

FACULTY OF COMPUTERS, INFORMATICS AND MICROELECTRONICS

TECHNICAL UNIVERSITY OF MOLDOVA

## WINDOWS PROGRAMMING

LABORATORY WORK #2

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**Advanced Form Elements. Child Windowses.  
Basics of Working With Keyboard.**

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## **Laboratory work #1**

### **1 Purpose of the laboratory**

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

### **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

- a) Created a menu linked to the window. Items of the menu are added in the function **AddMenus**. The menu contains 2 main items that are:

- **File.**
- **About.**

Where **File** contains:

- **Don't press it.**
- **Exit**

And **About.:**

- **About.**

When **Don't press it** is pressed, we change the sound of windows to 100% and unmute the audio (works only for windows vista and later versions) using function **ChangeVolume** and plays a sound.

When **Exit** is pressed, we exit the program.

When **About** is pressed, we create a messageBox where we write an message to the user.

- b) Added 2 hotkeys:

- **CTRL + D**
- **SHIFT + SPACE**

**CTRL + D** Stops the music playing after using the **Don't press it** option.

**SHIFT + SPACE** Inverts a boolean variable that is changing what background is used currently.

- c) Added a scrollbar on the screen that is changing the color of the text that is written on the screen.
- d) Added a new icon to the resources and assigned it as the current icon of the application.
- e) Changed the default cursor to hand cursor.
- f) Added a listbox that changes the text on the screen when an option is chosen and button **Change** is pressed.

## 3.2 Laboratory work analysis

**Clone with HTTPS :**

`https://github.com/dcalance/WP.git`

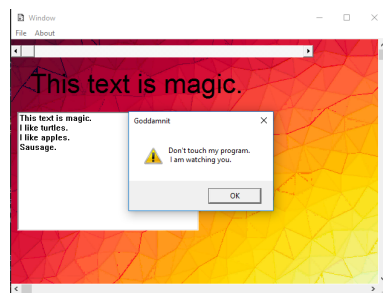
**Clone with SSH :**

`git@github.com:dcalance/WP.git`

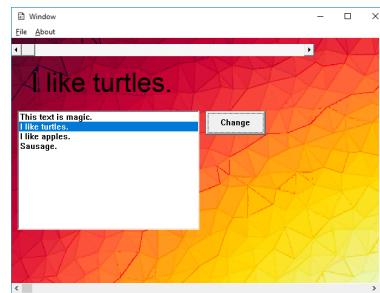
**Repository Link :**

`https://github.com/dcalance/WP`

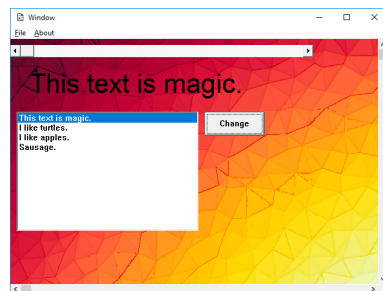
### 3.3 Prove your work with screens



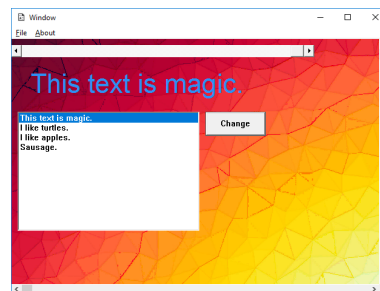
(a) Pressing About option



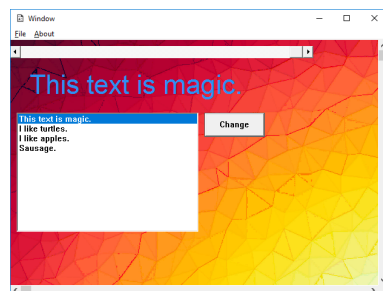
(b) Changing the text using list-box



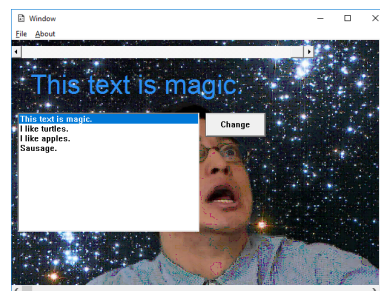
(a) Before using the scrollbar



(b) After using the scrollbar



(a) Before pressing SHIFT + SPACE



(b) After pressing SHIFT + SPACE

## Conclusions

- We learned how to create different elements like menus, listboxes, scrollbars.
- We learned how to add hotkeys and how to handle them.
- We learned how to add and use resources.
- We learned why nobody uses winapi nowadays and why we shouldn't use it if we want to make readable big applications.

## References

- 1 Programming Windows by Charlez Petzold, 5th edition
- 2 Window style codes, [http://msdn.microsoft.com/en-us/library/windows/desktop/ms632600\(v=vs.85\\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/ms632600(v=vs.85\).aspx)
- 3 Edit Control styles, [http://msdn.microsoft.com/en-us/library/windows/desktop/bb775464\(v=vs.85\\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/bb775464(v=vs.85\).aspx)