#### **Functional Thinking**



Dave Fancher
@davefancher | davefancher.com

## Introducing Delegation

# Delegates allow us to name function signatures

EventHandler: (object, EventArgs) → void

**EventHandler Delegate Definition** 

```
public delegate void EventHandler(
   object sender,
   EventArgs e
)
```

**EventHandler Delegate Definition** 

#### Delegates are a compiler trick

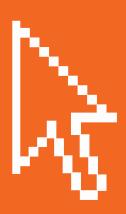
#### MulticastDelegate is:

...an abstract class which represents one or more methods to be invoked.

# Only the compiler can derive from MulticastDelegate

#### The Evolution of Delegation

- Creating custom delegates
- Classic delegation
- Anonymous methods
- Generic delegate types
- Lambda expressions



# Classic Delegation

### Interfaces

# Anonymous Methods

# Generic Delegates and Lambda Expressions

#### Review

- Delegates are .NET's mechanism for treating functions as data
- Delegates are derived from MulticastDelegate
- Generic delegate types provide a common vocabulary for delegation
- Lambda expressions are convenient inline methods