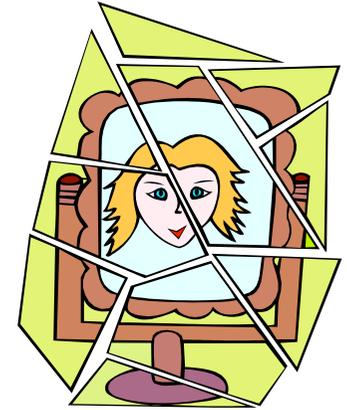


Taking efficiency one step further – F#

Oliver Sturm – DevExpress
olivers@devexpress.com
oliver@sturmnet.org



Who's that Oliver Sturm guy, anyway?



I am

Interested in programming languages,
databases and a whole bunch of other things

Microsoft MVP for C#

I do

Work for Developer Express as a Technical Evangelist
and Lead Program Manager

Blog at <http://www.sturmnet.org/blog>

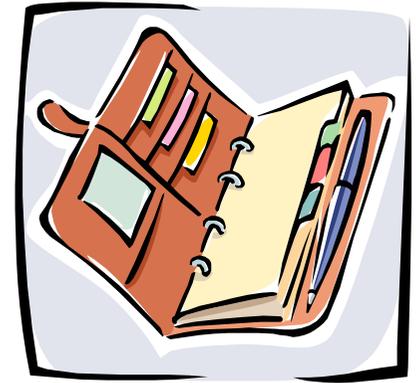
Podcast at <http://www.sodthis.com>

You should

Email me at oliver@sturmnet.org

Follow me on Twitter @olivers

Agenda



- What is F# and why is it interesting?
- Introduction – F# language elements
 - Values / mutability
 - Special data types: tuples and options
 - Functions and lambdas
 - Partial application and composition
 - List comprehensions
 - Match expressions
- OO and .NET compatibility

What is F#?

- A .NET language with Visual Studio integration
- A hybrid language, supporting functional as well as imperative and OO paradigms
- Type safe
- Widely cross-compileable with Ocaml
- Scriptable
- F# is being “productized” for the next version of Visual Studio

Why is F# interesting?

- Testbed for features we see in C# later
 - Past: Generics were introduced to .NET at the initiative of Don Syme
 - Past: LINQ has its roots in standard map/reduce/filter approaches
- Optimized syntax for FP allows easier combination of approaches
- Things that go beyond C# - metaprogramming, type inference, ...

For whom is F# interesting?

- FP in general is good at calculating things – academics, financial sector, ...
- MS wants to drive VS adoption in technical computing markets and gain academic mindshare
- Big banks have been working on F# projects for a long time, some were waiting for the productization commitment
- Systems like Erlang show benefits of concurrency strategies that FP promotes
- F# as a multi-paradigm language can be interesting to everybody. In many ways it's simply a new more flexible alternative to other .NET languages.

Introduction – F# language elements

Demo

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OO and .NET compatibility

- F# is a .NET programming language
- In some ways OO is more advanced than in C#, in others maybe less
 - Object Expressions, Object Interface Types, Partially Implemented Types, ...
 - Composition strategies for implementation hierarchies
 - Favors composition over inheritance
 - Of course “standard” OO mechanisms like implementation inheritance are also available

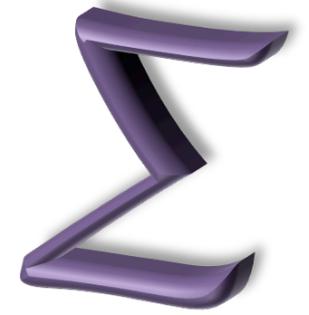
OO and .NET compatibility

Demo

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Summary



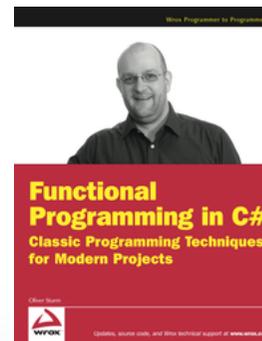
- F# is a great new language that combines paradigms to provide more choice
- Functional Programming is a strong focus
- Compatibility with the .NET Framework is also important
- Most important resources:
 - <http://research.microsoft.com/fsharp/>
 - <http://hubfs.com>
 - Foundations of F# by Robert Pickering (Apress)
 - Expert F# by Don Syme, Adam Granicz, Antonio Cisternino (Apress)

Thank you



Please feel free to contact me about the
content anytime.

oliver@sturmnet.org



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Microsoft
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