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Муромский институт (филиал)
Федерального государственного бюджетного образовательного учреждения
высшего образования
«Владимирский государственный университет
имени Александра Григорьевича и Николая Григорьевича Столетовых»

Факультет _____ ИТР _____

Кафедра _____ ПИН _____

ЛАБОРАТОРНАЯ РАБОТА №5

По Проектирование человеко-машинного интерфейса

Тема Страничный интерфейс

Руководитель

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(фамилия, инициалы)

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(дата)

Студент _____ ПИН - 121

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(подпись)

(дата)

Муром 2023

Лабораторная работа №4

Тема: Страничный интерфейс

Цель: Научиться создавать и использовать страничный интерфейс вместо стандартных окон в приложениях WPF.

Задание:

1. Изучить материал, представленный в данных методических указаниях к лабораторной работе, а также материал находящийся в сети интернет в свободном доступе по данной теме;
2. Разработать приложение, согласно заданию преподавателя;
3. Составить отчёт. В отчёте отобразить:
 - цели и задачи лабораторной работы;
 - исходный код приложения (отображающий только логику программы и описание работы);
 - код XAML;
 - скриншоты работы приложения;
 - выводы по данной лабораторной работе.

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Разраб.		Ермилов М.В.								
Провер.		Каряев В.В.							2	15
Реценз.								ПИН-121		
Н. Контр.										
Утверд.										

Листинг программы:

```
using System.Windows.Navigation;
namespace FifthExample
{
    public partial class MainWindow : NavigationWindow
    {
        {
        public MainWindow()
        {
        InitializeComponent();
        }
        }
    }

using System.Windows;
using System.Windows.Controls;
namespace FifthExample
{
    public partial class Home : Page
    {
        {
        public Home()
        {
        InitializeComponent();
        }
        private void Button_Click(object sender, RoutedEventArgs e)
        {
        Report reportPage = new Report(this.lbPeople.SelectedItem);
        this.NavigationService.Navigate(reportPage);
        }
        }
    }
```

Листинг кода 3 – Report.xaml.cs:

```
using System.Windows.Controls;
namespace FifthExample
{
    public partial class Report : Page
    {
        {
        public Report()
        {
        InitializeComponent();
        }
    }
    public Report(object data) : this()
    {
    {
    lName.Content = data is ListBoxItem ?
    (data as ListBoxItem).Content.ToString() : "Ничего";
    }
    } } }
```

```
<NavigationWindow x:Class="FifthExample.MainWindow"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
Title="Страничное приложение" Height="300" Width="500" MinWidth="500" MinHeight="300"
Source="Home.xaml">
```

```
<Page x:Class="FifthExample.Home"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
mc:Ignorable="d"
d:DesignHeight="300" d:DesignWidth="500"
Title="Home">
<Grid Margin="10,0,10,10">
<Grid.ColumnDefinitions>
<ColumnDefinition />
</Grid.ColumnDefinitions>
<Grid.RowDefinitions>
<RowDefinition Height="Auto"/>
<RowDefinition />
<RowDefinition Height="Auto"/>
</Grid.RowDefinitions>
<Border Grid.Column="0" Grid.Row="0" Height="35" Padding="5" Background="Blue">
<Label VerticalAlignment="Center" Foreground="White">Имена</Label>
</Border>
<ListBox Name="lbPeople" Grid.Column="0" Grid.Row="1">
<ListBoxItem>Андрей</ListBoxItem>
<ListBoxItem>Вася</ListBoxItem>
```

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```

<ListBoxItem>Илья</ListBoxItem>
<ListBoxItem>Мария</ListBoxItem>
</ListBox>
<Button Grid.Column="0" Grid.Row="2" Margin="0,10,0,0" Width="125" Height="25"
HorizontalAlignment="Right" Click="Button_Click">Показать</Button>
</Grid>
</Page>

```

```

<Page x:Class="FifthExample.Report"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
mc:Ignorable="d"
d:DesignHeight="300" d:DesignWidth="500" Title="Report">
<StackPanel Margin="50">
<Border Height="35" Padding="5" Background="Blue">
<Label Foreground="White" Content="Вы выбрали"/>
</Border>
<Border Height="35" Padding="1" BorderThickness="2" BorderBrush="Blue">
<Label Name="lName" VerticalAlignment="Center"/>
</Border>
</StackPanel>
</Page>

```

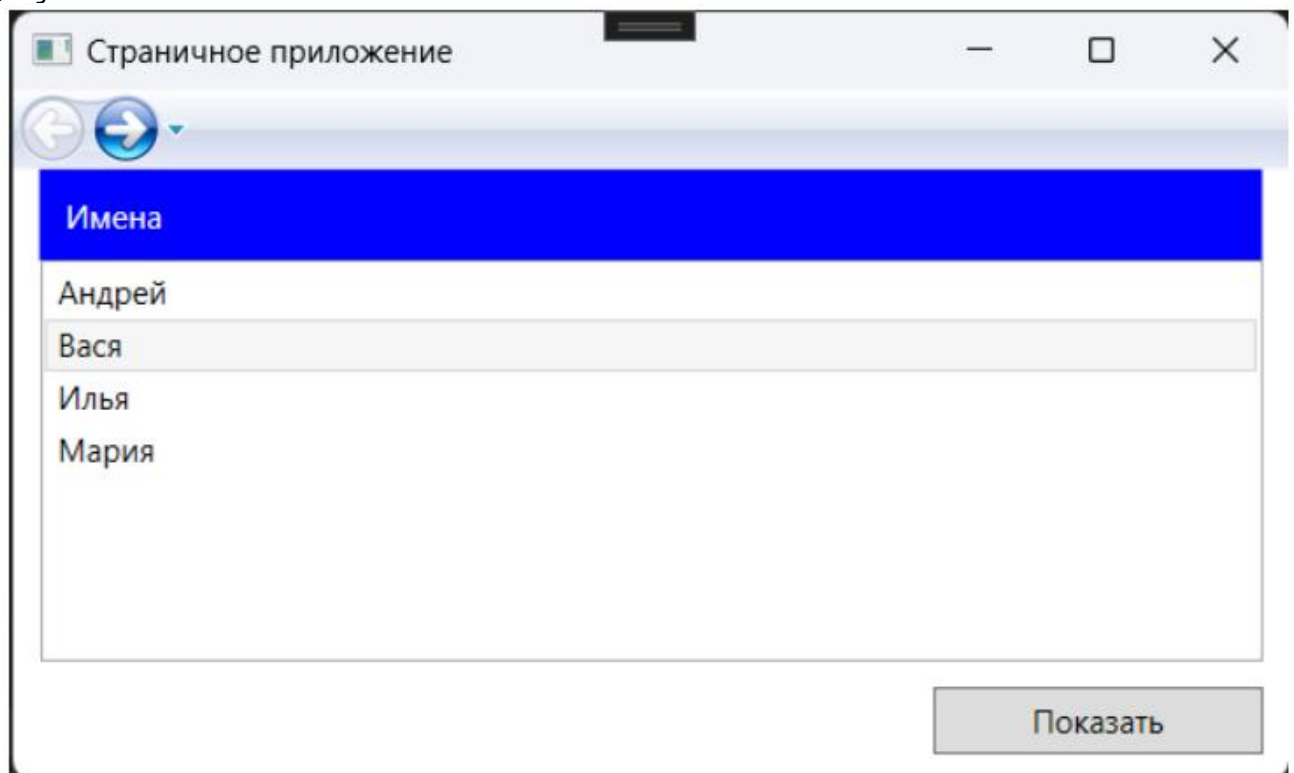


Рисунок 1 - пример работы программы

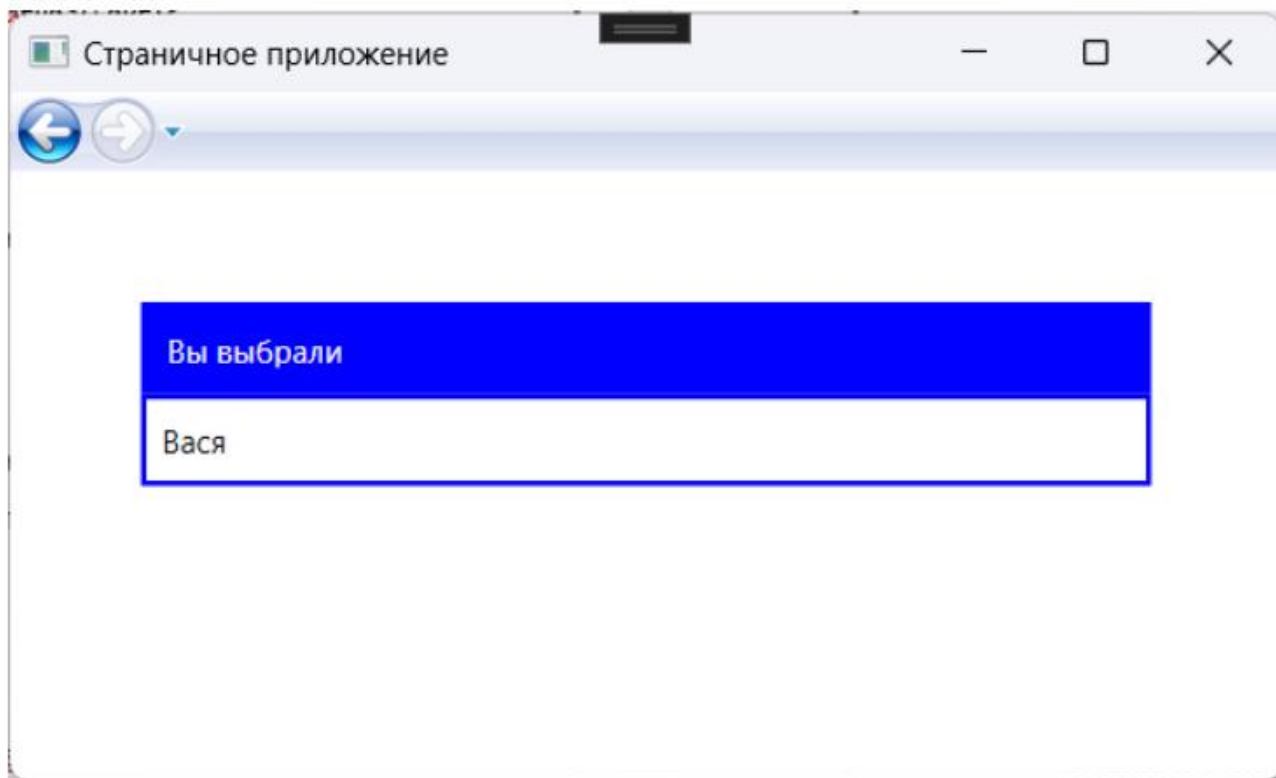


Рисунок 2 - пример работы программы

Листинг программы:

```
using System.Windows;
using System.Windows.Navigation;

namespace work
{
    public partial class MainWindow : NavigationWindow
    {
        public MainWindow() : this("ru-RU") { }
        public MainWindow(string culture)
        {
            System.Threading.Thread.CurrentThread.CurrentUICulture =
            System.Globalization.CultureInfo.GetCultureInfo(culture);
            InitializeComponent();
        }
    }
}

<NavigationWindow x:Class="work.MainWindow"
    xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    Height="300" Width="500" MinWidth="500" MinHeight="300"
    Source="PageList.xaml" ></NavigationWindow>

using Microsoft.Win32;
using Newtonsoft.Json.Linq;
using System;
using System.Collections.Generic;
using System.IO;
using System.Windows;
using System.Windows.Controls;

namespace work
{
```

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```

public partial class PageList : Page
{
    static List<JObject> Book = new List<JObject>();
    static string LastFolder =
Environment.GetFolderPath(Environment.SpecialFolder.Desktop);
    public PageList()
    {
        InitializeComponent();
        WindowTitle = Properties.Resources.ListBook;
        foreach(JObject book in Book)
            List.Items.Add(book["title"].ToString() + " - " +
book["author"].ToString());
    }

    public void OpenFile(object sender, RoutedEventArgs e)
    {
        OpenFileDialog dialog = new OpenFileDialog();
        dialog.Filter = "json Files (*.json)|*.json|All Files (*.*)|*.*";
        dialog.InitialDirectory = LastFolder;
        // if (dialog.ShowDialog()) - error
        // if ((bool)dialog.ShowDialog()) - warn
        // dialog.ShowDialog() -> bool?
        if (dialog.ShowDialog() == true)
        {
            string? lastFolder = Path.GetDirectoryName(dialog.FileName);
            if (lastFolder != null)
            {
                LastFolder = lastFolder;
                JObject? book = null;
                try
                {
                    book = JObject.Parse(File.ReadAllText(dialog.FileName));
                }
                catch { }
                if(book != null)
                    if (book.ContainsKey("title") && book["title"].Type ==
JTokenType.String &&
                    book.ContainsKey("author") && book["author"].Type ==
JTokenType.String &&
                    book.ContainsKey("year") && book["year"].Type ==
JTokenType.String &&
                    book.ContainsKey("sections") && book["sections"].Type ==
JTokenType.Array)
                {
                    Book.Add(book);
                    List.Items.Add(book["title"] + " - " + book["author"]);
                }
                else
                    MessageBox.Show(Properties.Resources.noJSON,
Properties.Resources.Error, MessageBoxButton.OK, MessageBoxImage.Error);
            }
            else
                MessageBox.Show(Properties.Resources.dontOpenFile,
Properties.Resources.Error, MessageBoxButton.OK, MessageBoxImage.Error);
        }
    }

    public void OpenBook(object sender, RoutedEventArgs e)
    {
        if(List.SelectedIndex >= 0 && List.SelectedIndex < Book.Count)
            NavigationService.Navigate(new PageBook(Book[List.SelectedIndex]));
    }
}
<Page x:Class="work.PageList"

```

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```

xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
xmlns:res="clr-namespace:work.Properties"
mc:Ignorable="d"
d:DesignHeight="450" d:DesignWidth="800">
<Page.Resources>
    <RoutedUICommand x:Key="Open" Text="Open" />
    <RoutedUICommand x:Key="File" Text="File" />
</Page.Resources>
<Page.CommandBindings>
    <CommandBinding Command="{StaticResource Open}" Executed="OpenBook" />
    <CommandBinding Command="{StaticResource File}" Executed="OpenFile" />
</Page.CommandBindings>
<Page.InputBindings>
    <KeyBinding Key="Enter" Command="{StaticResource Open}" />
    <KeyBinding Key="Q" Modifiers="Ctrl" Command="{StaticResource File}" />
</Page.InputBindings>
<Grid>
    <Button Command="{DynamicResource File}" Width="100" Height="25"
Content="{x:Static res:Resources.SelectBook}" HorizontalAlignment="Left"
Margin="10,10,0,0" VerticalAlignment="Top"/>
    <Button Command="{DynamicResource Open}" Width="100" Height="25"
Content="{x:Static res:Resources.OpenBook}" HorizontalAlignment="Left"
Margin="120,10,0,0" VerticalAlignment="Top"/>
    <ListBox SelectionMode="Single" Name="List" Margin="10,45,10,10"/>
</Grid>
</Page>

using Newtonsoft.Json.Linq;
using System.Windows;
using System.Windows.Controls;

namespace work
{
    public partial class PageBook : Page
    {
        static JObject Book;
        public PageBook(JObject book)
        {
            InitializeComponent();
            WindowTitle = book["title"] + " - " + book["author"];
            Title.Content = book["title"];
            Author.Content = book["author"];
            Year.Content = book["year"];
            Book = book;
            JArray array = (JArray)book["sections"];
            foreach (JObject obj in array)
            {
                string str = "";
                if (obj.ContainsKey("title") && obj["title"].Type == JTokenType.String)
                    str = (string)obj["title"];
                if (obj.ContainsKey("subtitle") && obj["subtitle"].Type ==
JTokenType.String)
                {
                    if (str != "")
                        str += " - ";
                    str += (string)obj["subtitle"];
                }
                List.Items.Add(str);
            }
        }
        public void OpenSection(object sender, RoutedEventArgs e)
        {

```

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```

        if (List.SelectedIndex >= 0 && List.SelectedIndex < Book.Count)
            NavigationService.Navigate(new
                PageText((JObject)((JArray)Book["sections"])[List.SelectedIndex]));
    }
    public void Back(object sender, RoutedEventArgs e)
    {
        NavigationService.GoBack();
    }
}

<Page x:Class="work.PageBook"
    xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
    xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
    xmlns:res="clr-namespace:work.Properties"
    mc:Ignorable="d"
    d:DesignHeight="450" d:DesignWidth="800">
    <Page.Resources>
        <RoutedUICommand x:Key="Open" Text="Open" />
        <RoutedUICommand x:Key="Close" Text="Close" />
    </Page.Resources>
    <Page.CommandBindings>
        <CommandBinding Command="{StaticResource Open}" Executed="OpenSection" />
        <CommandBinding Command="{StaticResource Close}" Executed="Back" />
    </Page.CommandBindings>
    <Page.InputBindings>
        <KeyBinding Key="Enter" Command="{StaticResource Open}" />
        <KeyBinding Key="Backspace" Command="{StaticResource Close}" />
    </Page.InputBindings>
    <Grid>
        <Label FontSize="20" Name="Title" Content="" HorizontalAlignment="Left"
            Margin="25,10,0,0" VerticalAlignment="Top"/>
        <Label FontSize="16" Name="Author" Content="" HorizontalAlignment="Left"
            Margin="25,35,0,0" VerticalAlignment="Top" />
        <Label FontSize="14" Name="Year" Content="" HorizontalAlignment="Left"
            Margin="25,55,0,0" VerticalAlignment="Top"/>
        <Button Command="{DynamicResource Open}" Width="100" Height="25"
            Content="{x:Static res:Resources.Open}" HorizontalAlignment="Right" Margin="0,50,10,0"
            VerticalAlignment="Top"/>
        <ListBox SelectionMode="Single" Name="List" Margin="10,85,10,10"/>
    </Grid>
</Page>

using Newtonsoft.Json.Linq;
using System.Windows;
using System.Windows.Controls;

namespace work
{
    public partial class PageText : Page
    {
        public PageText(JObject book)
        {
            InitializeComponent();
            string str = "";
            if (book.ContainsKey("title") && book["title"].Type == JTokenType.String)
            {
                str = (string)book["title"];
                Title.Content = (string)book["title"];
            }
            if (book.ContainsKey("subtitle") && book["subtitle"].Type ==
                JTokenType.String)
            {

```



```

        if (str != "")
            str += " - ";
        str += (string)book["subtitle"];
        SubTitle.Content = (string)book["subtitle"];
    }
    WindowTitle = str;
    if(book.ContainsKey("text") && book["text"].Type == JTokenType.String)
        Text.Text = (string)book["text"];

    }
    public void Back(object sender, RoutedEventArgs e)
    {
        NavigationService.GoBack();
    }
}

<Page x:Class="work.PageText"
    xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
    xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
    mc:Ignorable="d"
    d:DesignHeight="450" d:DesignWidth="800">
    <Page.Resources>
        <RoutedUICommand x:Key="Close" Text="Close" />
    </Page.Resources>
    <Page.CommandBindings>
        <CommandBinding Command="{StaticResource Close}" Executed="Back" />
    </Page.CommandBindings>
    <Page.InputBindings>
        <KeyBinding Key="Backspace" Command="{StaticResource Close}" />
    </Page.InputBindings>
    <Grid >
        <ScrollViewer VerticalScrollBarVisibility="Auto">
            <Grid >
                <Label Name="Title" FontSize="16" Content="" HorizontalAlignment="Left"
Margin="25,10,0,0" VerticalAlignment="Top"/>
                <Label Name="SubTitle" FontSize="20" Content=""
HorizontalAlignment="Left" Margin="25,40,0,0" VerticalAlignment="Top"/>
                <TextBlock Name="Text" FontSize="14" VerticalAlignment="Top"
Margin="15,80,10,0" Text="" TextWrapping="Wrap" />
            </Grid>
        </ScrollViewer>
    </Grid>
</Page>

<?xml version="1.0" encoding="utf-8"?>
<root>
    <xsd:schema id="root" xmlns="" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
        <xsd:import namespace="http://www.w3.org/XML/1998/namespace" />
        <xsd:element name="root" msdata:IsDataSet="true">
            <xsd:complexType>
                <xsd:choice maxOccurs="unbounded">
                    <xsd:element name="metadata">
                        <xsd:complexType>
                            <xsd:sequence>

```

```

        <xsd:element name="value" type="xsd:string" minOccurs="0" />
    </xsd:sequence>
    <xsd:attribute name="name" use="required" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="mimetype" type="xsd:string" />
    <xsd:attribute ref="xml:space" />
</xsd:complexType>
</xsd:element>
<xsd:element name="assembly">
    <xsd:complexType>
        <xsd:attribute name="alias" type="xsd:string" />
        <xsd:attribute name="name" type="xsd:string" />
    </xsd:complexType>
</xsd:element>
<xsd:element name="data">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="value" type="xsd:string" minOccurs="0"
msdata:Ordinal="1" />
            <xsd:element name="comment" type="xsd:string" minOccurs="0"
msdata:Ordinal="2" />
        </xsd:sequence>
        <xsd:attribute name="name" type="xsd:string" use="required"
msdata:Ordinal="1" />
        <xsd:attribute name="type" type="xsd:string" msdata:Ordinal="3" />
        <xsd:attribute name="mimetype" type="xsd:string" msdata:Ordinal="4" />
        <xsd:attribute ref="xml:space" />
    </xsd:complexType>
</xsd:element>
<xsd:element name="resheader">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="value" type="xsd:string" minOccurs="0"
msdata:Ordinal="1" />
        </xsd:sequence>
        <xsd:attribute name="name" type="xsd:string" use="required" />
    </xsd:complexType>
</xsd:element>
</xsd:choice>
</xsd:complexType>
</xsd:element>
</xsd:schema>
<resheader name="resmimetype">
    <value>text/microsoft-resx</value>

```

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```

</resheader>
<resheader name="version">
  <value>2.0</value>
</resheader>
<resheader name="reader">
  <value>System.Resources.ResXResourceReader, System.Windows.Forms, Version=4.0.0.0,
Culture=neutral, PublicKeyToken=b77a5c561934e089</value>
</resheader>
<resheader name="writer">
  <value>System.Resources.ResXResourceWriter, System.Windows.Forms, Version=4.0.0.0,
Culture=neutral, PublicKeyToken=b77a5c561934e089</value>
</resheader>
<data name="dontOpenFile" xml:space="preserve">
  <value>The JSON file could not be opened!</value>
</data>
<data name="Error" xml:space="preserve">
  <value>Error</value>
</data>
<data name="ListBook" xml:space="preserve">
  <value>List of books</value>
</data>
<data name="noJSON" xml:space="preserve">
  <value>JSON is not structured correctly!</value>
</data>
<data name="Open" xml:space="preserve">
  <value>Open</value>
</data>
<data name="OpenBook" xml:space="preserve">
  <value>Open book</value>
</data>
<data name="SelectBook" xml:space="preserve">
  <value>Select book</value>
</data>
</root>
<?xml version="1.0" encoding="utf-8"?>
<root>
  <xsd:schema id="root" xmlns="" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
    <xsd:import namespace="http://www.w3.org/XML/1998/namespace" />
    <xsd:element name="root" msdata:IsDataSet="true">
      <xsd:complexType>
        <xsd:choice maxOccurs="unbounded">
          <xsd:element name="metadata">
            <xsd:complexType>

```

```

<xsd:sequence>
  <xsd:element name="value" type="xsd:string" minOccurs="0" />
</xsd:sequence>
<xsd:attribute name="name" use="required" type="xsd:string" />
<xsd:attribute name="type" type="xsd:string" />
<xsd:attribute name="mimetype" type="xsd:string" />
<xsd:attribute ref="xml:space" />
</xsd:complexType>
</xsd:element>
<xsd:element name="assembly">
  <xsd:complexType>
    <xsd:attribute name="alias" type="xsd:string" />
    <xsd:attribute name="name" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:element name="data">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="value" type="xsd:string" minOccurs="0"
msdata:Ordinal="1" />
      <xsd:element name="comment" type="xsd:string" minOccurs="0"
msdata:Ordinal="2" />
    </xsd:sequence>
    <xsd:attribute name="name" type="xsd:string" use="required"
msdata:Ordinal="1" />
    <xsd:attribute name="type" type="xsd:string" msdata:Ordinal="3" />
    <xsd:attribute name="mimetype" type="xsd:string" msdata:Ordinal="4" />
    <xsd:attribute ref="xml:space" />
  </xsd:complexType>
</xsd:element>
<xsd:element name="resheader">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="value" type="xsd:string" minOccurs="0"
msdata:Ordinal="1" />
    </xsd:sequence>
    <xsd:attribute name="name" type="xsd:string" use="required" />
  </xsd:complexType>
</xsd:element>
</xsd:choice>
</xsd:complexType>
</xsd:element>
</xsd:schema>
<resheader name="resmimetype">

```

```

    <value>text/microsoft-resx</value>
</resheader>
<resheader name="version">
    <value>2.0</value>
</resheader>
<resheader name="reader">
    <value>System.Resources.ResXResourceReader, System.Windows.Forms, Version=4.0.0.0,
Culture=neutral, PublicKeyToken=b77a5c561934e089</value>
</resheader>
<resheader name="writer">
    <value>System.Resources.ResXResourceWriter, System.Windows.Forms, Version=4.0.0.0,
Culture=neutral, PublicKeyToken=b77a5c561934e089</value>
</resheader>
<data name="dontOpenFile" xml:space="preserve">
    <value>JSON файл не удалось открыть!</value>
</data>
<data name="Error" xml:space="preserve">
    <value>Ошибка</value>
</data>
<data name="ListBook" xml:space="preserve">
    <value>Список книг</value>
</data>
<data name="noJSON" xml:space="preserve">
    <value>JSON структурирован не правильно!</value>
</data>
<data name="Open" xml:space="preserve">
    <value>Открыть</value>
</data>
<data name="OpenBook" xml:space="preserve">
    <value>Открыть книгу</value>
</data>
<data name="SelectBook" xml:space="preserve">
    <value>Выбрать книгу</value>
</data>
</root>

```

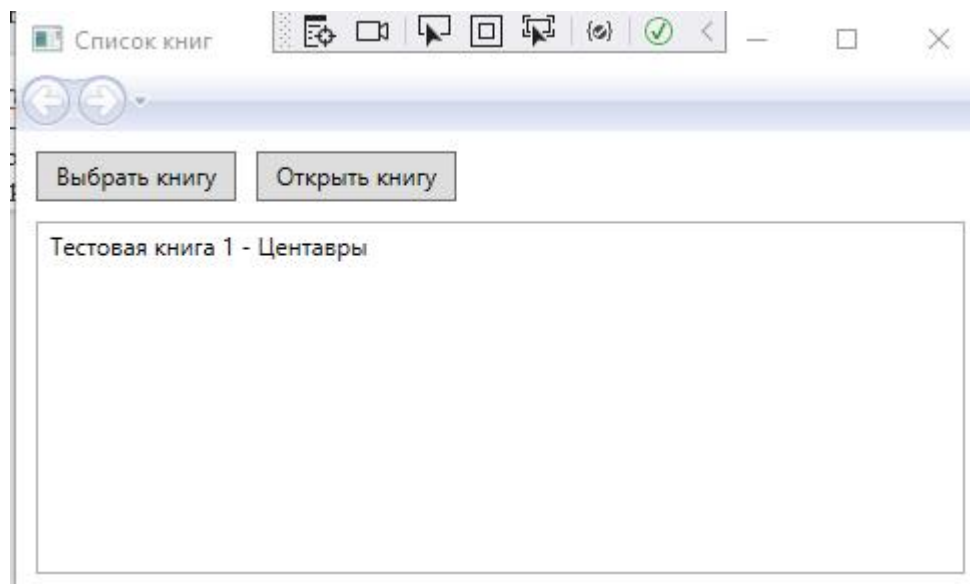


Рисунок 3 - пример работы программы

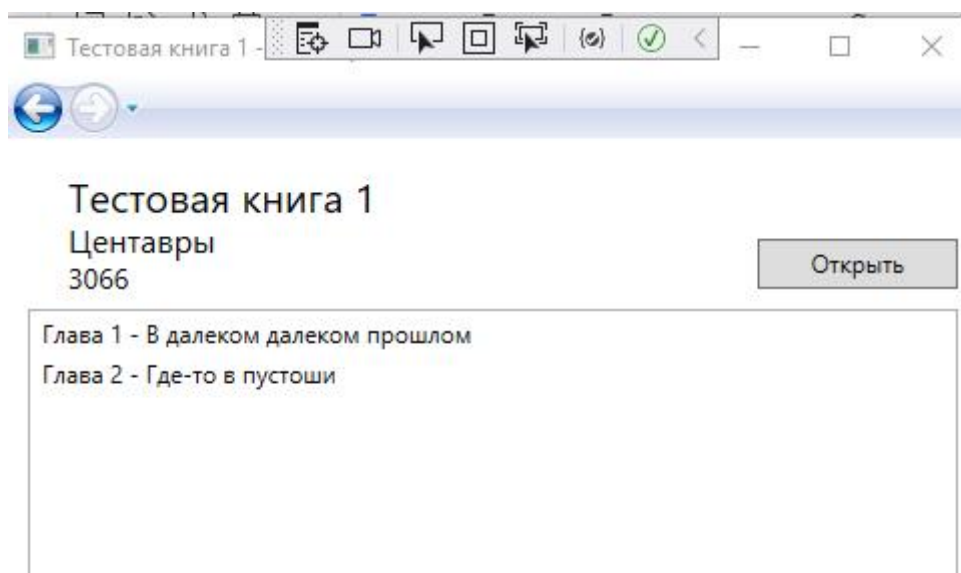


Рисунок 4 - пример работы программы

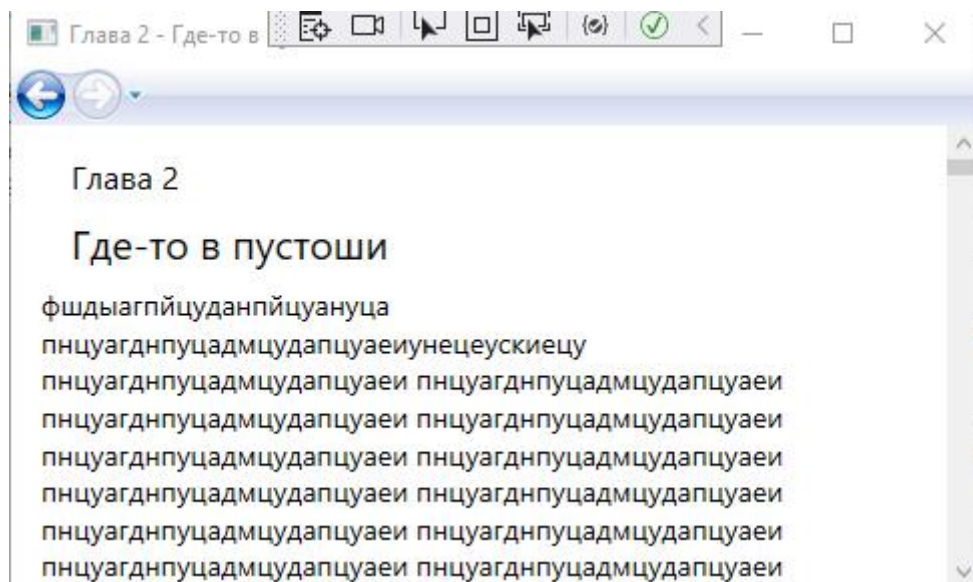


Рисунок 5 - пример работы программы

Вывод: В ходе лабораторной работы, были получены навыки в создании wprf приложения, с использованием страниц.