

# **Leveraging Java 8 for test automation**

**Colm Harrington, VCE Ltd.**

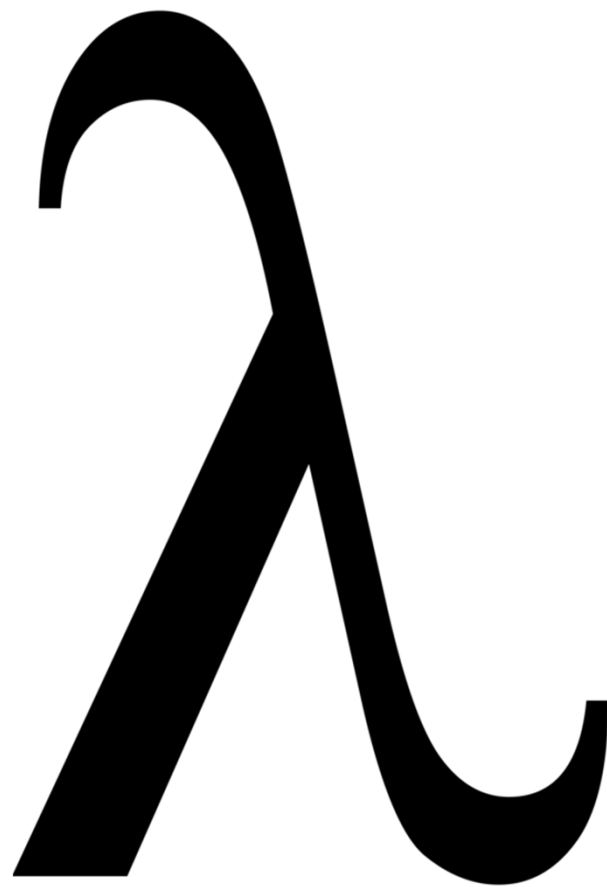
# Prerequisites

- Beginner to intermediate Java knowledge
- Basic experience with the WebDriver API

# New Core Language Features

- Lambdas
- Functional Interfaces
- Predicates
- Default Methods
- Streams

**Lambdas**



# Lambdas

- Anonymous functions
- Syntactic sugar
  - (String s) -> System.out.println(s);
- Often used to replace anonymous classes
  - WebDriverWait
- Concise, minimises boilerplate code
  - No Ceremony, only functionality
- Behaviour as an argument
  - function = 1st class citizen
- IDE Examples!

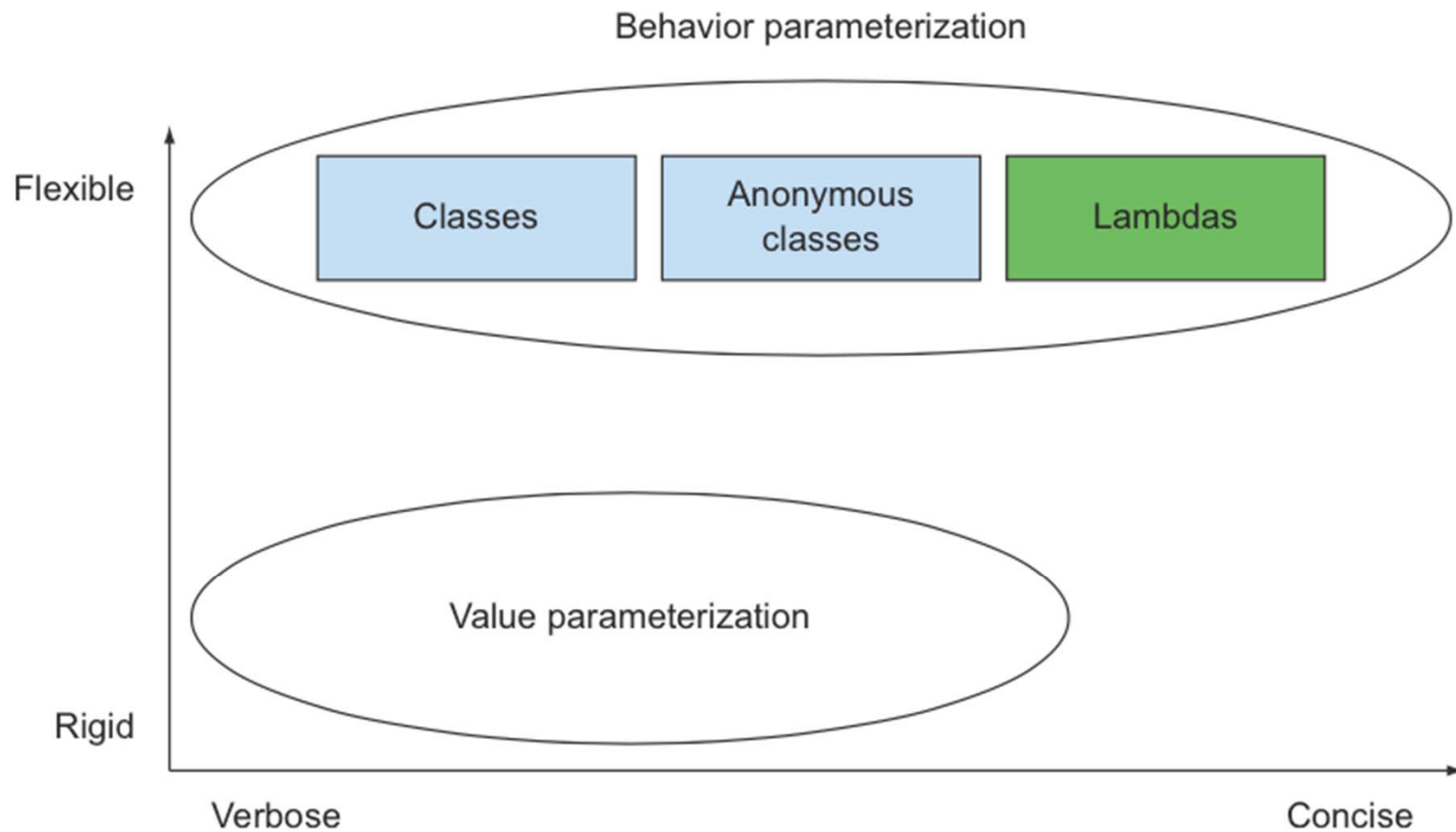
# Functional Interfaces

- `Function<T, R>`
- `Supplier<T>`
- `Consumer<T>`
- `Predicate<T>`
  - abstract method called `test()`
  - returns a boolean
  - useful to map 'Acceptance Criteria' to tests

# Predicates

- Specific type of functional interface
- Returns a boolean
- Very useful for automated checks
  - Is element x present on a webpage?
  - Is the 'pay now' button enabled?
- IDE Example!

# Why pass behaviour?

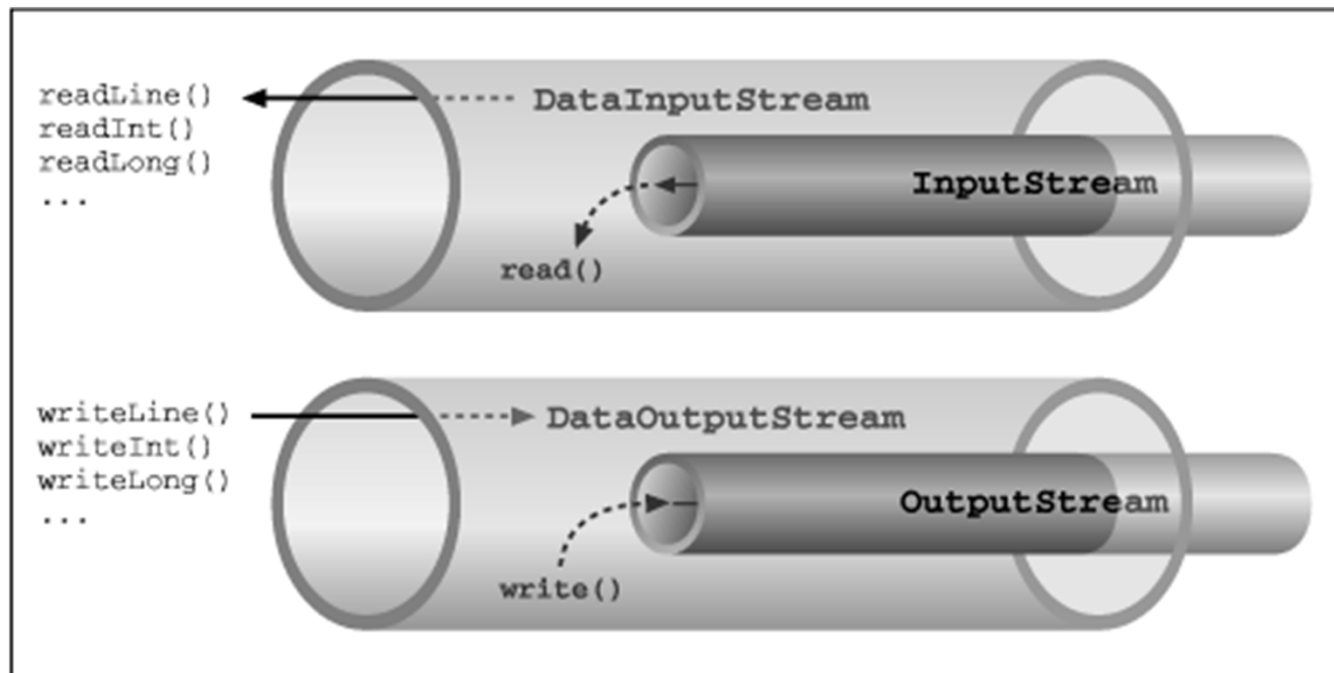




# Default Methods

- Blurring the lines between interfaces and abstract classes.
- Implementation with the interface itself
  - No need to provide implementation
- Predicate
  - and()
  - or()
  - negate()
- IDE Example: Combine Predicates

# Streams



# Streams

- Sequence of objects
- Lazy, great for Big Data
- Convert from list etc
- Useful for `findElements()` which returns a list
- Accepts functional interfaces as arguments
  - Leverage lambdas to manipulate streams

# Date/Time API

- Month starts with zero
- Concurrency fail
- Joda Time solution
  - New & Improved
  - Implemented in Java 8
- Time adjusters

# Where next?

- Optional
- CompletableFuture

# Resources

Automation Code Fork: <http://bit.ly/1JgqLFu>

Web App Fork: <http://bit.ly/1Jgr0jO>

Slide Deck: <http://bit.ly/1I5d8M2>

Web Server: <http://pow.cx/>

# Contact Details

@colmharrington

<https://github.com/windwaker>

**Q & A**