Learn to Love Lambdas

And LINQ, Too!

Jeremy Clark
www.jeremybytes.com
@jeremybytes

COMMON USES

- LINQ (Language Integrated Query)

```
if (NameFilterCheckBox.IsChecked.Value)
    people = people.Where(p => p.FirstName == NameTextBox.Text);
```

- Func<T> and Action<T>

```
Func<Person, string> personFormatter = p => p.LastName.ToUpper();
```

- Callbacks and Event Handlers

```
var proxy = new PersonServiceClient();
proxy.GetPeopleCompleted +=
    (s, a) => PersonListBox.ItemsSource = a.Result;
proxy.GetPeopleAsync();
```

ANATOMY

3 Parts

Parameter(s)
=> “goes to” operator
Expression or Statements

Expression Lambda

```
(Person person) => person.FirstName == "John"
```

Statement Lambda

```
(object sender, EventArgs args) =>
 {
     ListBox.ItemsSource = args.Result;
     Console.WriteLine("Hello");
 }
```

ANATOMY

3 Parts

Parameter(s)
=> "goes to" operator
Expression or Statements

Expression Lambda

```
(Person p) => p.FirstName == "John"
```

Statement Lambda

```
(object s, EventArgs a) =>
 {
     ListBox.ItemsSource = a.Result;
     Console.WriteLine("Hello");
 }
```

Single Character Parameter Names

SYNTACTIC VARIATIONS

- Optional Parameter Types (Parameter Type Inference)

```
(s, e) => { ListBox.ItemsSource = e.Result; }
```

- Optional Parentheses for a Single Parameter

```
e => { ListBox.ItemsSource = e.Result; }
```

- Optional Braces for a Single Statement

```
e => ListBox.ItemsSource = e.Result;
```

- Empty Parentheses for No Parameter

```
() => { Console.Write("John"); }
```

QUERY SYNTAX VS FLUENT SYNTAX

Query Syntax

```
from p in people
where p.FirstName == NameTextBox.Text
orderby p.LastName
select p;
```

Fluent Syntax

```
people.Where(p => p.FirstName == NameTextBox.Text)
      .OrderBy(p => p.LastName);
```

LINQ METHODS

```
public static IEnumerable<TSource> Where<TSource>(
    this IEnumerable<TSource> source,
    Func<TSource, bool> predicate
)
```

Put Your Lambda Expression Here

THANK YOU!

Jeremy Clark

- http://www.jeremybytes.com
- jeremy@jeremybytes.com
- @jeremybytes