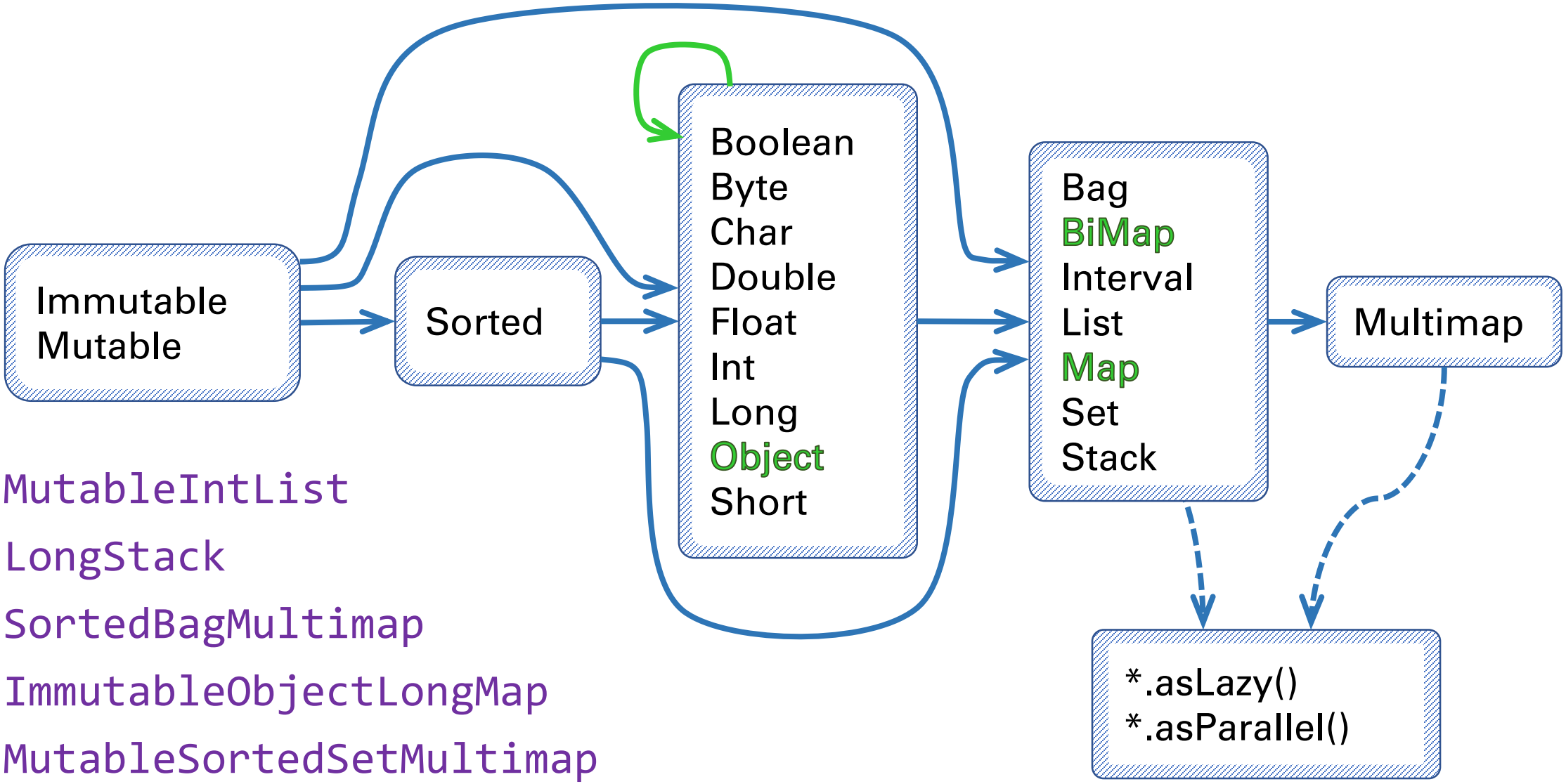
Refactoring to Eclipse Collections

Making Your Java Streams Leaner, Meaner, and Cleaner

Introduction

- What is Eclipse Collections?
  - Feature rich, memory efficient Java Collections framework
- History
  - Eclipse Collections started off as an internal collections framework named Caramel at Goldman Sachs in 2004
  - In 2012, it was open sourced to GitHub as a project called GS Collections
  - GS Collections was migrated to the Eclipse Foundation, re-branded as Eclipse Collections in 2015
- Eclipse Collections is open for contributions!

Any Types You Need




```
MutableIntList
LongStack
SortedBagMultimap
ImmutableObjectLongMap
MutableSortedSetMultimap
```

Instantiate Them Using Factories

Primitive Type	Container Type	Mutability	Multimap	Initialized	Lazy
Boolean	Bags	.mutable	.bag	.empty()|.of()|.with()	.asLazy()
Byte	BiMaps	.immutable	.list	.of(one)|.with(one)	
Char	Lists	.fixedSize	.set	...	
Double	Maps		.sortedSet	.of(one,…,ten)	
Float	Multimaps			.with(one,…,ten)	
Int	Sets			.of(... elements)	
Long	SortedBags			.with(... elements)	
Object	SortedMaps			.ofAll(Iterable)	
Short	SortedSets			.withAll(Iterable)	
	Stacks				

```
ImmutableLongStack
LongStacks.immutable.with(1, 2, 3).asLazy()
LazyLongIterable
```

Methods [some of] by Category

transform

collect[With]
collect[Boolean,Byte,Char,Double,Float,Int,Long,Short]
collectIf
collectKeysAndValues
collectValues
collectWithIndex
collectWithOccurrences
flatCollect

group

groupBy
groupByEach
groupByUniqueKey
sumBy[Double,Float,Int,Long]
sumOf[Double,Float,Int,Long]
aggregateBy
aggregateInPlaceBy

convert

toArray
toBag
toImmutable
toList
toMap
toReversed
toSet
toSortedBag[By]
toSortedList[By]
toSortedMap
toSortedSet
toSortedSet[By]
toStack
toString

filter

select[With]
selectByOccurrences
selectInstancesOf
reject[With]
partition[With]
partitionWhile

wrap

asLazy
asParallel
asReversed
asSynchronized
asUnmodifiable

find

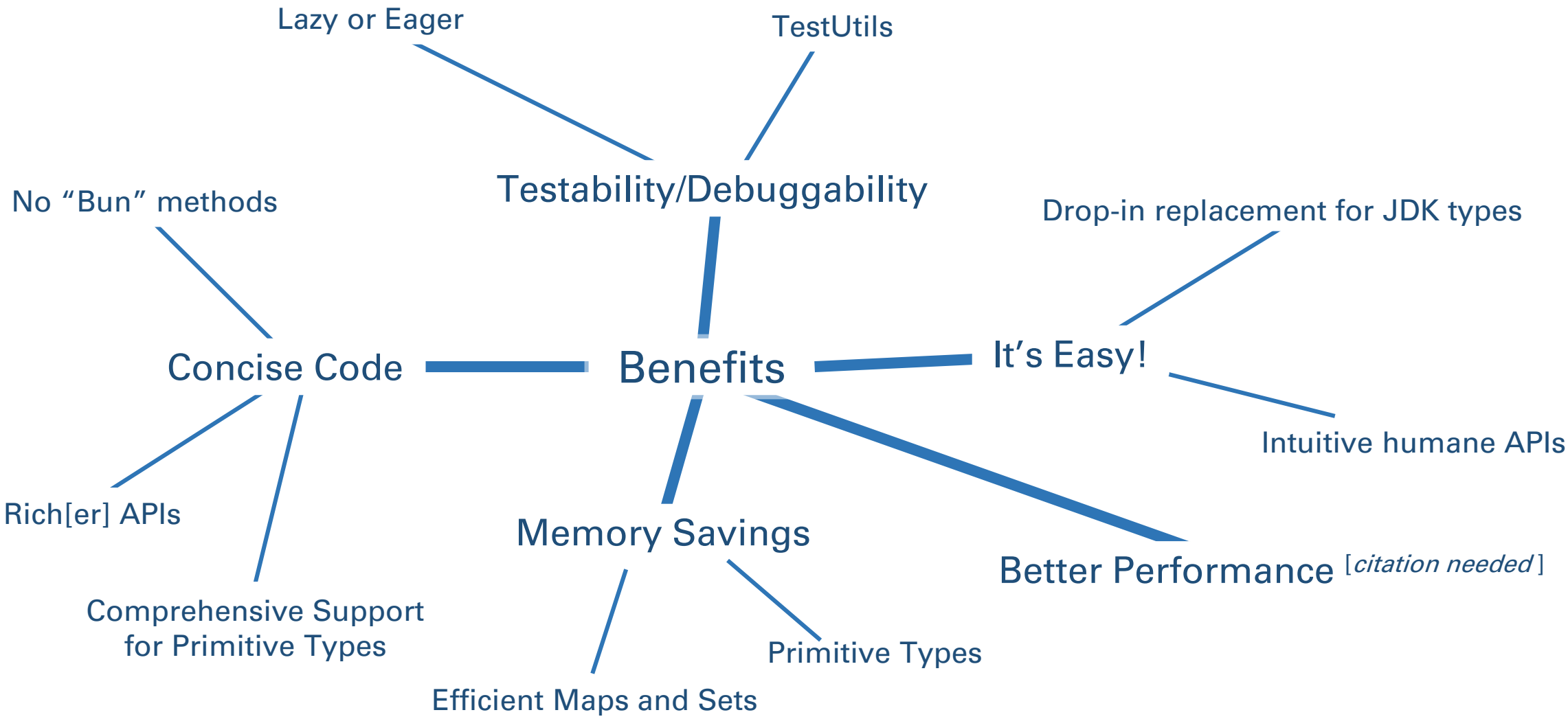
detect[With]
detect[With]IfNone
detect[With]Optional
max[By]
min[By]

test

allSatisfy[With]
anySatisfy[With]
noneSatisfy[With]
notEmpty
isEmpty

Methods – Lots More…

Why Refactor to EC?



Let’s Do It!

JMH Benchmark Results

Memory Usage Comparison