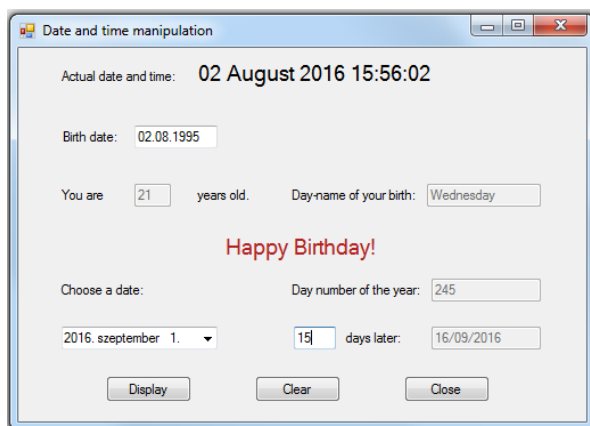
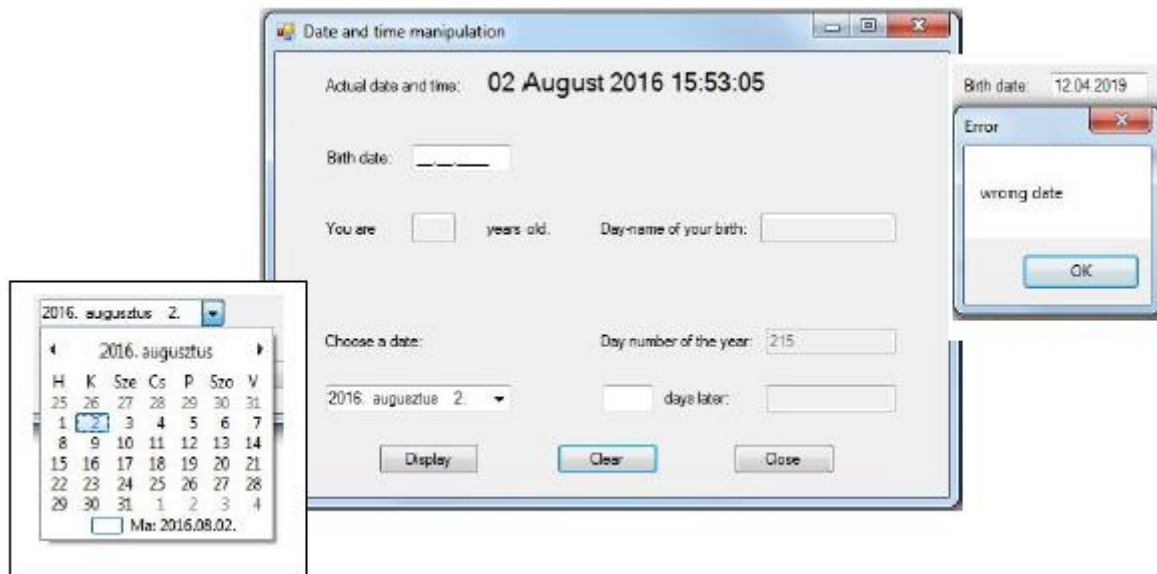


C# 7. Practice- Windows Form, String and Datetime manipulation

1. Exercise

Create an application, that works with datetime values. On the top of the form the current date and time can be seen, which is updated in every second.



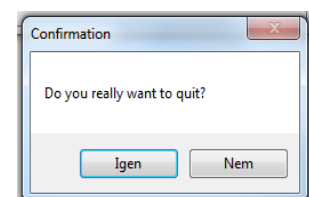
You can give your birth date in a masked textbox. Leaving this textbox or pressing Enter key, the program gives a greeting message if today is your birthday. If it is not, the program wishes a happy weekday. Give an error message if anything is wrong in date.

The effect of Display button is:
The program calculates how old are you, and gives the name of the day of your birth-date.

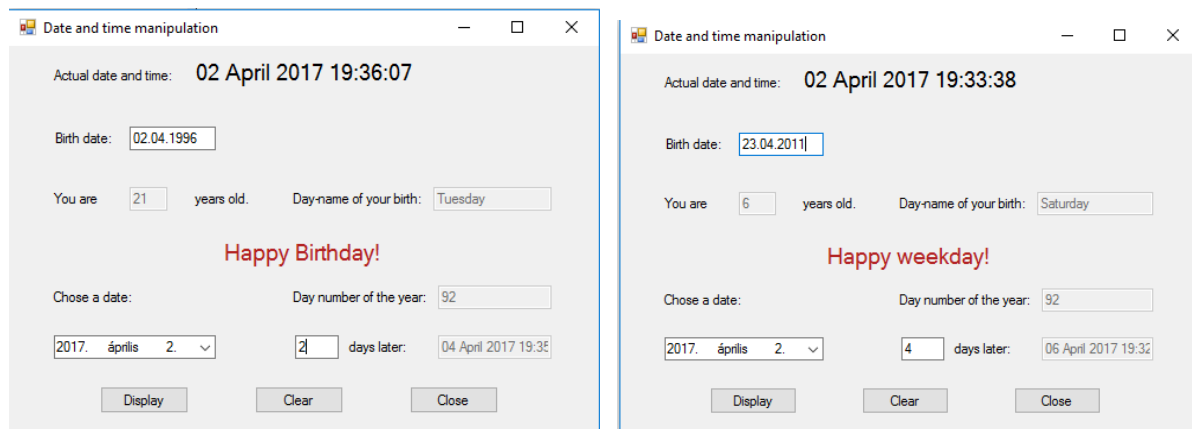
Put a `DateTimePicker` control on the form, choose a date, and the program calculates the number of days (in actual year) corresponding to the chosen date. If you write any number into the next textbox, the program gives the date being given days later (or earlier) than the chosen date.

The Clear button clears the form, the Close button closes the application.

(As you can see, the captures of `MessageBoxButtons` depend on the language of operating system. If you want to change it, please read this article: <http://www.codeproject.com/Articles/18399/Localizing-System-MessageBox>)



Results of a running:



2. Exercise - Meeting times

Ask the user to enter the **date and time** of a meeting with **two** DateTimePicker control. Configure the second DateTimePicker to show the time and can be allowed to set the hour, the minute and the second using arrow up/down.

Clear button deletes the textbox and label contents.

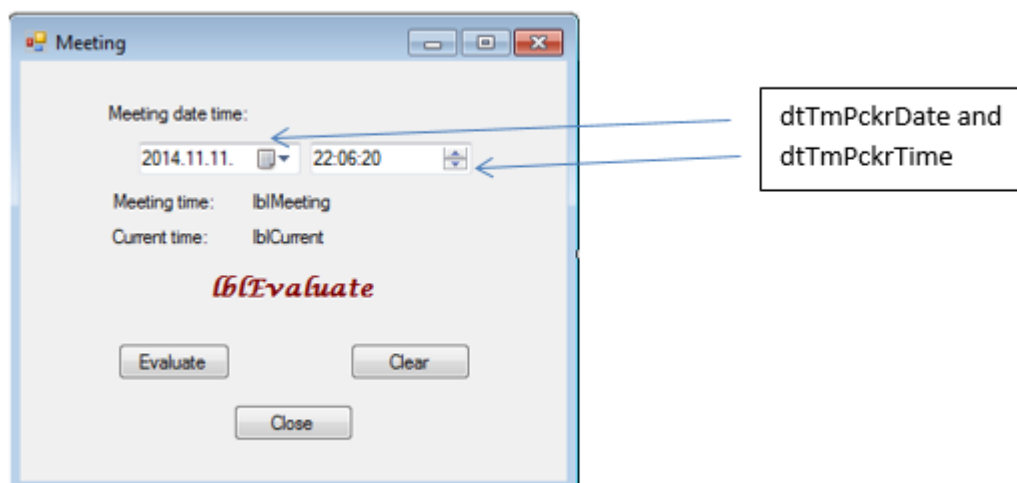
Close button closes the window.

If the **Evaluate** button is pressed the followings may happen:

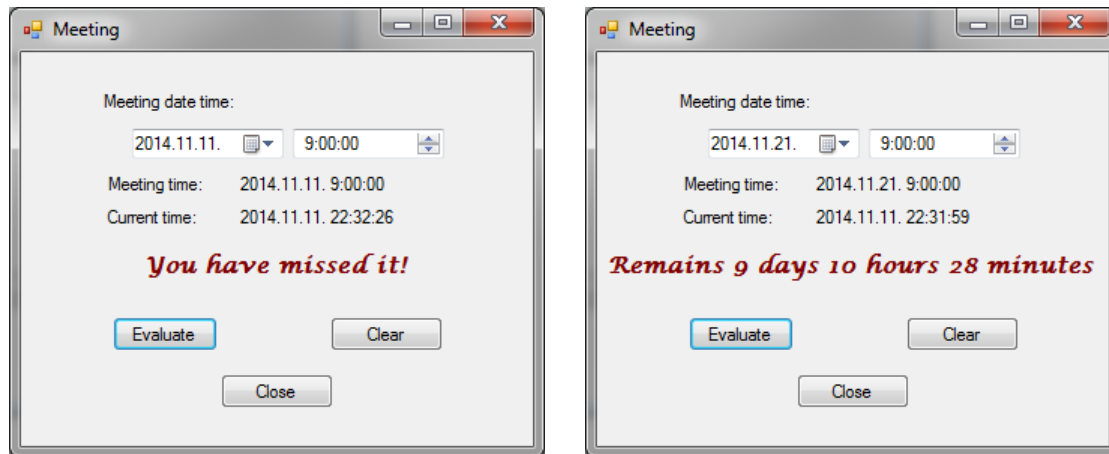
- If this is a meeting in the future, display into a label the **remaining time** (number of days, hours and minutes).
- If the meeting time is passed or it is just now then display in the label the **"You have missed it!"** text. The label will be in the middle of the form horizontally.

To control display the date and time of the meeting and the current date and time also.

HELP: In the solution assign the names shown in this figure to controls' name properties

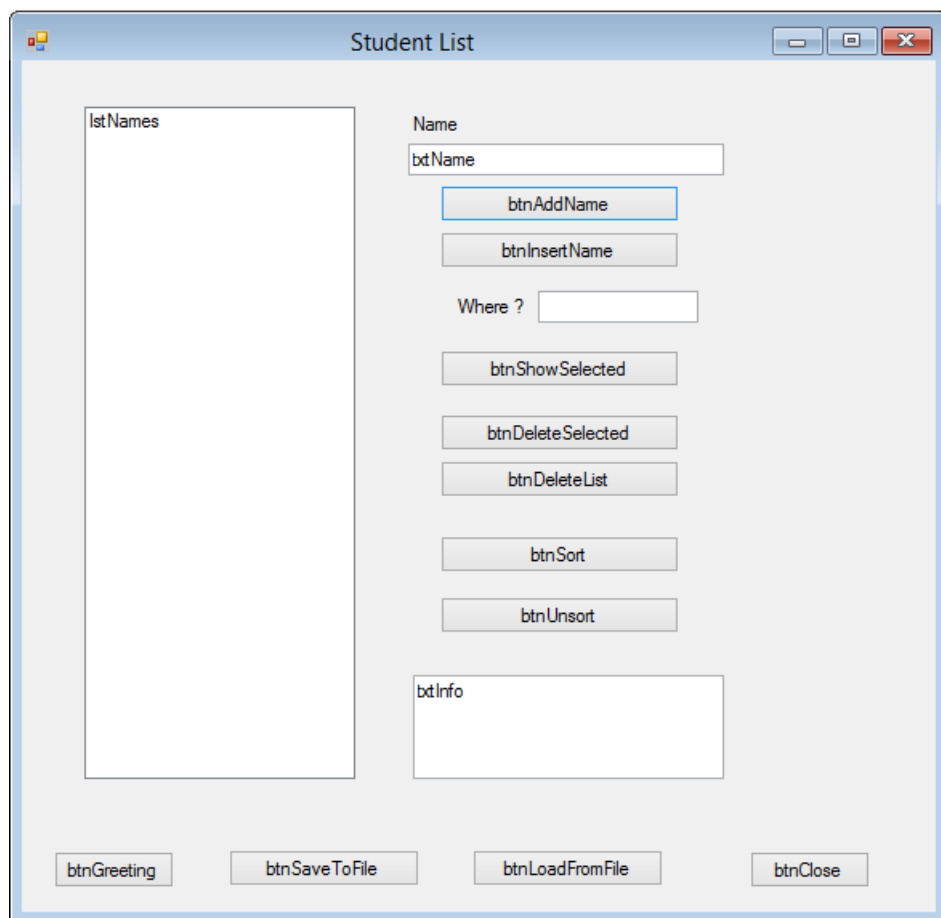


Results of two running:



3. Exercise

Create a List of Students using ListBox control. Write a program to execute the methods belongs to the different buttons. Verify the input data. Create try-catch-finally structure to control the errors! (To help the solution you can see in the form of the name properties of controls.)



4. Exercise. - The Rock Paper Scissors Game

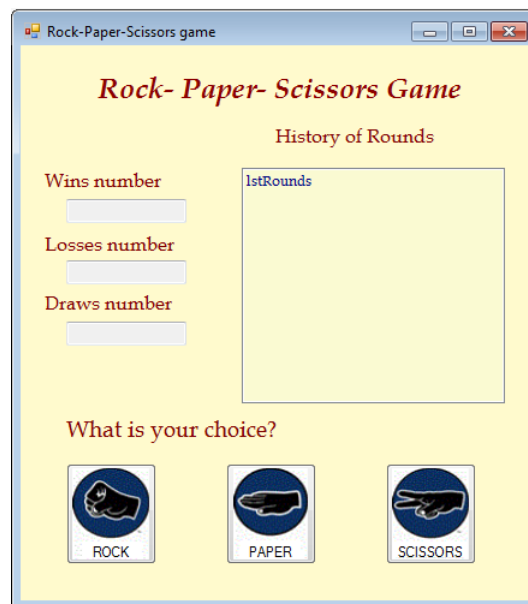
Create an application to play Rock-paper-scissors game with the computer.

The game of Rock-Paper-Scissors is normally played by two people, and there are many rounds. For each round, both players put one hand behind their backs. Then, on the count of three, both players bring out their hands very quickly. If a hand is brought out as a closed fist, that represents 'Rock'. If it is brought out with an open palm and all fingers together, that represents 'Paper'. Finally, if it is brought out with forefinger and index finger making a V-shape, then that represents 'Scissors'. If the two players bring out their hands making the same shape, the round is drawn. Otherwise, scissors beats paper (because a pair of scissors can cut paper), paper beats rock (because a sheet of paper can be wrapped around a rock) and rock beats scissors (because hitting the scissors with a rock would damage the scissors).

Played between two humans, the game is one of psychology- each player tries to guess what the other one will do. Played by a human against the computer, the strategy is definitely not based on psychology, especially if the human knows the source code of the program. Our program uses random numbers to make its moves hard to predict.

Structure of the program

The program has been divided into two classes which are stored in two different files. One class (Form1.cs) is responsible for all interaction with the user. It also keep track how many rounds have been won, lost or drawn by the human player. The other class, RPSGame.cs, actually plays the game. It selects the computer's play and, when told what human play is, reports who has won the round. In the next Figure you can see the layout of the controls on the Form.

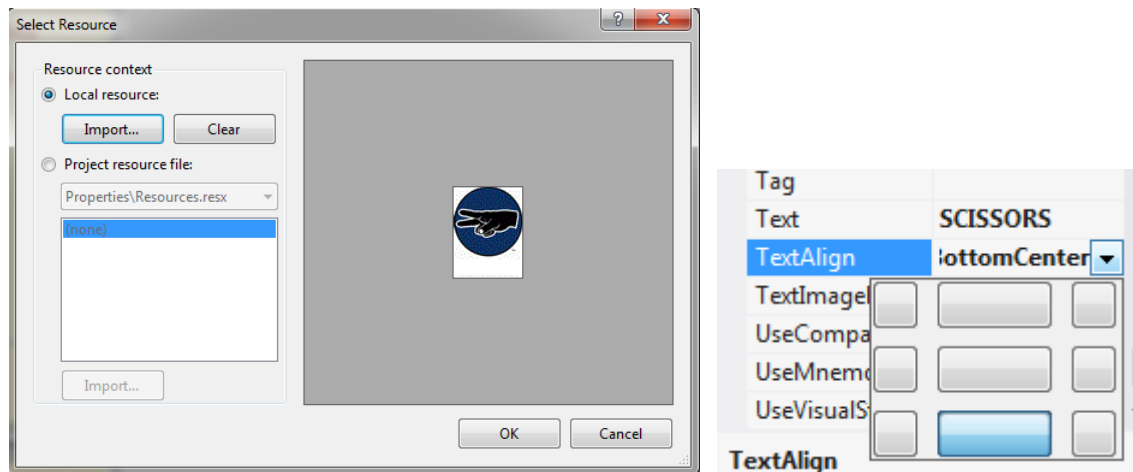


Some help to create the form:

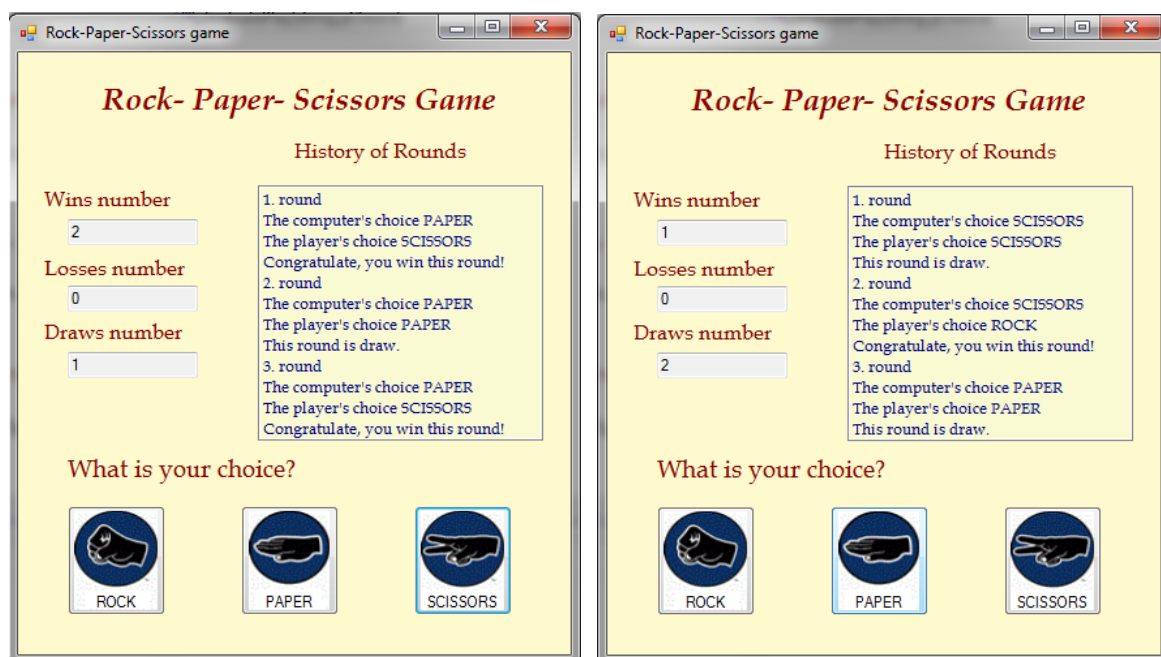
Control	Properties	Value
Form1	size	440;500 (Width; Height)
	StartPosition	CenterScreen
	BackColor	LemonChiffon (from Web page)
	Text	Rock-Paper-Scissors game
Label1	Font	Book Antiqua; 18pt; style=Bold, Italic
	ForeColor	DarkRed (from Web)
	Text	Rock-Paper-Scissors Game

Label2	Font	Book Antiqua; 12pt
	ForeColor	Maroon (from Web)
	Text	Wins number
Label3	Font	Book Antiqua; 12pt
	ForeColor	Maroon (from Web)
	Text	Losses number
Label4	Font	Book Antiqua; 12pt
	ForeColor	Maroon (from Web)
	Text	Draws number
Label5	Font	Book Antiqua; 12pt
	ForeColor	Maroon(from Web)
	Text	History of Rounds
Label6	Font	Book Antiqua; 14 pt
	ForeColor	Maroon
	Text	What is your choice?
TextBox1	Name	txtWins
	ReadOnly	True
TextBox2	Name	txtLosses
	ReadOnly	True
TextBox3	Name	txtDraws
	ReadOnly	True
ListBox1	Name	lstRounds
	Font	Book Antique; 9 pt
	ForeColor	Navy
	BackColor	LightGoldenrodYellow
	SelectionMode	None
Button1	Name	btnRock
	BackgroundImage	Rock.gif (Local see Figure)
	Text	ROCK
	TextAlign	BottomCenter
Button2	Name	btnPaper
	BackgroundImage	Paper.gif (See next Figure)
	Text	PAPER
	TextAlign	BottomCenter
Button3	Name	btnScissors
	BackgroundImage	Scissors.gif (See next Figure)
	Text	SCISSORS
	TextAlign	BottomCenter

This figure shows how we can attach the .gif files to the buttons' BackgroundImage property.



Two results of program running:



5. Exercise

Create an application to show the final result of the European Swimming Championship-2016 (London). Read the data of 400 m medley final from a file and show the names in a listBox when click the Load Data button. If one of the swimmers is selected from the list, show her number, country, result time and age in a textbox. When click the Winner button display the best (winner) time into a readonly textbox and display the name of the winner(s) in the Winners listBox.

European Swimming Championship

WOMEN 400 m Medley Final

Swimmers

lstSwimmers

Number:

Country:

Time:

Age:

Winner

lstWinners

Load Data Close

6. Exercise

Write a program that plays “guess the number” as follows: Your program chooses the number to be guessed by selecting an integer at random in the range 1–1000. The program then displays the following text in a label:

I have a number between 1 and 1000—can you guess my number?

Please enter your first guess.

A **TextBox** should be used to input the guess. As each guess is input, the background color should change to either red or blue. Red indicates that the user is getting “warmer,” and blue indicates that the user is getting “colder.” A **Label** should display either “**Too High**” or “**Too Low**” to help the user choose a number closer toward the correct answer. When the user obtains the correct answer, “**Correct!**” should be displayed. The background should become green and the **TextBox** used for input should become uneditable. Provide a **Button** that allows the user to play the game again.

When the **Button** is clicked, generate a new random number, change the background to the default color and generate the input **TextBox** to editable.