableLayoutPanel3.RowCount = 2;

this.tableLayoutPanel3.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 100F));

this.tableLayoutPanel3.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Absolute, 30F));

this.tableLayoutPanel3.Size = new System.Drawing.Size(215, 251);

this.tableLayoutPanel3.TabIndex = 0;

//

// btnDelete

//

this.btnDelete.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Top | System.Windows.Forms.AnchorStyles.Right)));

this.btnDelete.Enabled = false;

this.btnDelete.Location = new System.Drawing.Point(137, 224);

this.btnDelete.Name = "btnDelete";

this.btnDelete.Size = new System.Drawing.Size(75, 24);

this.btnDelete.TabIndex = 1;

this.btnDelete.Text = "Изтрий";

this.btnDelete.UseVisualStyleBackColor = true;

this.btnDelete.Click += new System.EventHandler(this.btnDelete\_Click);

//

// tableLayoutPanel4

//

this.tableLayoutPanel4.ColumnCount = 2;

this.tableLayoutPanel4.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle());

this.tableLayoutPanel4.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 100F));

this.tableLayoutPanel4.Controls.Add(this.lblMemorySizeStatusValue, 1, 1);

this.tableLayoutPanel4.Controls.Add(this.lblFreeMemoryStatus, 0, 0);

this.tableLayoutPanel4.Controls.Add(this.lblMemorySizeStatus, 0, 1);

this.tableLayoutPanel4.Controls.Add(this.lblFreeMemoryStatusValue, 1, 0);

this.tableLayoutPanel4.Dock = System.Windows.Forms.DockStyle.Fill;

this.tableLayoutPanel4.Location = new System.Drawing.Point(3, 400);

this.tableLayoutPanel4.Name = "tableLayoutPanel4";

this.tableLayoutPanel4.RowCount = 2;

this.tableLayoutPanel4.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel4.RowStyles.Add(new System.Windows.Forms.RowStyle(System.Windows.Forms.SizeType.Percent, 50F));

this.tableLayoutPanel4.Size = new System.Drawing.Size(215, 65);

this.tableLayoutPanel4.TabIndex = 1;

//

// lblMemorySizeStatusValue

//

this.lblMemorySizeStatusValue.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblMemorySizeStatusValue.AutoSize = true;

this.lblMemorySizeStatusValue.Font = new System.Drawing.Font("Microsoft Sans Serif", 8.25F, System.Drawing.FontStyle.Bold, System.Drawing.GraphicsUnit.Point, ((byte)(204)));

this.lblMemorySizeStatusValue.Location = new System.Drawing.Point(113, 42);

this.lblMemorySizeStatusValue.Name = "lblMemorySizeStatusValue";

this.lblMemorySizeStatusValue.Size = new System.Drawing.Size(14, 13);

this.lblMemorySizeStatusValue.TabIndex = 3;

this.lblMemorySizeStatusValue.Text = "0";

//

// lblFreeMemoryStatus

//

this.lblFreeMemoryStatus.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblFreeMemoryStatus.AutoSize = true;

this.lblFreeMemoryStatus.Location = new System.Drawing.Point(3, 9);

this.lblFreeMemoryStatus.Name = "lblFreeMemoryStatus";

this.lblFreeMemoryStatus.Size = new System.Drawing.Size(104, 13);

this.lblFreeMemoryStatus.TabIndex = 0;

this.lblFreeMemoryStatus.Text = "Свободни блокове:";

//

// lblMemorySizeStatus

//

this.lblMemorySizeStatus.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblMemorySizeStatus.AutoSize = true;

this.lblMemorySizeStatus.Location = new System.Drawing.Point(3, 42);

this.lblMemorySizeStatus.Name = "lblMemorySizeStatus";

this.lblMemorySizeStatus.Size = new System.Drawing.Size(80, 13);

this.lblMemorySizeStatus.TabIndex = 1;

this.lblMemorySizeStatus.Text = "Брой блокове:";

//

// lblFreeMemoryStatusValue

//

this.lblFreeMemoryStatusValue.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblFreeMemoryStatusValue.AutoSize = true;

this.lblFreeMemoryStatusValue.Font = new System.Drawing.Font("Microsoft Sans Serif", 8.25F, System.Drawing.FontStyle.Bold, System.Drawing.GraphicsUnit.Point, ((byte)(204)));

this.lblFreeMemoryStatusValue.Location = new System.Drawing.Point(113, 9);

this.lblFreeMemoryStatusValue.Name = "lblFreeMemoryStatusValue";

this.lblFreeMemoryStatusValue.Size = new System.Drawing.Size(14, 13);

this.lblFreeMemoryStatusValue.TabIndex = 2;

this.lblFreeMemoryStatusValue.Text = "0";

//

// tableLayoutPanel5

//

this.tableLayoutPanel5.ColumnCount = 2;

this.tableLayoutPanel5.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Percent, 100F));

this.tableLayoutPanel5.ColumnStyles.Add(new System.Windows.Forms.ColumnStyle(System.Windows.Forms.SizeType.Absolute, 122F));

this.tableLayoutPanel5.Controls.Add(this.btnSaveFile, 1, 2);

this.tableLayoutPanel5.Controls.Add(this.tbFileName, 1, 0);

this.tableLayoutPanel5.Controls.Add(this.lblFileName, 0, 0);

this.tableLayoutPanel5.Controls.Add(this.nudFileSize, 1, 1);

this.tableLayoutPanel5.Controls.Add(this.lblFileSize, 0, 1);

this.tableLayoutPanel5.Dock = System.Windows.Forms.DockStyle.Top;

this.tableLayoutPanel5.Location = new System.Drawing.Point(3, 260);

this.tableLayoutPanel5.Name = "tableLayoutPanel5";

this.tableLayoutPanel5.RowCount = 3;

this.tableLayoutPanel5.RowStyles.Add(new System.Windows.Forms.RowStyle());

this.tableLayoutPanel5.RowStyles.Add(new System.Windows.Forms.RowStyle());

this.tableLayoutPanel5.RowStyles.Add(new System.Windows.Forms.RowStyle());

this.tableLayoutPanel5.Size = new System.Drawing.Size(215, 100);

this.tableLayoutPanel5.TabIndex = 2;

//

// btnSaveFile

//

this.btnSaveFile.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Top | System.Windows.Forms.AnchorStyles.Right)));

this.btnSaveFile.Location = new System.Drawing.Point(137, 55);

this.btnSaveFile.Name = "btnSaveFile";

this.btnSaveFile.Size = new System.Drawing.Size(75, 30);

this.btnSaveFile.TabIndex = 2;

this.btnSaveFile.Text = "Запази";

this.btnSaveFile.UseVisualStyleBackColor = true;

this.btnSaveFile.Click += new System.EventHandler(this.btnSaveFile\_Click);

//

// tbFileName

//

this.tbFileName.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Left | System.Windows.Forms.AnchorStyles.Right)));

this.tbFileName.Location = new System.Drawing.Point(96, 3);

this.tbFileName.Name = "tbFileName";

this.tbFileName.Size = new System.Drawing.Size(116, 20);

this.tbFileName.TabIndex = 0;

//

// lblFileName

//

this.lblFileName.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblFileName.AutoSize = true;

this.lblFileName.Location = new System.Drawing.Point(3, 6);

this.lblFileName.Name = "lblFileName";

this.lblFileName.Size = new System.Drawing.Size(36, 13);

this.lblFileName.TabIndex = 3;

this.lblFileName.Text = "Файл";

//

// nudFileSize

//

this.nudFileSize.Anchor = ((System.Windows.Forms.AnchorStyles)((System.Windows.Forms.AnchorStyles.Left | System.Windows.Forms.AnchorStyles.Right)));

this.nudFileSize.Location = new System.Drawing.Point(96, 29);

this.nudFileSize.Maximum = new decimal(new int[] {

500,

0,

0,

0});

this.nudFileSize.Minimum = new decimal(new int[] {

1,

0,

0,

0});

this.nudFileSize.Name = "nudFileSize";

this.nudFileSize.Size = new System.Drawing.Size(116, 20);

this.nudFileSize.TabIndex = 1;

this.nudFileSize.Value = new decimal(new int[] {

1,

0,

0,

0});

//

// lblFileSize

//

this.lblFileSize.Anchor = System.Windows.Forms.AnchorStyles.Left;

this.lblFileSize.AutoSize = true;

this.lblFileSize.Location = new System.Drawing.Point(3, 32);

this.lblFileSize.Name = "lblFileSize";

this.lblFileSize.Size = new System.Drawing.Size(69, 13);

this.lblFileSize.TabIndex = 4;

this.lblFileSize.Text = "Размер (KB)";

//

// dataGridView1

//

this.dataGridView1.AllowUserToAddRows = false;

this.dataGridView1.AllowUserToDeleteRows = false;

this.dataGridView1.AutoSizeColumnsMode = System.Windows.Forms.DataGridViewAutoSizeColumnsMode.Fill;

this.dataGridView1.ColumnHeadersHeightSizeMode = System.Windows.Forms.DataGridViewColumnHeadersHeightSizeMode.AutoSize;

this.dataGridView1.Dock = System.Windows.Forms.DockStyle.Fill;

this.dataGridView1.Location = new System.Drawing.Point(0, 0);

this.dataGridView1.Margin = new System.Windows.Forms.Padding(0);

this.dataGridView1.MultiSelect = false;

this.dataGridView1.Name = "dataGridView1";

this.dataGridView1.ReadOnly = true;

this.dataGridView1.SelectionMode = System.Windows.Forms.DataGridViewSelectionMode.FullRowSelect;

this.dataGridView1.Size = new System.Drawing.Size(215, 221);

this.dataGridView1.TabIndex = 2;

//

// frmMain

//

this.AutoScaleDimensions = new System.Drawing.SizeF(6F, 13F);

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(879, 564);

this.Controls.Add(this.scMain);

this.Name = "frmMain";

this.StartPosition = System.Windows.Forms.FormStartPosition.CenterScreen;

this.Text = "Управление на външната памет - организация FAT";

this.scMain.Panel1.ResumeLayout(false);

this.scMain.Panel2.ResumeLayout(false);

((System.ComponentModel.ISupportInitialize)(this.scMain)).EndInit();

this.scMain.ResumeLayout(false);

this.tableLayoutPanel1.ResumeLayout(false);

this.tableLayoutPanel1.PerformLayout();

((System.ComponentModel.ISupportInitialize)(this.nudMemorySize)).EndInit();

((System.ComponentModel.ISupportInitialize)(this.nudBlockSize)).EndInit();

this.scContent.Panel1.ResumeLayout(false);

this.scContent.Panel2.ResumeLayout(false);

((System.ComponentModel.ISupportInitialize)(this.scContent)).EndInit();

this.scContent.ResumeLayout(false);

this.tableLayoutPanel2.ResumeLayout(false);

this.tableLayoutPanel3.ResumeLayout(false);

this.tableLayoutPanel4.ResumeLayout(false);

this.tableLayoutPanel4.PerformLayout();

this.tableLayoutPanel5.ResumeLayout(false);

this.tableLayoutPanel5.PerformLayout();

((System.ComponentModel.ISupportInitialize)(this.nudFileSize)).EndInit();

((System.ComponentModel.ISupportInitialize)(this.dataGridView1)).EndInit();

this.ResumeLayout(false);

}

#endregion

private System.Windows.Forms.SplitContainer scMain;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel1;

private System.Windows.Forms.Button btnSetMemory;

private System.Windows.Forms.NumericUpDown nudMemorySize;

private System.Windows.Forms.NumericUpDown nudBlockSize;

private System.Windows.Forms.Label lblMemorySize;

private System.Windows.Forms.Label label1;

private System.Windows.Forms.SplitContainer scContent;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel2;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel3;

private System.Windows.Forms.Button btnDelete;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel4;

private System.Windows.Forms.Label lblMemorySizeStatusValue;

private System.Windows.Forms.Label lblFreeMemoryStatus;

private System.Windows.Forms.Label lblMemorySizeStatus;

private System.Windows.Forms.Label lblFreeMemoryStatusValue;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel5;

private System.Windows.Forms.TextBox tbFileName;

private System.Windows.Forms.NumericUpDown nudFileSize;

private System.Windows.Forms.Button btnSaveFile;

private System.Windows.Forms.TableLayoutPanel tableLayoutPanel6;

private System.Windows.Forms.Label lblFileName;

private System.Windows.Forms.Label lblFileSize;

private System.Windows.Forms.DataGridView dataGridView1;

}

}

## Directory.cs

using System;

using System.Drawing;

namespace OS\_FAT

{

public class Directory

{

private String fileName;

private int blockNumber;

private uint size;

private Color color;

public string FileName

{

get

{

return fileName;

}

set

{

fileName = value;

}

}

public int BlockNumber

{

get

{

return blockNumber;

}

set

{

blockNumber = value;

}

}

public uint Size

{

get

{

return size;

}

set

{

size = value;

}

}

public Color Color

{

get

{

return color;

}

set

{

color = value;

}

}

}

}

# Демо

