



Course introduction

Windows Programming

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Lecturer information



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- ❑ What I like
 - Windows programming
 - Android & iOS
 - Full stack web development

? Questions you may have

- ☐ Why should I attend this course?
- ☐ What do I want from this course?
- ☐ What is the best strategy in this course?

Let's have a plan!



Course's objectives

After finishing the course, the students can

- ❑ **Understand** **characteristics** of Windows applications
- ❑ **Create** **simple** Windows applications in **OOP**
 - Using common controls
 - Supporting multithread
- ❑ **Use** unique techniques in Windows
 - **DLL**
 - **Hook**
 - **Subclassing**



Weapon of choice



Pure Win32 API



UWP

Visual Studio 2017 Community



Schedule

1. 11.09: Course info, message loop, app structure
 - Callback & Function pointer
 - Button, Label, Textbox, Image, MessageBox
 - Simple coding convention (Hungarian notation) => Activity
 - Lab01 – Environment, basic operations
 - Lab02 – Enough Git to be dangerous
 - Lab03 – Label TextBox Button Image
2. 18.09: Windows styles, visual styles, String manipulation
Reverse engineering
 - Lab04 – Multiple windows & data passing
 - Lab05 – OOP - Doxygen
3. Timer, CheckBox, RadioButton, Groupbox, Status
 - Resources: Icon, Menu, Dialog, String
4. 25.09: ComboBox, ListBox, TreeView, ListView
5. 02.10: File system, Ribbon, TotalCommander



Schedule 2

6. 09.10: Dialog & Common dialog Keyboard & Mouse, Clipboard
 - Ini, Registry, Text file
7. 16.10: GDI, GDIPlus Paint project
8. 23.10: DLL
9. 30.10: Hook, Subclass (menu)
10. ?

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Schedule 2

- 11. 06.11: Multithread – Sorting object?
- 12. 13.11: Memory, multimedia – Audio file player
- 13. 27.11: Basic C#
- 14. 04.12: WPF, MVVM
- 15. 11.12: LINQ, Entity, delegate & event
- 16. 18.12: 3 layer (plugin architecture)



Grading

- ☐ In-class activities: 10%
- ☐ Tutorial: 15%
- ☐ Projects: 75%

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Projects

- ❑ * Brainstorming projects
- ❑ * File system project
 - C++ Normal functions -> C++ Shell function
 - C# Universal
- ❑ * Paint project
 - C++ GDI -> C++ GDI+ -> C# UWP
- ❑ Quick note / Quick launch / Keylogger / Multi window
- ❑ Multithread



Deliverables

- ☐ source code (cleaned)
- ☐ Release (exe)
- ☐ Readme.md
- ☐ youtube link

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Materials for learning

- ❑ **Windows programming**, Charles Petzolt, 2002
- ❑ **C++ Windows programming**, 2016
- ❑ **Visual C++ Windows Shell programming**, 1998

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- ❑ **Windows API Index**

- [https://msdn.microsoft.com/en-us/library/windows/desktop/ff818516\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/ff818516(v=vs.85).aspx)

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Policy

- ❑ Similar submission: 0 both
 - $\geq 40\%$ with **JPlag**
 - This entropy may be higher
 - Exception: Teacher samples code or popular solution on internet
 - Even if just rename variables or split funcs (let's see demo)
- ❑ Late submission:
 - **72h** hour total throughout the course
 - All links accept late submission
- ❑ **Core problem must be solved by yourself**
 - Can used other's source code if it does not solve the core problem for you
 - Must put reference to the code you use in report

Facebook group

☐ Monitor: Find & add friend this user

- <https://www.facebook.com/profile.php?id=100007515497201>



☐ Private group, only monitor can add members

Question?

