Faculty of Computers, Informatics and Microelectronics

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WINDOWS PROGRAMMING

Laboratory work #1

Window. Basic window's form elements

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1 Purpose of the laboratory

Gain knowledge about basics of event-driven programming, understanding of window's class and basic possibilities of Win32 API. Also she will try to understand and process OS messages.

2 Laboratory Work Requirements

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

a) Create a Windows application

b) In the middle of the window should be present the following text: "Done with Pride and Prejudice by student name". Replace student name with your name.

c) On windows resize, text should reflow and be in window's middle (vertically and horizontally)

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

a) Realize the tasks from *Basic Level*.

b) Add 2 buttons to window: one with default styles, one with custom styles (size, background, text color, font family/size)

c) Add 2 text elements to window: one with default styles, one with custom styles (size, background, text color, font family/size)

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

a) Realize the tasks from *Normal Level*.

b) Make elements to interact or change other elements (2 different interactions) (ex. on button click, change text element color or position)

c) Change behavior of different window actions (at least 3). For ex.: on clicking close button, move window to a random location on display working space

3 Laboratory work implementation

3.1 Tasks and Points

a) Created a Windows application

b) In the middle of the window inserted the following text: "Done with Pride and Prejudice by Spatari Stanislav".

c) On windows resize, text reflows and it stays in the middle of the window(vertically and horizontally)

d) Added 2 buttons to window: one with default styles, one with custom styles (background, text color)

e) Added 2 text elements to window: one with default styles, one with custom styles (background, text color, font, size)

f) Implemented actions when the button Change Title is clicked, the window title changes, at the same time if we click the change basic message the message from the middle of the screen changes.

g) Also changed the behaviour of all 3 top window buttons. Minimize button now has custom handle in WM_SYSCOMMAND, and instead of standard minimization now it prompts a messageBox that asks if we want to close the program, by pressing ok the program will close and window will be destroyed. Maximize button on the other hand moves the our window to another place on the screen and Close button just prompts a simple message telling telling that "This is not a quit button".

3.2 Laboratory work analysis

Link to my repo: `https://github.com/sspatari/WP`

A read me file has been added and it quickly explains what was done.

Description of every button and it's actions: 1. Minimize button displays a message box that asks if we want to close the program, by pressing ok, the program will close and the window will be destroyed.

2. Maximization button moves the window to another place on the display by randomly generating the coordinated based on the display size.

3. Close button prompts a simple message box that tells that this button is not a quit one.

4. The button that says change window title will chage the name of the window when clicked to a predifined string.

5. THe button that says change basic message will change the text that is written in the middle of the window.

We can drag the window by the title bar and resize it. The basic message will remain in the middle of the screen.

3.3 Prove your work with screens

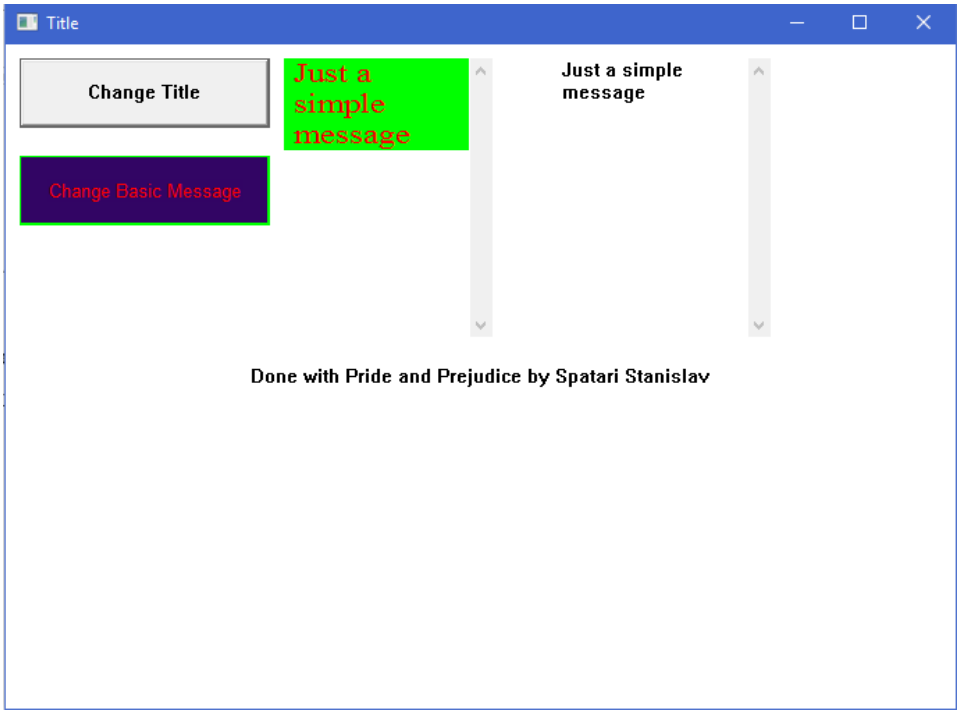

Figure 3.1– Window before pressing buttons

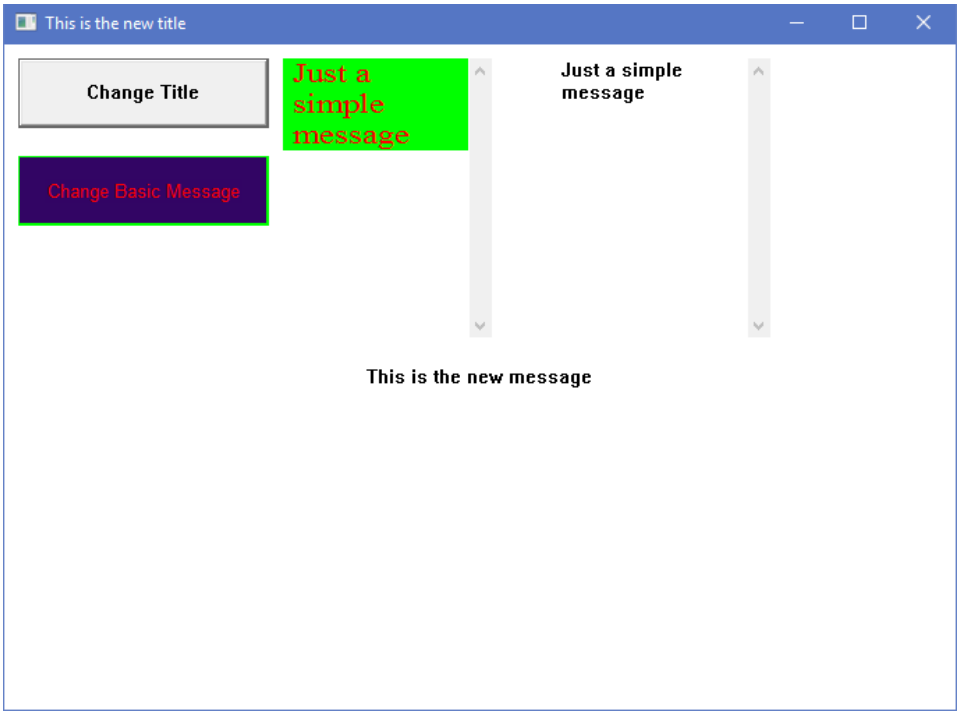

Figure 3.2– Window before pressing buttons

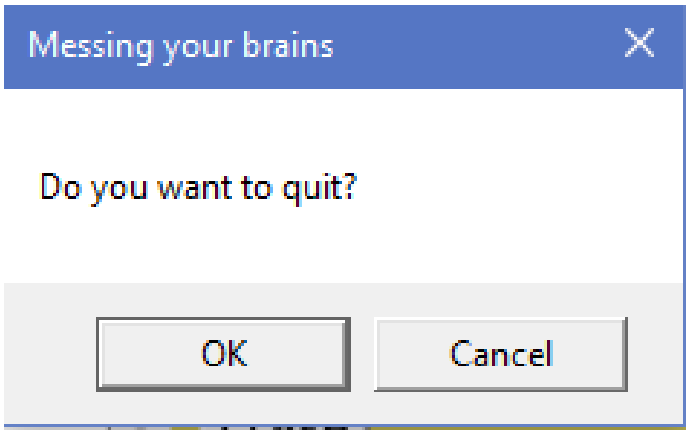

Figure 3.3– Window before pressing buttons

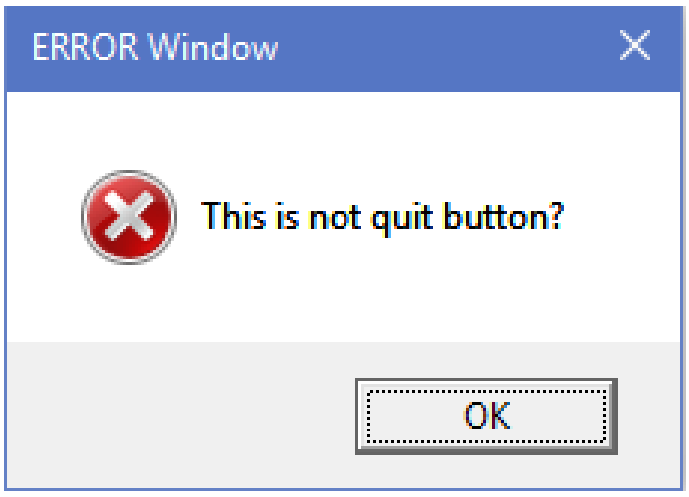

Figure 3.4– Window before pressing buttons

Conclusions

I learned how the elements of the window are created, how their behavior can be changed. I worked with messages, understood how the elements and their actions are interconnected. This concepts can be applied not only in windows programming, but also in another systems of programming.

References

1 *official page*, `http://msdn.microsoft.com`

2 Charlez Petzold, *Programming in Windows 5th edition*,