Faculty of Computers, Informatics and Microelectronics

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WINDOWS PROGRAMMING

Laboratory work #2

Advanced Form Elements. Child Windows. Basics of Working With Keyboard.

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Laboratory work #1

1 Purpose of the laboratory

Gain knowledge about basics of event-driven programming, understanding of window's class and basic possibilities of Win32 API. As well as using advanced form elements like scrolls, listboxes and implementing keyboard hotkeys.

2 Laboratory Work Requirements

– **Basic Level (grade 5 - 6) you should be able to:**

a) Create a Windows application what will display a dialog box on some event (ex. on clicking some button)

b) Add a system menu to your application with at least 3 items (add actions to that items)

c) Hook keyboard input. Add 2 custom events for 2 different keyboard combinations (ex. change window background on ctrl+space)

– **Normal Level (grade 7 - 8) you should be able to:**

a) Realize the tasks from *Basic Level*.

b) Add a scroll bar that will change any visible parameter of any other element (color of a text) OR other 2 scroll bars that will manage main window size or position

– **Advanced Level (grade 9 - 10) you should be able to:**

a) Realize the tasks from *Normal Level*.

b) Customize your application by adding an icon and using different cursor in application

c) Add a listbox and attach some events when any element is accessed (clicked)

3 Laboratory work implementation

3.1 Tasks and Points

The following tasks have been implemented:

1.An Edit Box for adding text;

2.An List Box for output text- at double clicking an item, a message box is displayed.

3.Two scroll bars used to change the width and the height of the window;

4.One button to add an item to the ListBox;

5.One button to remove an item from the ListBox;

6.One button to clear all the items from the ListBox;

7.Three scroll bars located in the dialog box responsible for the background color;

8.Four hotkeys for moving the window on the screen:
- Ctrl+F1- Move window right
- Ctrl+F2- Move window left
- Ctrl+F3- Move window down
- Ctrl+F4- Move window up;

9.A personalized icon for my application;

10.A personalized cursor for my application;

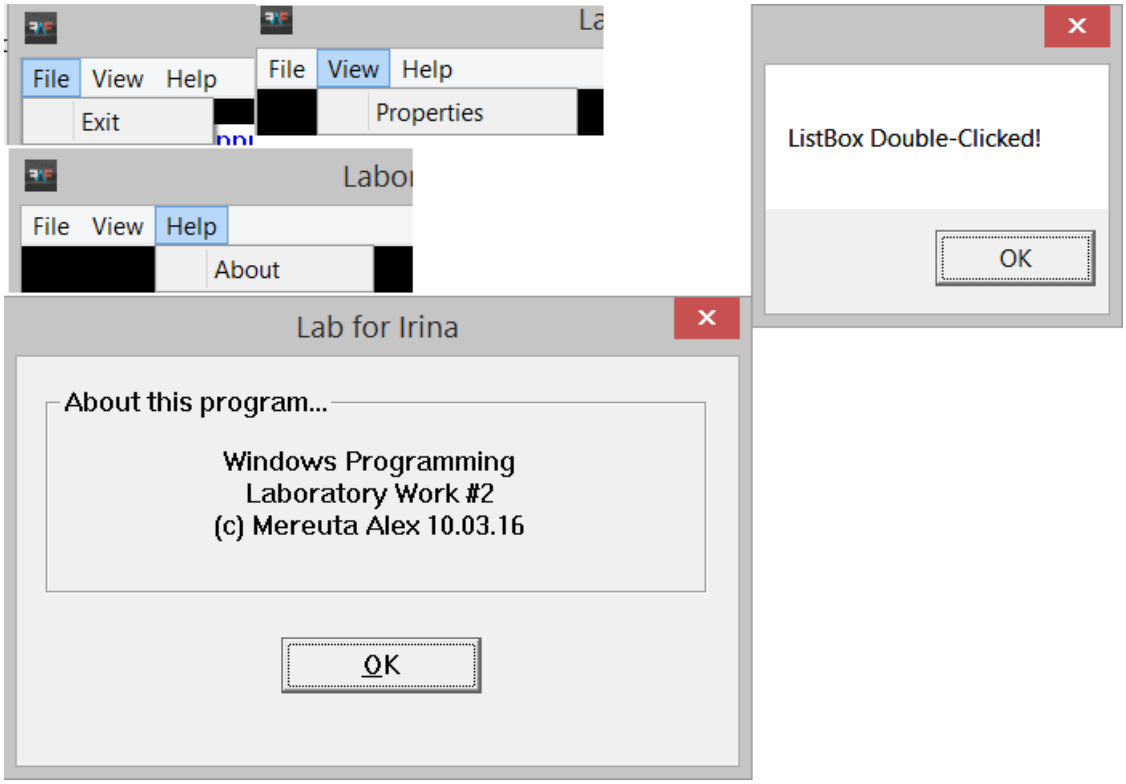
11.A system menu with 3 items: File, View, Help;

3.2 Laboratory work analysis

Link to my repo:
https://github.com/TUM-FAF/FAF-141-Mereuta-Alex
A read me file has been added and it quickly explains what I have done. The full description is done above.

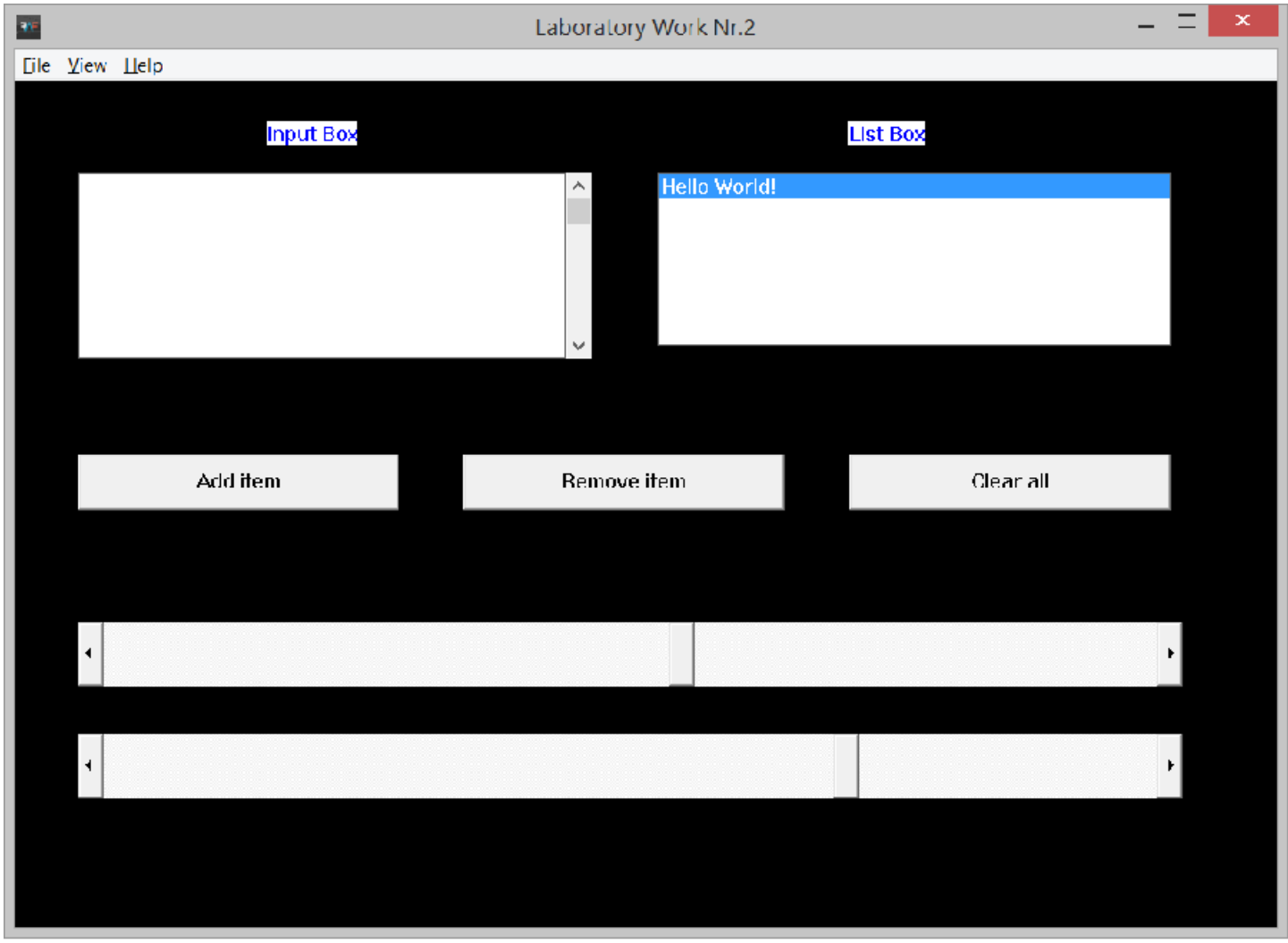
3.3 Prove your work with screens

Here we have the system menu with 3 items; the about section and the pop-up that comes up when you double click in the ListBox:



Here we have me adding an item (three to be more exact), then removing it and then clearing the other two.

Here we have our window maximized using our scroll bars.



Unfortunately other implementations like the moving of the window with the hot keys can't be seen through a photo. Also, the Icon can be seen in most photos and the cursor can be seen in none because windows removes it from screen shots.

Conclusions

Doing this laboratory work helped me discover some new features of WP and apply them into my own program. I've learned how to work with different types of dialog boxes and how to create a system menu. One of the most difficult things that I had to do was working with the scroll bars. Also adding the 4 different keyboard combinations for the 4 custom events was a little challenging.

References

1 Aldebran Robotics, *official page*, www.aldebaran.com/en

2 Timo Ojala, *Multiresolution gray-scale and rotation invariant texture classification with local binary patterns*, 2002

3 Biometric, www.biometricupdate.com/201501/history-of-biometrics