

Lab3: Windows Forms App

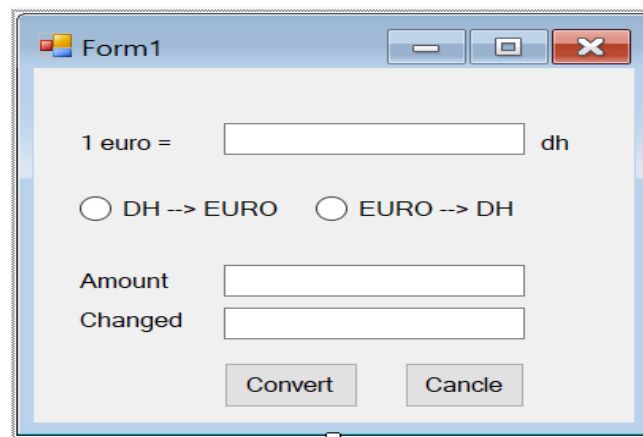
This lab will familiarize you with the different controls and creating the different WinForms applications. You can study some of controls in C# documentation or following link:

http://csharp.net-informations.com/gui/cs_forms.htm

Exercise 1 :

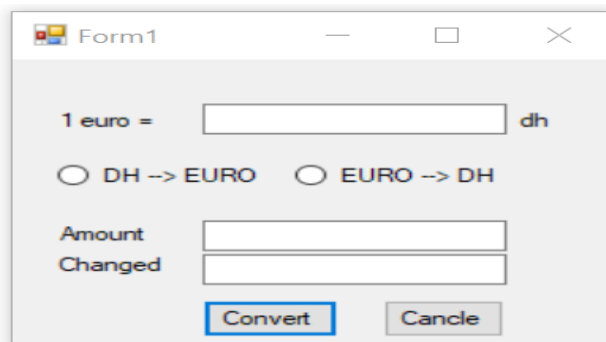
Objective: Manipulate standard controls: **RADIOBUTTON**, **BUTTON**

Create an application that allows to realize the conversion EURO / DH and DH / EURO as follows:



- Clicking on the "**Convert**" button converts the amount from DH or EURO to DH or EURO depending on the option chosen.
- Predict error cases (empty field, invalid field, operation not selected, ...)
- Clicking on the "**Cancel**" button clears all the fields.

Execution example:



Exercise 2:

Objective: Manipulate the common controls **LISTBOX**, **COMBOBOX**

Create the following C# application:

The screenshot shows a Windows application window titled "Form1". It contains the following elements:

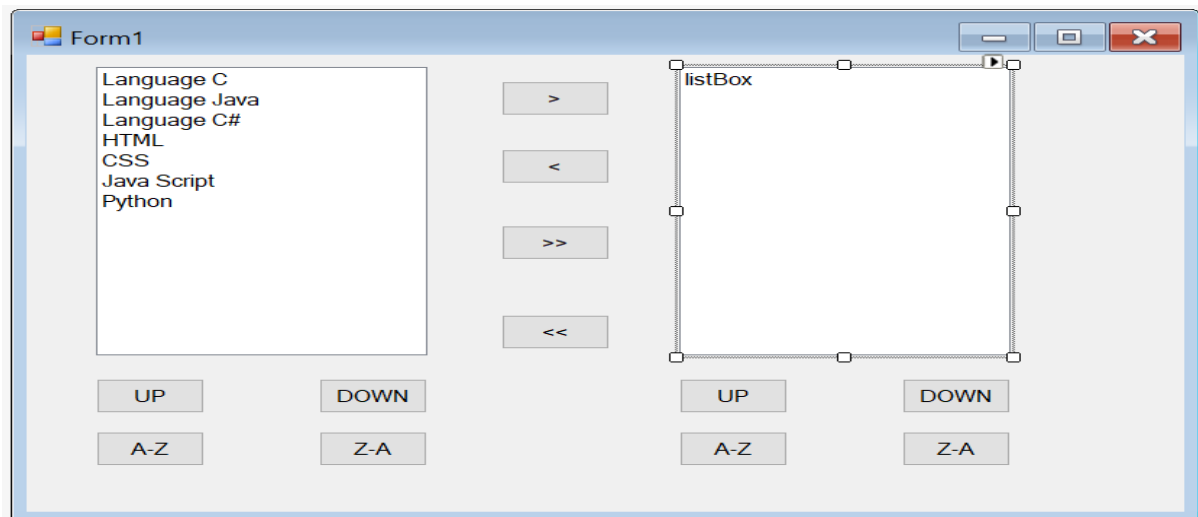
- Three standard window control buttons (minimize, maximize, close) at the top right.
- A "Base price:" label followed by a text input field.
- A "Type of ticket :" label followed by a list box containing "First Class" and "Second Class".
- A "Reduction :" label followed by a dropdown menu with a downward arrow.
- Below these, three more text input fields: "Price HT :", "TVA :", and "Price TTC :".
- The "Price TTC :" label has a small square icon to its left.
- At the bottom, three buttons: "Calculate", "Reinitialize", and "Exit".

- The **Calculate button** displays the price excluding tax, and the total price including all taxes. (TVA=20%)
1. The price of the second class equals the basic price.
 2. The price of first class equals the base price + 20% of it.
 3. The youth card allows you to have a 40% discount on the ticket price.
 4. The adult card allows you to have a 30% discount on the ticket price.
 5. The family card allows you to have a 50% discount on the ticket price.
- The **Reinitialize button** will empty all the field
 - The **Exit button** will exit the program

Exercise 3 :

Objective: Manipulate the common controls **LISTBOX**, **COMBOBOX**

Create C# application



The list on the left feeds when the form loads. The list on the right is initially empty and is powered by the two buttons '>' and '>>'.

Role of the different buttons:

> Moves the selected item from the list on the left to the list on the right.

< Moves the selected item from the list on the right to the list on the left.

>> Moves the entire list from left to right.

<< Moves the entire list from the right to the left list.

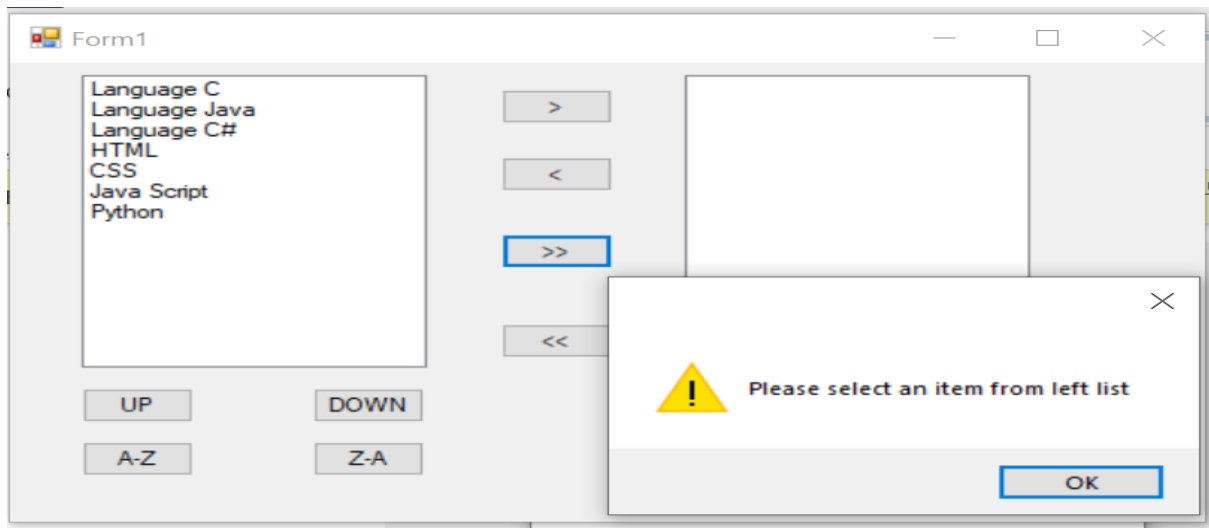
UP Moves the selected item one line up.

DOWN Moves the selected item down one row.

A-Z Sorts the corresponding list in alphabetical order.

Z-A Sorts the corresponding list in reverse order.

Execution example:



Exercise 4 :

Objective: Manipulate advanced controls **MONTHCALENDAR**, **MASKEDTEXTBOX**

Create the following C# application:

The screenshot shows a Windows Form titled 'Form1' designed for customer registration. It includes the following controls:

- Name and Family:** A text box for entering the customer's name and family name.
- Registering date:** A date picker control showing 'January 2022'. The date '23' is selected. Below the date picker, a text box displays 'Today: 23/01/2022'.
- Address :** A text box for entering the customer's address.
- Tel** (Telephone): A masked text box for entering a 10-digit phone number, with a format of '____-____'.
- listBox1** and **listBox2:** Two empty list boxes for displaying data.
- Buttons:** Three buttons labeled 'Cancel', 'Add', and 'Clear' are located at the bottom right of the form.

- Clicking on the **"Add"** button allows you to add a customer to the list by checking the following constraints:

Fields should not be empty. / The registration date must be less than or equal to the current date /The phone number must be valid (10 digits)/ Request confirmation before adding the client.

- Clicking on the "**Cancel**" button clears the fields.
- Clicking on the "**Clear**" button allows you to empty the list of customers after confirmation.

Note:

- Use the MASK property of the **MASKEDTEXTBOX** control to adjust the phone number input mask.

Execution example:

Form1

Name and Family: Thomas

Registering date: January 2022

Mon	Tue	Wed	Thu	Fri	Sat	Sun
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Today: 23/01/2022

Address : 96400

Tel 00 22 44 55 88

1

Name and Family: Thomas
Registering Date: 23/01/2022
Address: 96400
Tel: 00 22 44 55 88

Cancel Add Clear

Exercise 5 :

Objective: Manipulate advanced **TIMER**, **TRACKBAR** controls

Create the following application:

Form1

☐ R ☐ V ☐ B

Play Stop

Fréquence 0MS 1S

The purpose of the application is to turn on colored lamps (check the **RADIOBUTTON**) at the rate of the frequency set in the **TRACKBAR** control.

- When the "**Play**" button is clicked, the lamps start to turn on and off automatically and in order (Red, Green, Blue) according to the frequency of the setting bar.
- When clicking on the "**Stop**" button, stop the action and reset the form.
- Enable and disable the various controls in the application so that they become accessible only when they can be used.

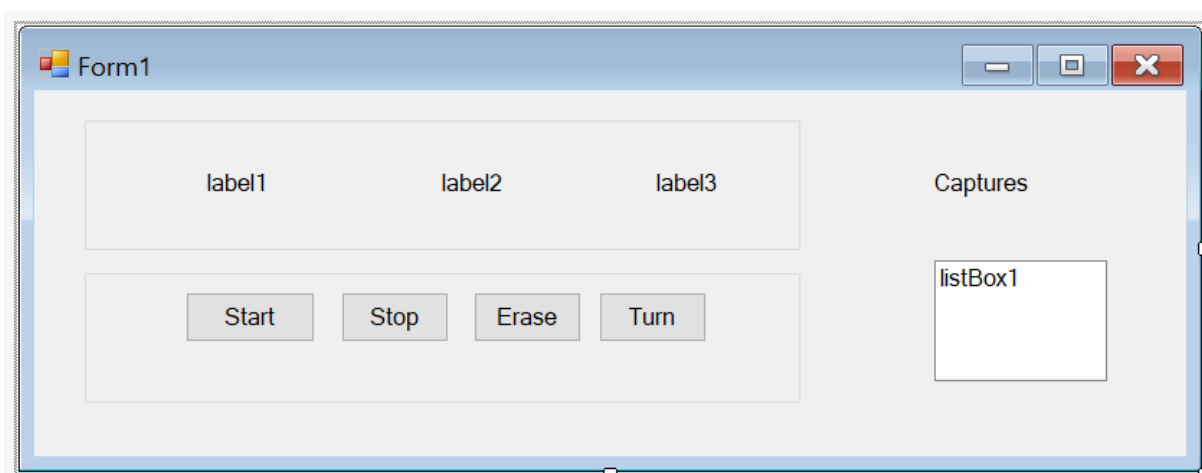
Execution example:



Exercise 6 :

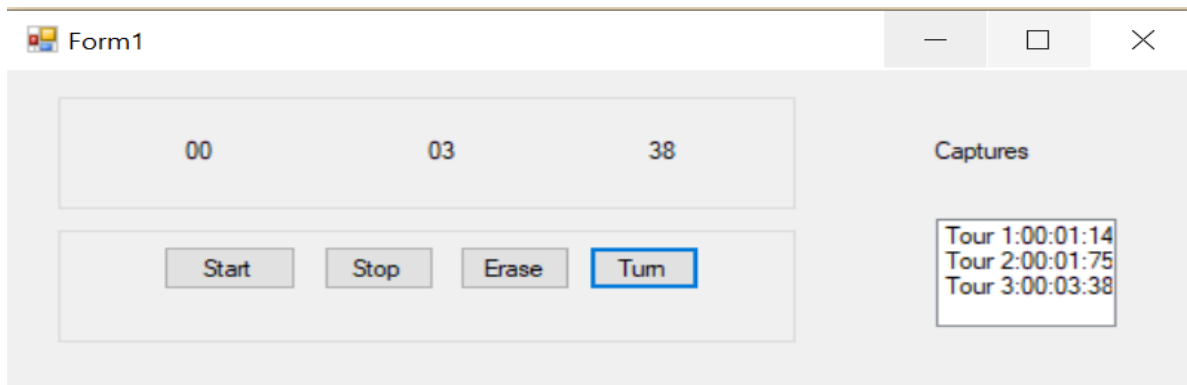
Objective: Manipulate **TIMER** controls

Create the following C# "Stopwatch" application:



- The "Start" button is used to start the stopwatch.
- The "Stop" button allows you to pause the stopwatch.
- The "Erase" button resets the stopwatch and clears the list.
- The "Turn" button is used to capture the displayed value of the stopwatch.

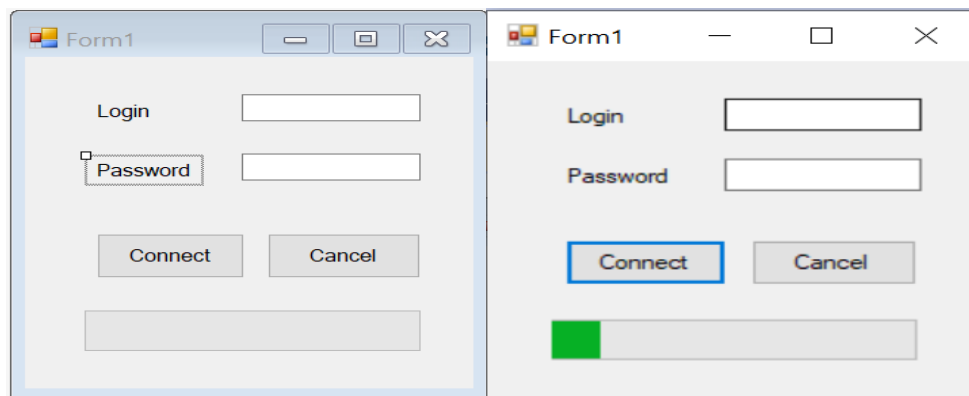
- **Execution example:**



Exercise 7 :

Objective: Manipulate advanced **TIMER**, **PROGRESSBAR** controls

Create the following C# application:



The user must enter their login and password in 30 seconds. If the user enters an incorrect code, a message box shows him "Wrong code", if he does not enter the information correctly in 30 seconds, a message box displays "Time is over" and the application stops. If he enters correct information a message box displays him "Welcome!".

The progress bar tells the user the level of time remaining.

Exercise 8 :

Objective: Work on different type of events, sender,...

Create a calculator with all the possible functionalities such as backspace, on/off, etc.

- Try to control your application by keyboard events. Your program should work by both keyboard and clicking on controls.
 - Use sender in the possible parts of the code for example operators and numbers.
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