F21SC Industrial Programming: Course Summary

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Semester 1 2014/15

What we covered

Advanced programming techniques in

- general purpose languages (C#)
- scripting languages (Python, shell)

Software development on different platforms:

- C# and Visual Studio on Windows
- Python and IDLE on Linux

Skills gained from this course

- Composing bigger applications out of existing components
- Rapid prototyping
- Resource conscious programming
- GUI programming
- Concurrency

General purpose languages

Recall the main characteristics of general purpose languages:

- Build algorithms and data structures from scratch
- Use strong typing to help manage complexity of large pieces of software
- Focus is often on speed of execution
- Easy access to low-level operating system is crucial
- Examples: C, C#

Scripting Languages

Recall the main characteristics of scripting languages:

- Their main purpose is to glue software together
- Focus is on rapid-prototyping
- Safety aspects are of a lesser concern
- Thus, scripting languages are often type-less
- Modern scripting languages incorporate features of general purpose programming languages, especially object-oriented (o-o) features, higher-order functions
- Easier to learn for casual programming
- Examples: sh, php, python, perl, ruby, lua

Take away messsages

Take away messsages from this course

- Pick your programming language and libraries carefully
- Be aware of new developments in programming languages research at large
- Use advanced language features for more concise code
- Have Fun: hacking is fun!