Sofia University
Department of Mathematics and Informatics

Course : OO Programming C#.NET
Date: December 10, 2019
Student Name:

Lab No. 13

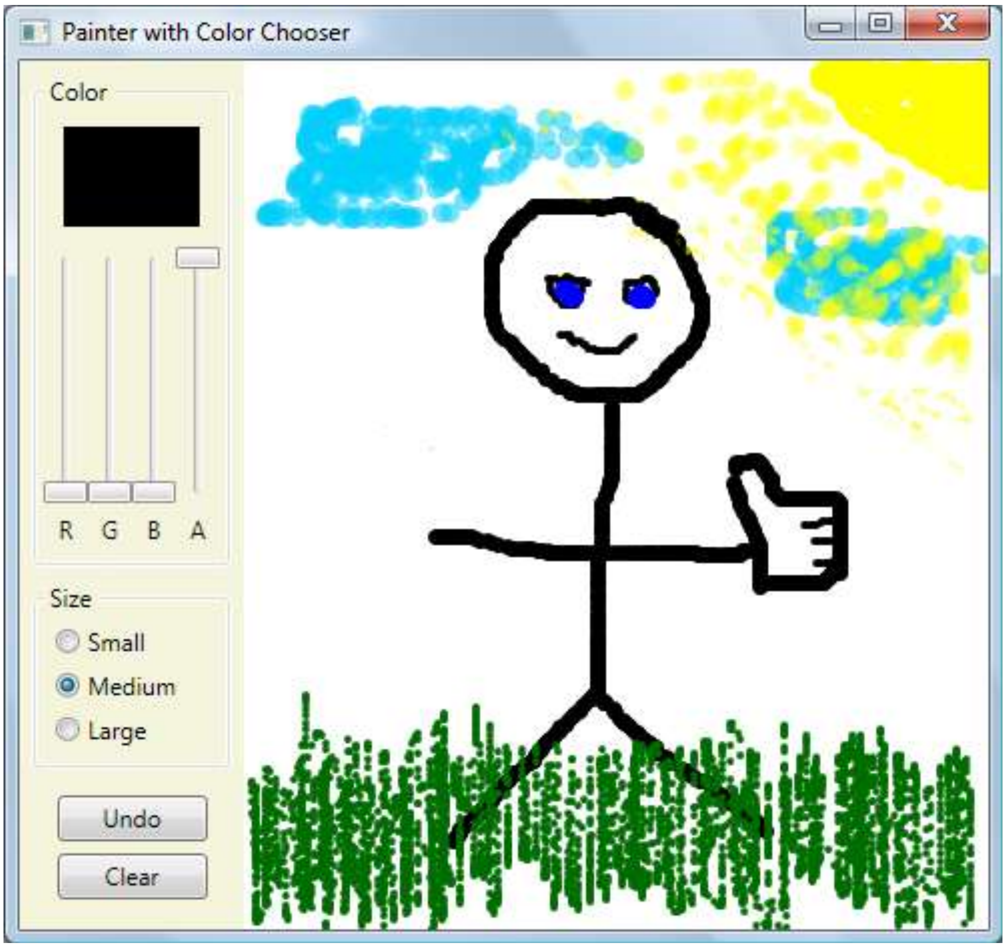
Submit the all C# .NET files developed to solve the problems listed below. Use comments and Modified-Hungarian notation.

Problem No.1

Create a WPF **UserControl** called **LoginPasswordUserControl.** The **LoginPasswordUserControl** contains a **Label (lblLogi**n) that displays **String "Login:**", a **Text-Box (txtLogin**) where the user inputs a ***login name***, a **Label (lblPassword**) that displays the **String "Password:"** and finally, a **TextBox (txtPassword**) where a user inputs ***a password*** (*do not forget to set property **PasswordChar** to **"*"** in the **TextBox**'s **Properties** window*). **LoginPasswordUserControl** must provide **Public** read-only properties **Login** and **Password** that allow an application to retrieve the user input from **txtLogin** and **txtPassword. There** should be **button OK** to export to an application the values input by the user in **LoginPasswordUserControl. Accordingly, button Cancel, clears the strings in the textboxes (txtLogin, txtPassword)** and **exports empty strings** to the **host application** (the one that embeds the user control)
Write a C#.NET WPF application to **test** the ***LoginPasswordUserControl***- the main form of the application contains an instance of the ***UserControl***. In **addition** to the user control the main form should h**ave a *TextBox*.** On clicking the **OK** of the ***LoginPasswordUserControl*** the **strings for the username/password** input by the user in the user control are added accordingly to the ***TextBox***. On clicking the ***Cancel*** of the ***LoginPasswordUserControl*** a ***MessageBox*** displays **a warning message** that no username/password are entered.
Hint: Add a Reference to System.Xaml

Problem No.2

Incorporate an RGBA color chooser into the Painter example (*attached* to the Lab as `Painter.rar`) to look like the figure displayed below. Let the user select the brush color using the color chooser instead of the group of RadioButtons. You should use a style to make all the sliders look the same.



Additionally, **modify the drawing procedure** to **use line segments** connecting consecutive positions of the mouse cursor, while dragging it over the Canvas. The free **line thickness and color**, **Undo** and **Clear** must be **managed by means of the tools on the left side** of the Canvas as shown on the above figure

Problem No. 3

Create a C#.NET calculator as a WPF ***UserControl*** that allows the user to input numbers in a textbox and choose an operation to perform on them (addition, multiplication, division, subtraction) as it is done with a usual calculator (*see the design of the Calculator application in the Accessories Program group in the MS Windows environment*) . Design buttons to execute these operations, as well as, buttons:

a) to remember the currently displayed number (**M** operation)
b) to add the currently displayed number with the number stored in memory and display the result (**M+** operation)
c) to subtract the currently displayed number with the number stored in memory and display the result (**M-** operation)
d) to clear the memory (**MC-** operation

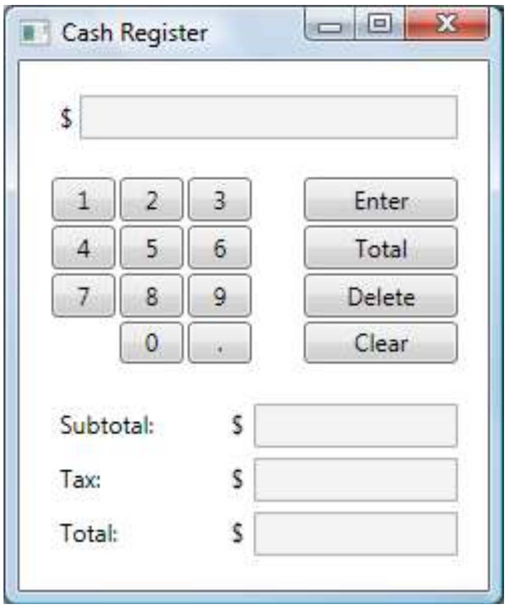
The methods performing the Calculator operations must be **public.** There should be also **two *`public set`* properties** for the user numeric input, necessary to complete the calculator operations**.** There should be a *`public get`* **property** for the Calculator result.

Catch division by zero exceptions, by canceling the division operation and displaying an error message in the textbox. **Allow only legal numeric user input** in the textbox**.**

Write a C#.Net WPF application to test this **user contro**l. (*submit the source code of the user control, its DLL file and the full set of files of the C#.Net Windows application*)

Problem No.4

Create a cash-register application modeled after the one presented below. It should allow users to enter a series of prices, then obtain the total. The **Delete** button should clear the current entry, and the **Clear** button should reset the application.



Problem No.5

Create a C#.NET calculator as a WPF ***UserControl*** that allows the user to input numbers in a textbox and choose an operation to perform on them (addition, multiplication, division, subtraction) as it is done with a usual calculator (*see the design of the Calculator application in the Accessories Program group in the MS Windows environment*) . Design buttons to execute these operations, as well as, buttons:

e) to remember the currently displayed number (**M** operation)

f) to add the currently displayed number with the number stored in memory and display the result (**M+** operation)

g) to subtract the currently displayed number with the number stored in memory and display the result (**M-** operation)

h) to clear the memory (**MC-** operation

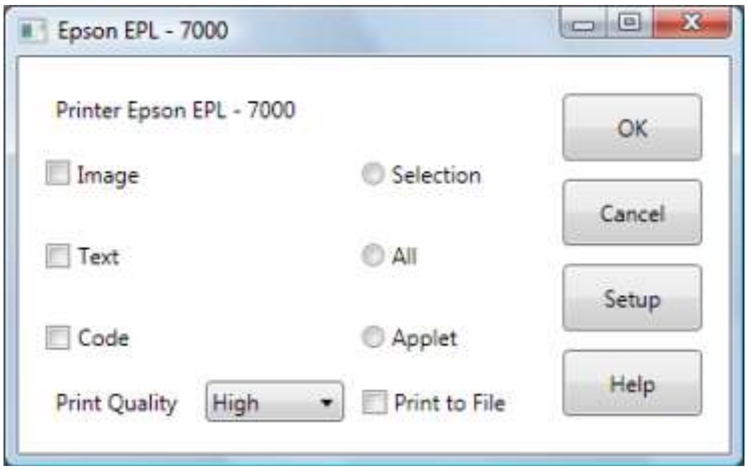
The methods performing the Calculator operations must be **public.** There should be also **two *`public set`* properties** for the user numeric input, necessary to complete the calculator operations**.** There should be a ***`public get`*** **property** for the Calculator result.

Catch division by zero exceptions, by canceling the division operation and displaying an error message in the textbox. **Allow only legal numeric user input** in the textbox**.**

Write a C#.Net WPF application to test this **user contro**l. (*submit the source code of the user control, its DLL file and the full set of files of the C#.Net Windows application*)

Problem No.6

Create the GUI displayed (you do not have to provide functionality) using WPF. Do not use a Canvas. Do not use explicit sizing or positioning

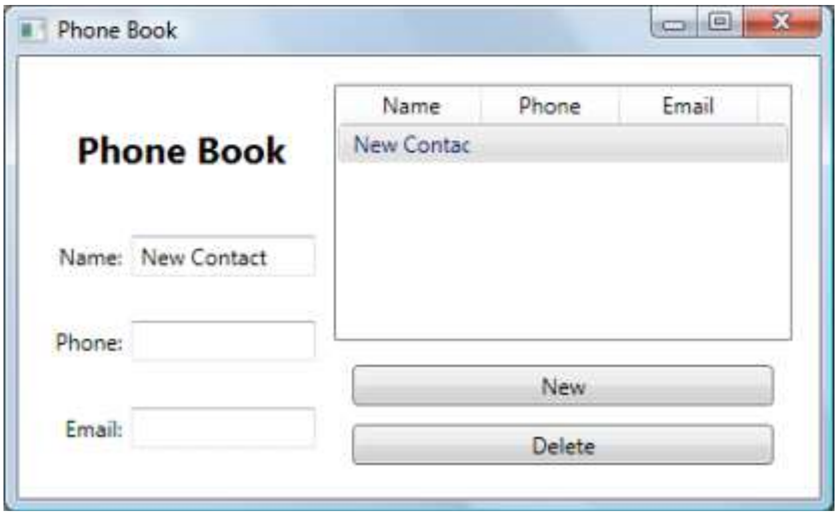


Problem No.7

Create Pages and populate content in one Window- load multiple pages into a single window that you are using.

Problem No.8

WPF allows two-way data bindings. In a normal data binding, if the data source is updated, the binding's target will update, but not vice versa. In a two-way binding, if the value is changed in either the binding's source or its target, the other will be automatically updated. To create a two way binding, set the Mode property to TwoWay at the Binding's declaration. Create a phone-book application modeled after the one shown below. When the user selects a contact from the contacts list, its information should display in an editable GridView. As the information is modified, the contacts list should display each change.


Phone Book
Phone Book
Name:
New Contact
Phone:
Email:
Name
Phone
Email
New Contac
New
Delete