

FACULTY OF COMPUTERS, INFORMATICS AND MICROELECTRONICS

TECHNICAL UNIVERSITY OF MOLDOVA

WINDOWS PROGRAMMING

LABORATORY WORK #1

Window. Basic window's form elements

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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. 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

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

- a) Created a Window's application
- b) Presented in the middle of the window the text "Done with Pride and Prejudice by student name". Replaced student name with my name.
- c) On windows resize, text reflow and be in window's middle (vertically and horizontally)

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

- a) Realized the tasks from *Basic Level*.
- b) Added a button on the window with default styles.
- c) Added a button on the window with custom size.
- d) Added 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) Realized the tasks from *Normal Level*.
- b) I got the text from one text element on button click and placed into another
- c) Made 2 buttons disappeared on a button click
- d) The window took different colors on re-size
- e) The window took the blue color on moving it over desktop
- f) The window didn't close on pressing the close button , it threw a info alert where it's described how to close it.

3.2 Laboratory work analysis

Add link to your repository. Create a README.md file for each laboratory work you submit. It should include the tasks that you had been implemented. Explain the features that you had been added to your window.

3.3 Prove your work with screens

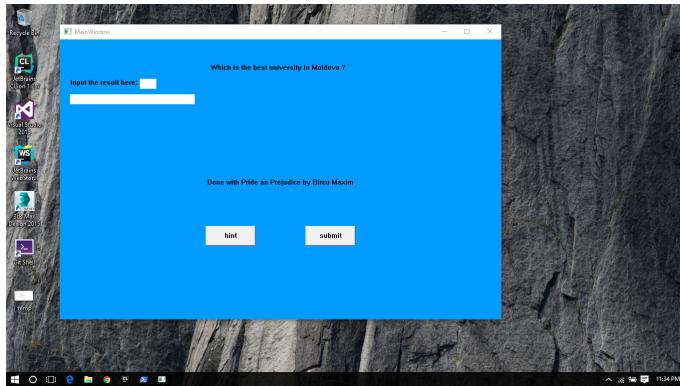


Figure 3.1 – Window is open

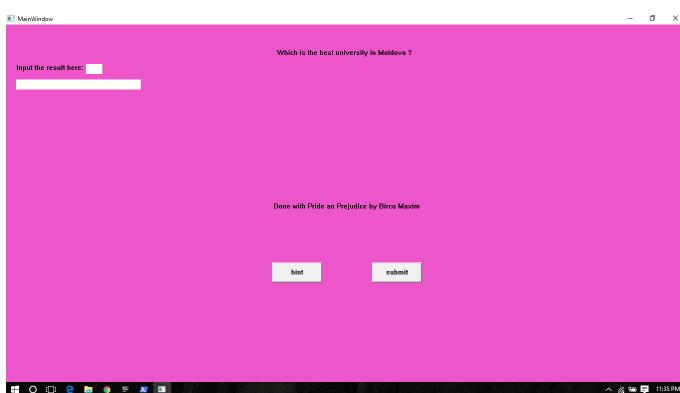


Figure 3.2 – Full screen window

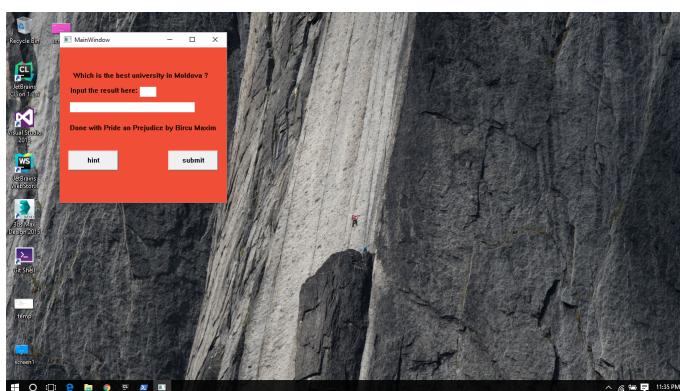


Figure 3.3 – Min size window

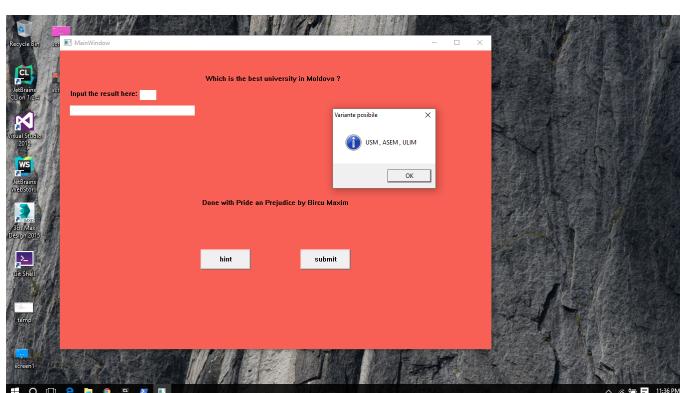


Figure 3.4 – Message with hints

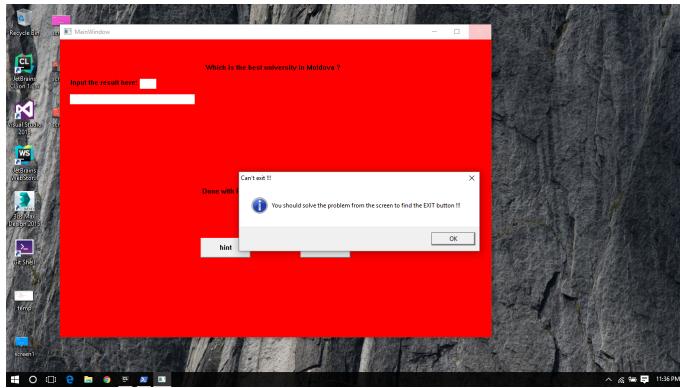


Figure 3.5 – Message can't close window

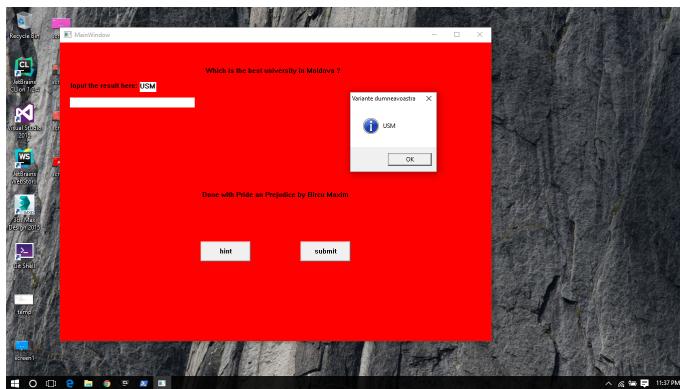


Figure 3.6 – Trying to chose a solution

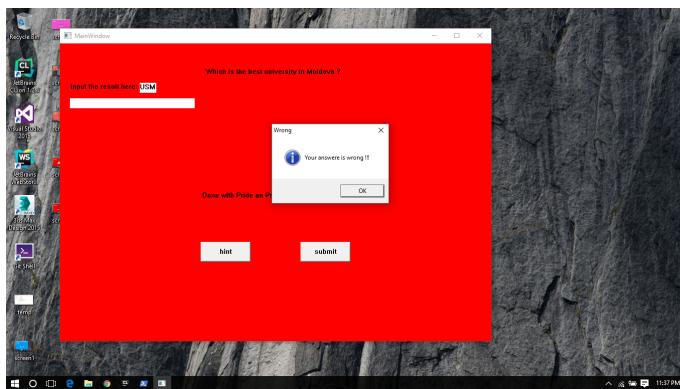


Figure 3.7 – The solution is not correct

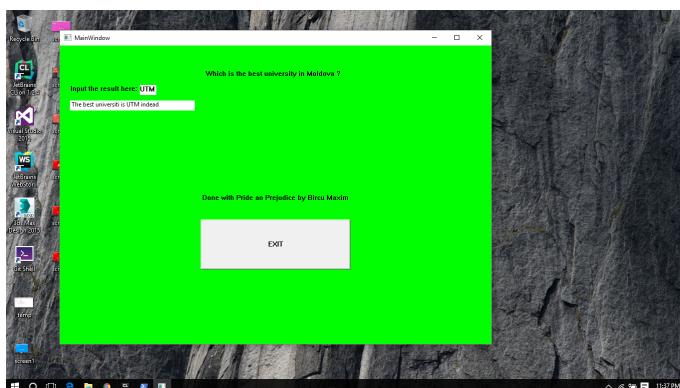


Figure 3.8 – The solution is correct and window can be close

Conclusions

Win32 API is Microsoft's core set of application programming interfaces (APIs) available in the Microsoft Windows operating systems. It's not to hard to understand and use this API for developing some GUIS based applications. Variables and function names are a little bit strange for me but i guess that using them much more times I will memorize them. Another thing that I disliked in this technology is the bad organized structure of the default components, I think that it's too hard to use OOP paradigm while you are developing a win32 app. Therefore for my program , first of all I developed a core , or a small framework that help to create easier window objects and manage them.

References

- 1 Aldebaran 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