

FACULTY OF COMPUTERS, INFORMATICS AND MICROELECTRONICS  
TECHNICAL UNIVERSITY OF MOLDOVA  
EVENT DRIVEN PROGRAMMING  
LABORATORY WORK NR.2

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**ADVANCED FORM ELEMENTS. CHILD  
WINDOWS. BASICS OF WORKING WITH  
KEYBOARD.**

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## **MANDATORY OBJECTIVES**

- Display a dialog box on some event (ex. on clicking some button)
- Add a system menu to your application with at least 3 items (add actions to that items)
- Add a scroll bar that will change any visible parameter of any other element (color of a text)
- Hook keyboard input. Add 2 custom events for 2 different keyboard combinations (ex. change window background on ctrl+space)

## **OBJECTIVES WITH POINTS**

- Add a listbox and attach some events when any element is accessed (clicked) (2 pt)
- Add 2 scroll bars that will manage main window size or position (1 pt)
- Customize your application by adding an icon and using different cursor in application (1 pt)
- Use a scroll bar to scroll through application working space. Scroll should appear only when necessary (eg. when window width is smaller than 300px) (1 pt)

## IMPLEMENTATION

Before starting this project I have read some Chapters from Charles Pretzold Book about Windows Programming, like: Scroll bars , Multiple windows, Creating Menu. Also , I have studied about instances and how implement in code. Another important side that I learned is obtained handle variable for some content from window.

So , I started with opening the window with WinMain that send 2 messages ShowWindow() and UpdateWindow() and WndProc() that contains of windows messages to obtained handle for windows.

For elements from my window I have function OwnerControl() that help me to create the buttons , and text boxes. Show Dream button will display the content that was write in the text boxes in one list. According to the tasks I must have some actions(events) for this list , so ,I have the Remove button that remove the selected element from the list. This all buttons and text boxes have ID , that means the easiest way to address to element from the application and perform some changes or set properties.

In my application I also have a Menu that structure my application more clear for User. Here I have items and some events:

- F1 - quit the application.
- F2 - will show the DialogBox.
- F3 - will change the font from application title.
- New - will show a MessageBox.

According to another task I have the Scroll bars to move the position of window or get another size for the window.

For changing the background color I have the Scroll Bar that is designed on main window and another for more great colors another generated window Color Scroll. This is great , because has the immediately action , I mean scrolling changes colors, you do not have to scroll and wait for the color to be generated.

For customizing my application I added Icon with LoadImage() function.

## CONCLUSION

In this laboratory work I got more skills operating with windows programming techniques and functions. I learned about functions to create Menu , scroll bars and another advanced features of buttons. An application-defined function that processes messages sent to a window. The WNDPROC type defines a pointer to this callback function. So , through this functions I have sent the messages to operate with elements from my application.

I have encountered difficulties in working with multiple windows and instances because the derived window has to handle the instance from main window. But, I found this laboratory work very useful for increase the skills in Windows Programming.

I had implemented all tasks in this laboratory work application.

## BIBLIOGRAPHY

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