Asynchronous Programming

Jesse Liberty

http://JesseLiberty.com

@JesseLiberty

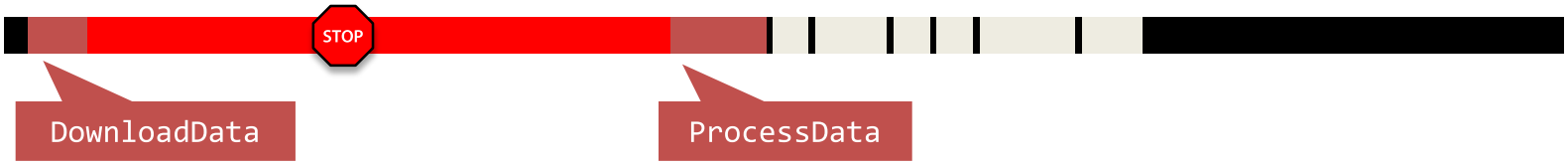
pluralsight
hardcore developer training

Asynchronous

Asynchronous programming is becoming the norm

Synchronous vs. asynchronous

```
var data = DownloadData(...);
ProcessData(data);
```




```
var future = DownloadDataAsync(...);
future.ContinueWith(data => ProcessData(data));
```

Asynchronous programming models

- Windows Runtime: IAsyncOperation<T>
- .NET Framework: Task<T>
- Javascript: Promises
- All are objects representing “ongoing operations”
  - All use callbacks to signal completion of operation
  - Callbacks turn your code inside out

Asynchronous methods automatically transform normal code into a callback state machine

Asynchronous methods…

- Are marked with new “async” modifier
- Must return void or Task<T>
- Use “await” operator to cooperatively yield control
  - Are resumed when awaited operation completes
- Allow composition using regular programming constructs
- Feel just like good old synchronous code!

Demo

Summary