Ministerul Educaţiei al Republicii Moldova

Universitatea Tehnică a Moldovei

Facultatea Calculatoare Informatică și Microelectronică

Catedra Tehnologii Informaționale

**RAPORT**

Lucrare de laborator Nr.1

Tema: MEDIUL INTEGRAT C++ BUILDER

*MEDII INTERACTIVE DE DEZVOLTARE A PRODUSELOR SOFT*

A efectuat: St. gr. TI-142

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Chişinău 2016

**Scopul lucrării:**

**a)** Însuşirea modului de utilizare a celor mai importante componente ale mediului integrat C++ BUILDER . Realizarea unui program simplu care utilizează componente de tip *TButton, TEdit, Tlabel, RadioButton* etc.

**b)** Însuşirea modului de utilizare a componentei VCL **TTimer.** Însuşirea modului de utilizare a funcţiilor de lucru cu timpul sistem. Realizarea unor aplicaţii de gestionare a resursei timp.

**c)** Însuşirea modului de utilizare a componentelor VCL **TPaintBox** şi **TPanel.** Însuşirea modului de utilizare a principalelor funcţii grafice ale mediului C++BUILDER . Realizarea unor elemente pentru afişarea grafică a informaţiei (diagramă şi bargraf).

**Lisning-urile:**

*//---------------------------------------------------------------------------*

*Laborator 1 A*

*#include <vcl.h>*

*#pragma hdrstop*

*#include "Lab1A.h"*

*//---------------------------------------------------------------------------*

*#pragma package(smart\_init)*

*#pragma resource "\*.dfm"*

*TForm1 \*Form1;*

*int i;*

*//---------------------------------------------------------------------------*

*\_\_fastcall TForm1::TForm1(TComponent\* Owner)*

*: TForm(Owner)*

*{*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button1Click(TObject \*Sender)*

*{*

*i+=1;*

*Edit1->Text = IntToStr(i);*

*Label3->Caption = "Variabila i se incrementeaza";*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button2Click(TObject \*Sender)*

*{*

*i-=1;*

*Edit1->Text = IntToStr(i);*

*Label3->Caption = "Variabila i se decrementeaza";*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button3Click(TObject \*Sender)*

*{*

*Close();*

*}*

*//---------------------------------------------------------------------------*

*//---------------------------------------------------------------------------*

*Laborator 1 B*

*#include <vcl.h>*

*#include <stdio.h>*

*#pragma hdrstop*

*#include "Lab1B.h"*

*#include "dos.h"*

*//---------------------------------------------------------------------------*

*#pragma package(smart\_init)*

*#pragma resource "\*.dfm"*

*TForm1 \*Form1;*

*struct date d;*

*struct time t;*

*unsigned int MS=0;*

*unsigned int S=0;*

*unsigned int M=0;*

*//---------------------------------------------------------------------------*

*\_\_fastcall TForm1::TForm1(TComponent\* Owner)*

*: TForm(Owner)*

*{*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button1Click(TObject \*Sender)*

*{*

*Timer2->Enabled = true;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Timer2Timer(TObject \*Sender)*

*{*

*MS+=1;*

*if(MS==10)*

*{S+=1; MS=0;}*

*if(S==60)*

*{M+=1; S=0;}*

*if(M==60)*

*{M=0;}*

*Edit2->Text = IntToStr(M) + " min " + IntToStr(S) + " sec " + IntToStr(MS) + " zec ";*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button2Click(TObject \*Sender)*

*{*

*Timer2->Enabled = false;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button4Click(TObject \*Sender)*

*{*

*Close();*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button3Click(TObject \*Sender)*

*{*

*M=0;*

*S=0;*

*MS=0;*

*Edit2->Text = " 0 min 0 sec 0 zec ";*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Timer1Timer(TObject \*Sender)*

*{*

*char buf[20];*

*getdate(&d);*

*gettime(&t);*

*sprintf(buf,"%02d-%02d-%4d %02d:%02d:%02d",d.da\_day,d.da\_mon,d.da\_year,*

*t.ti\_hour,t.ti\_min,t.ti\_sec);*

*Edit1->Text = "0"+IntToStr(d.da\_day)+"-0"+IntToStr(d.da\_mon)+"-"+*

*IntToStr(d.da\_year)+" "+IntToStr(t.ti\_hour)+":"+IntToStr(t.ti\_min)+":"+*

*IntToStr(t.ti\_sec);*

*}*

*//---------------------------------------------------------------------------*

*//---------------------------------------------------------------------------*

*Laborator 1 C*

*#include <vcl.h>*

*#include <stdio.h>*

*#include <time.h>*

*#include <dos.h>*

*#pragma hdrstop*

*#include "Unit1.h"*

*//---------------------------------------------------------------------------*

*#pragma package(smart\_init)*

*#pragma resource "\*.dfm"*

*using namespace std;*

*TForm1 \*Form1;*

*struct date d;*

*struct time t;*

*int x;*

*int y;*

*randomize();*

*//---------------------------------------------------------------------------*

*\_\_fastcall TForm1::TForm1(TComponent\* Owner)*

*: TForm(Owner)*

*{*

*Timer1->Enabled = true;*

*Timer2->Enabled = false;*

*Button1->Enabled = true;*

*Button2->Enabled = false;*

*char buf[20];*

*getdate(&d);*

*gettime(&t);*

*sprintf(buf," %02d-%02d-%4d %02d:%02d:%02d",d.da\_day,d.da\_mon,d.da\_year,*

*t.ti\_hour, t.ti\_min, t.ti\_sec);*

*Edit1->Text=(AnsiString)buf;*

*PaintBox1->Canvas->Pen->Color = clBlack;*

*PaintBox1->Canvas->Pen->Width = 1;*

*PaintBox1->Canvas->Pen->Style=psDash;*

*PaintBox1->Canvas->Brush->Color = clRed;*

*PaintBox1->Canvas->Brush->Style = bsCross;*

*TRect dreptunghi;*

*PaintBox1->Canvas->Rectangle(20, 20, 100, 100);*

*PaintBox1->Canvas->Ellipse(20, 20, 100, 100);*

*PaintBox1->Canvas->FloodFill(30,30,50,50);*

*PaintBox1->Canvas->MoveTo(20,20);*

*PaintBox1->Canvas->LineTo(40,40);*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Timer1Timer(TObject \*Sender)*

*{*

*char buf[20];*

*getdate(&d);*

*gettime(&t);*

*sprintf(buf," %02d-%02d-%4d %02d:%02d:%02d",d.da\_day,d.da\_mon,d.da\_year,*

*t.ti\_hour, t.ti\_min, t.ti\_sec);*

*Edit1->Text=(AnsiString)buf;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button1Click(TObject \*Sender)*

*{*

*Timer2->Enabled = true;*

*Button1->Enabled = false;*

*Button2->Enabled = true;*

*Button1->ShowHint = false;*

*Button2->ShowHint = true;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Timer2Timer(TObject \*Sender)*

*{*

*y = (int)(rand() % 50) + 1;*

*Panel2->Height = 100 + y;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button2Click(TObject \*Sender)*

*{*

*Timer2->Enabled = false;*

*Button1->Enabled = true;*

*Button2->Enabled = false;*

*Button1->ShowHint = true;*

*Button2->ShowHint = false;*

*}*

*//---------------------------------------------------------------------------*

*void \_\_fastcall TForm1::Button3Click(TObject \*Sender)*

*{*

*Close();*

*}*

*//---------------------------------------------------------------------------*

**Concluzie**

În procesul efectuării lucrării de laborator am făcut cunoștință cu cele mai importante componente ale mediului integrat C++ BUILDER. Și am realizat cele trei sarcini conform cerințelor și a condițiilor din îndrumar.

Pe parcursul lucrării am înțeles importanța, utilitatea, și eficiența unui mediu integrat de dezvoltare a produselor soft fiindca este ușor, rapid de făcut lucruri frumoase și utile.

**Bibliografie:**

*Îndrumar de laborator Lucrarea nr.1*

[*http://radio-hobby.org/modules/instruction/instr.php?id=10*](http://radio-hobby.org/modules/instruction/instr.php?id=10)

[*http://www.functionx.com/cppbcb/Lesson01.htm*](http://www.functionx.com/cppbcb/Lesson01.htm)

[*http://www.functionx.com/cppbcb/Lesson01.htm*](http://www.functionx.com/cppbcb/Lesson01.htm)

[*http://bigcamagan.ru/*](http://bigcamagan.ru/)

[*https://www.youtube.com/watch?v=QZEoIVSPg1c*](https://www.youtube.com/watch?v=QZEoIVSPg1c)