Overview of Java 8 CompletableFutures (Part 2)

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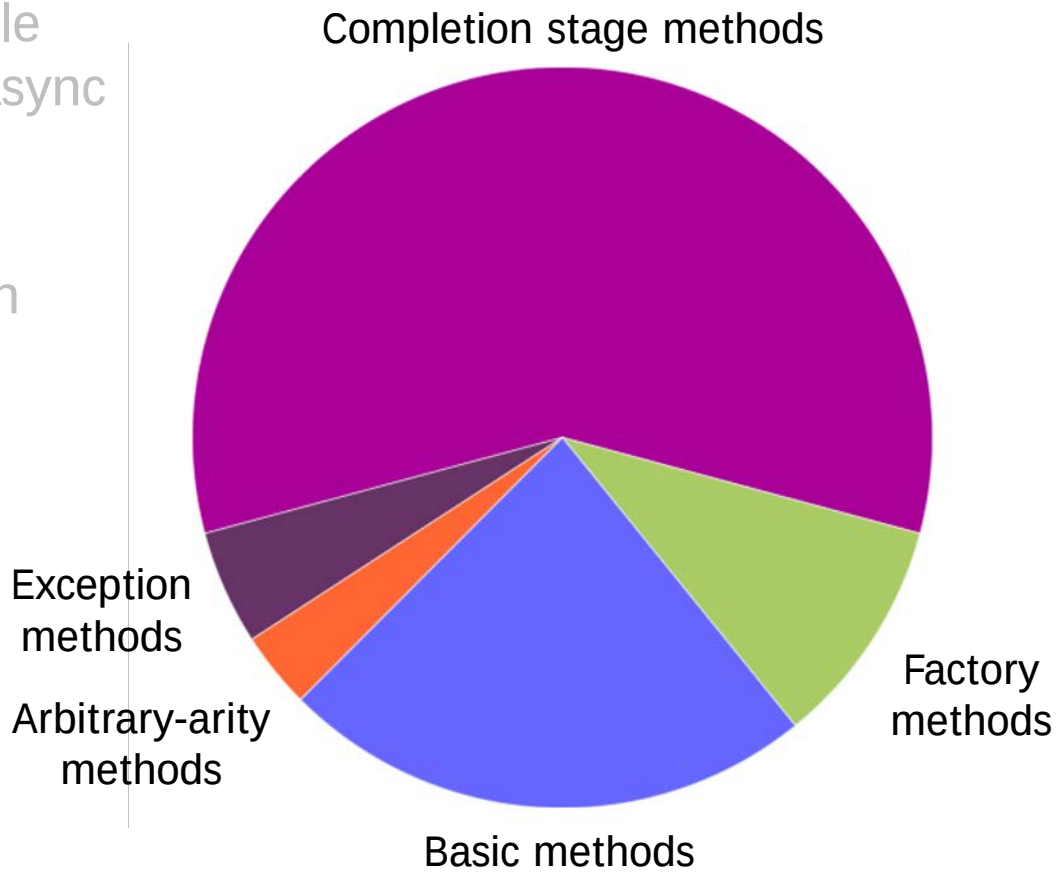
Learning Objectives in this Part of the Lesson

- Know how the Java 8 completable futures framework provides an async concurrent programming model
- Recognize Java 8 completable futures overcome limitations with Java futures
- Be able to group methods in the Java 8 completable future API



Grouping the Java 8 Completable Future API

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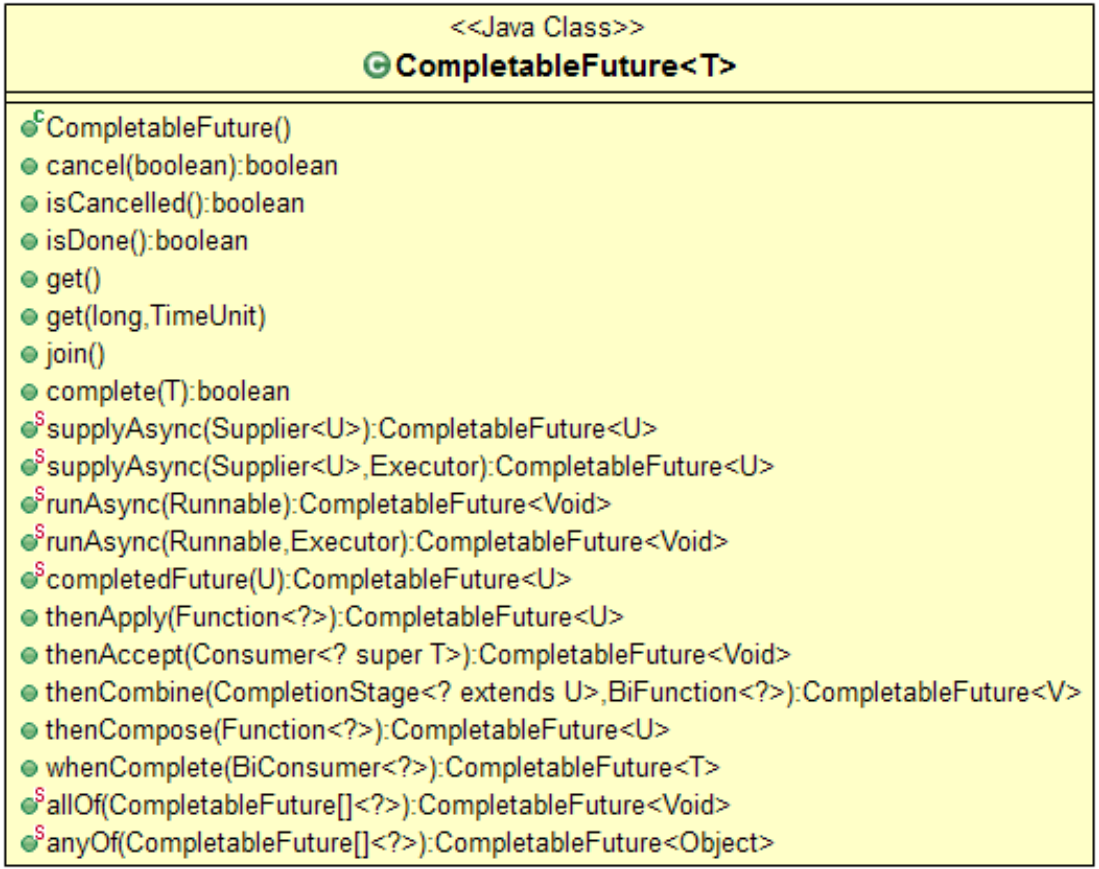
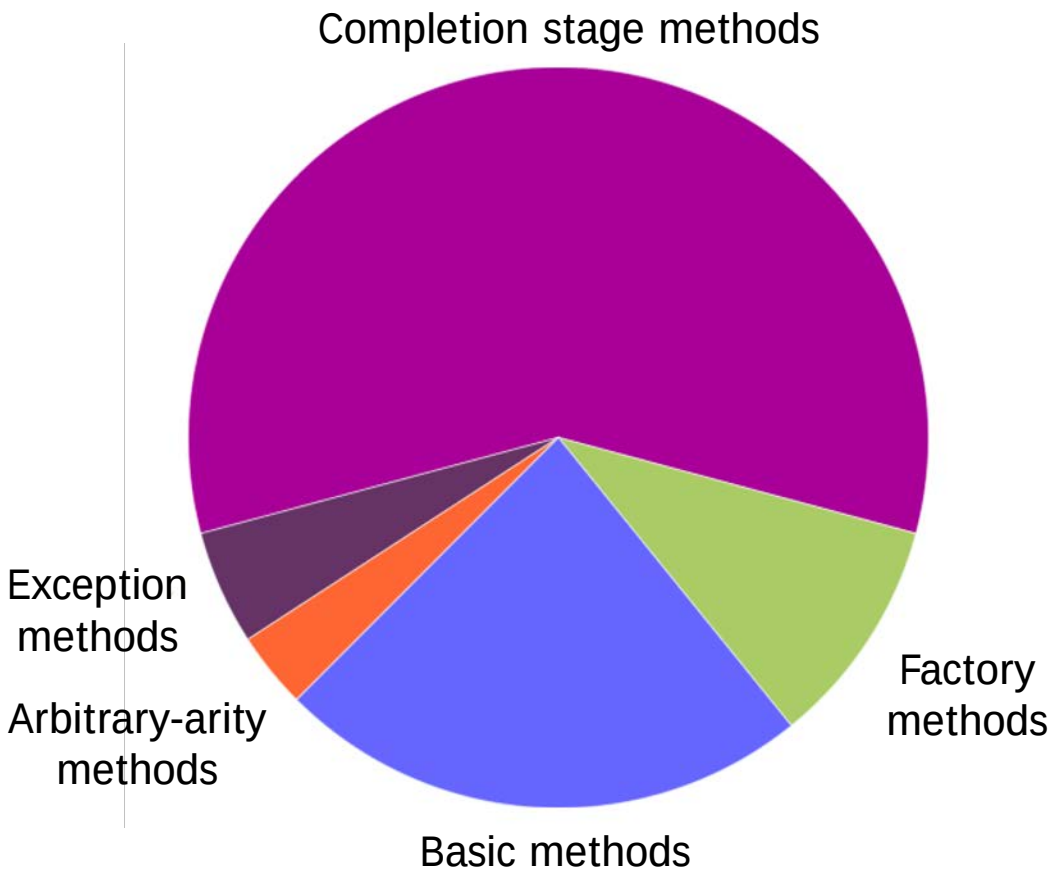
- The entire completable future framework resides in one class with 60+ methods!!!



See docs.oracle.com/javase/8/docs/api/java/util/concurrent/CompletableFuture.html

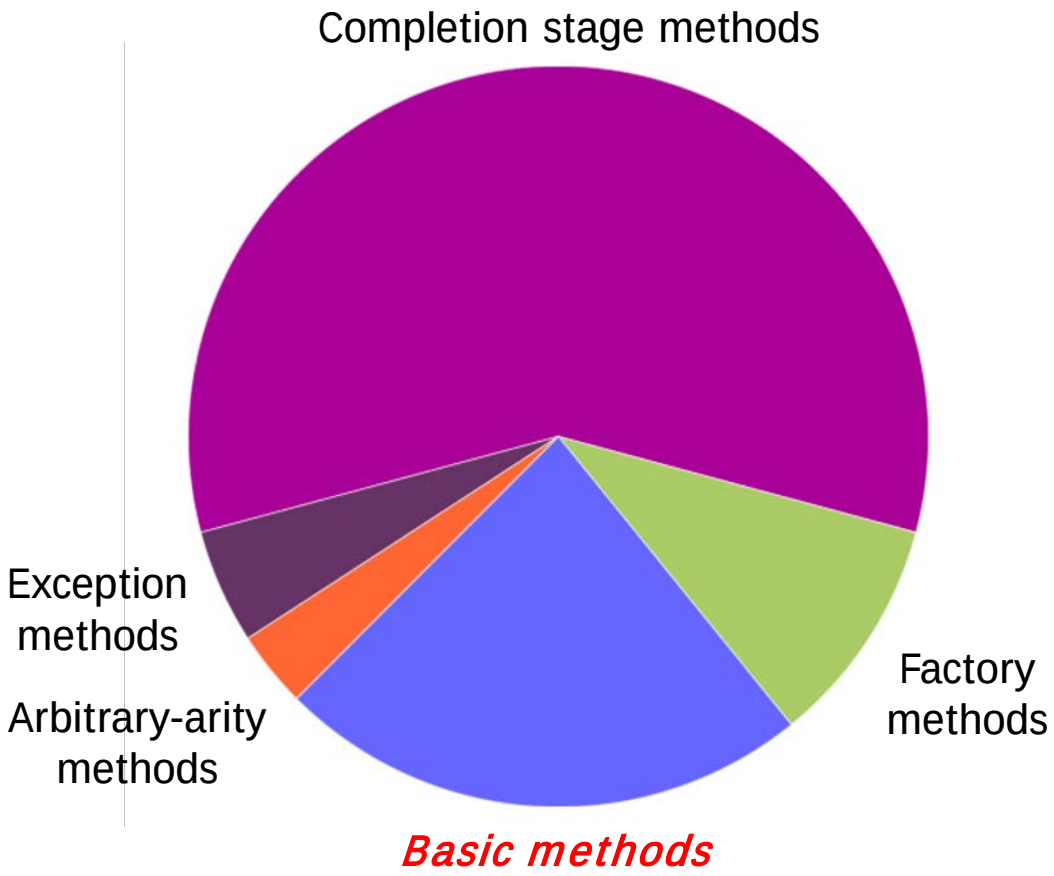
Grouping the Java 8 Completable Future API

- The entire completable future framework resides in one class with 60+ methods!!!
  - It therefore helps to have a "birds-eye" view of this class



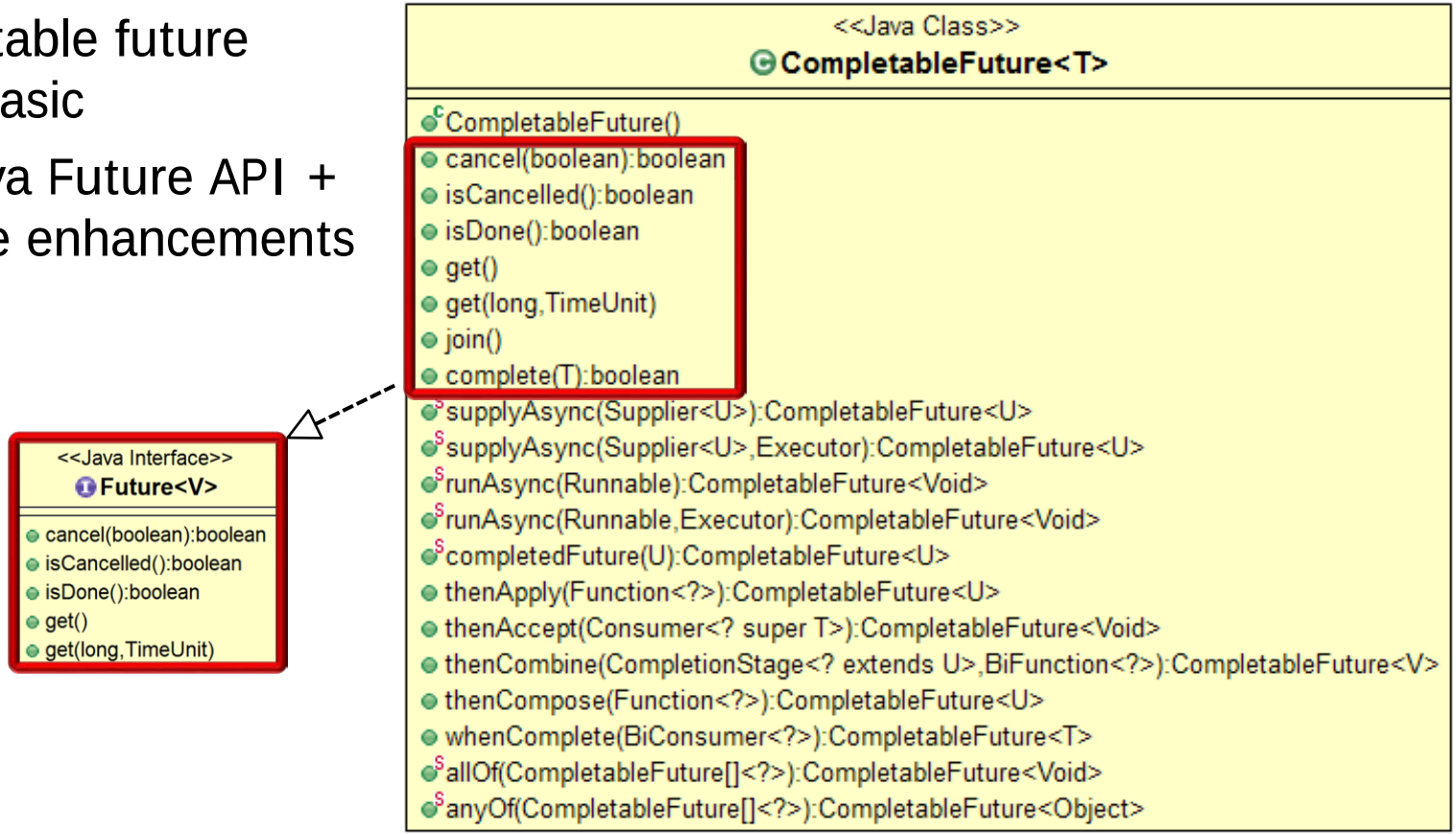
Grouping the Java 8 Completable Future API

- Some completable future features are basic



Grouping the Java 8 Completable Future API

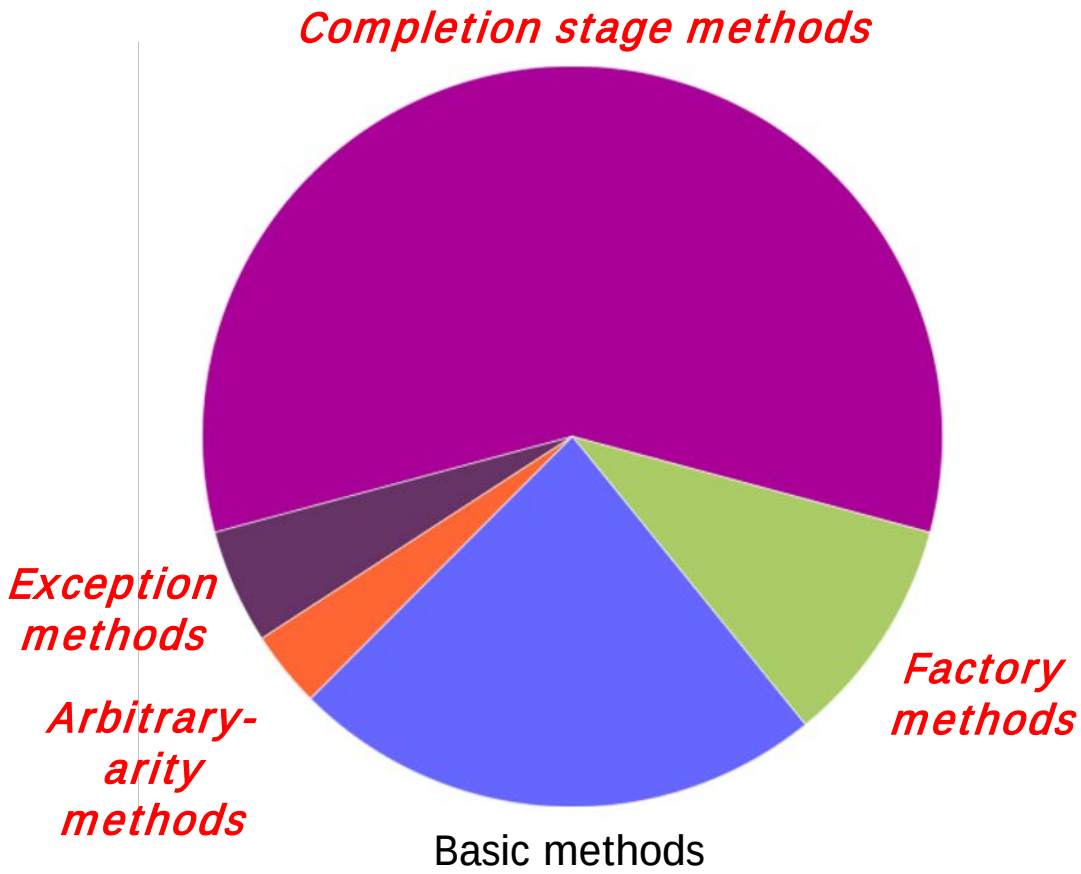
- Some completable future features are basic
  - e.g., the Java Future API + some simple enhancements



Only slightly better than the conventional Future interface

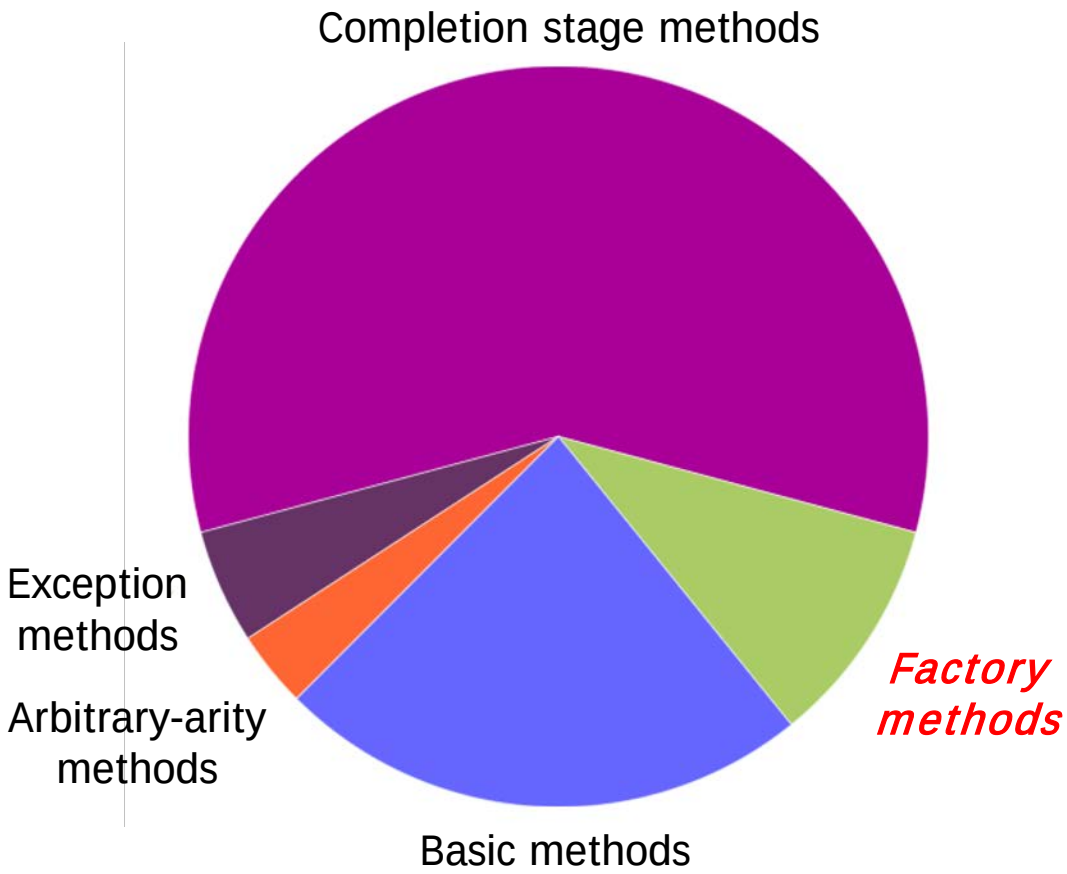
Grouping the Java 8 Completable Future API

- Other completable future features are more advanced



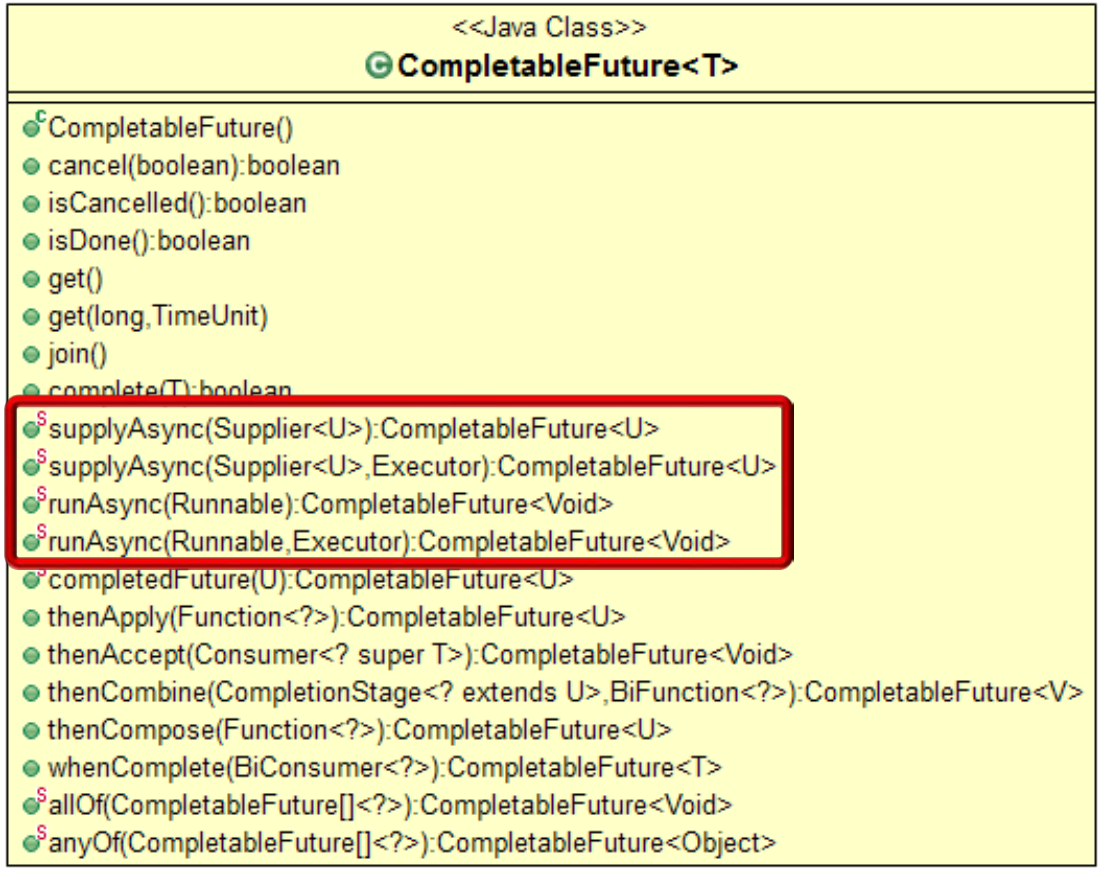
Grouping the Java 8 Completable Future API

- Other completable future features are more advanced
  - Factory methods



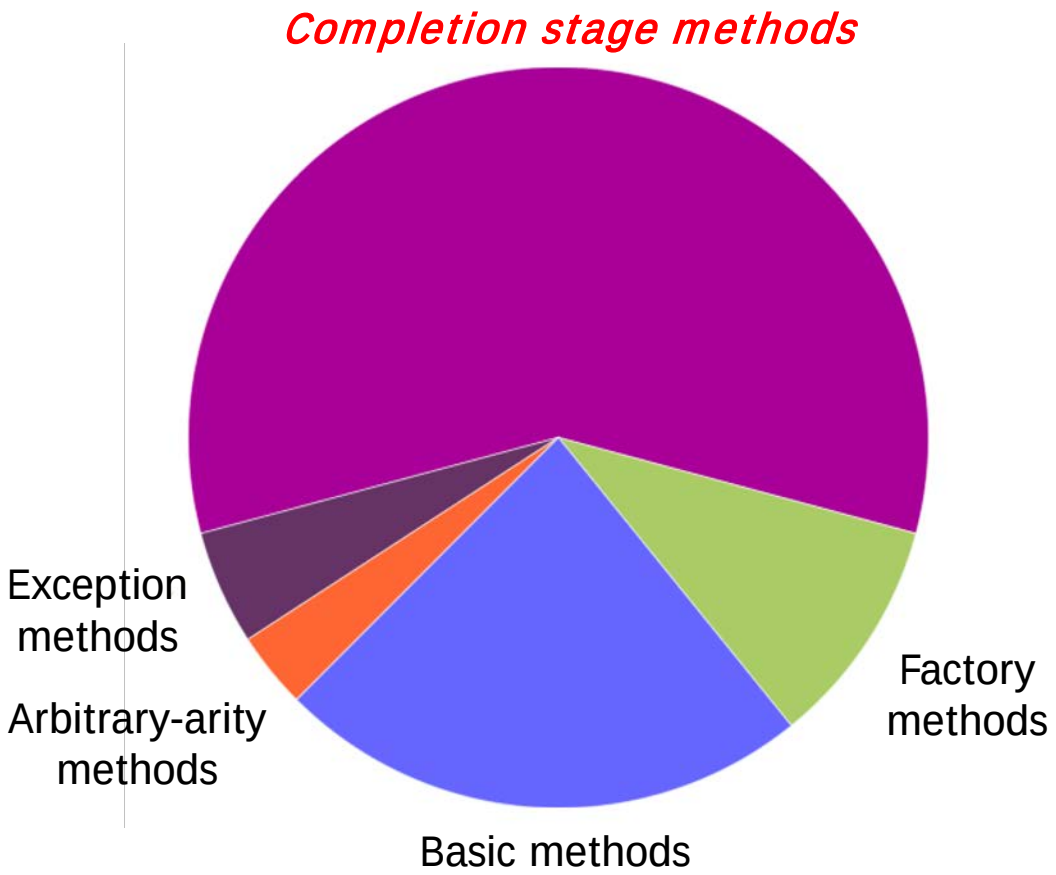
Grouping the Java 8 Completable Future API

- Other completable future features are more advanced
  - Factory methods
    - Initiate async two-way or one-way computations



Grouping the Java 8 Completable Future API

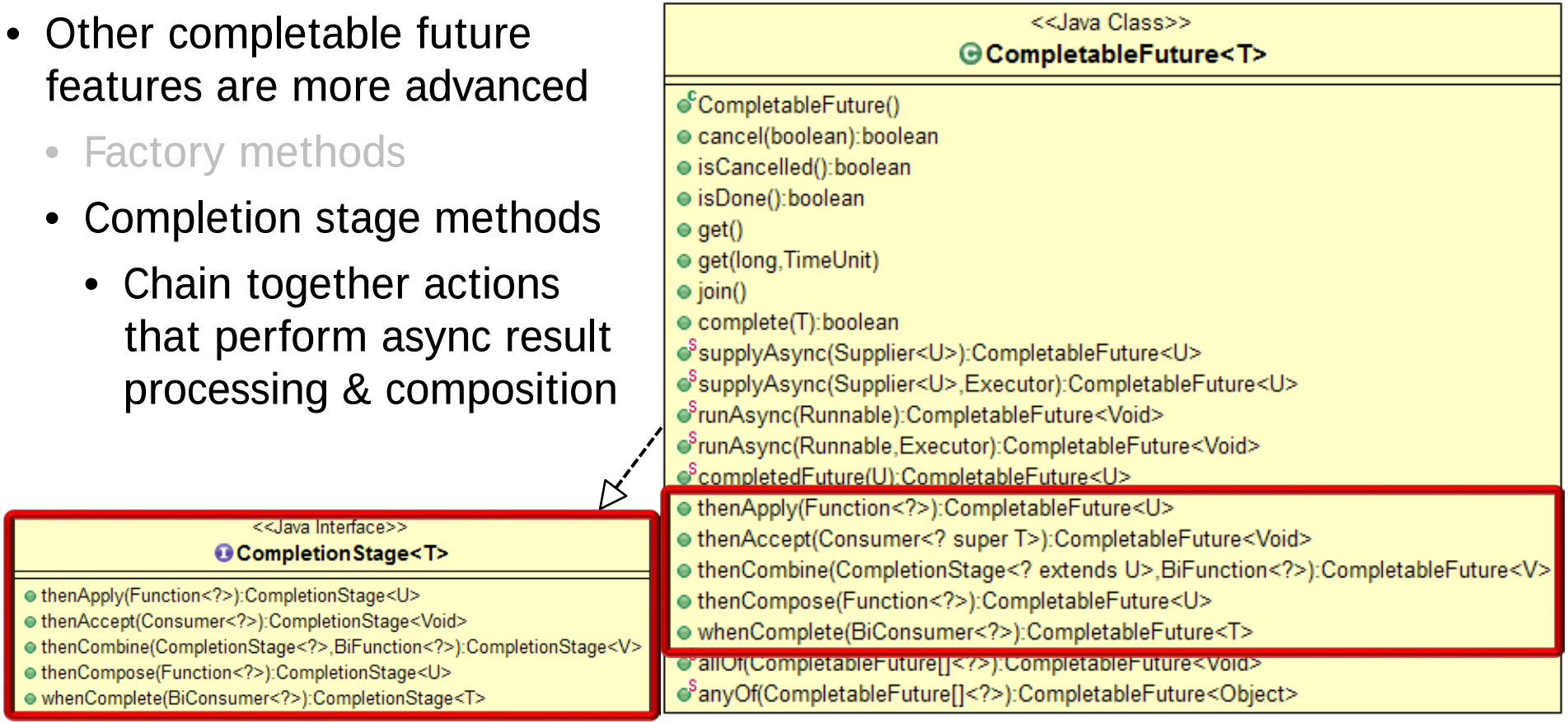
- Other completable future features are more advanced
  - Factory methods
  - Completion stage methods



See docs.oracle.com/javase/8/docs/api/java/util/concurrent/CompletionStage.html

Grouping the Java 8 Completable Future API

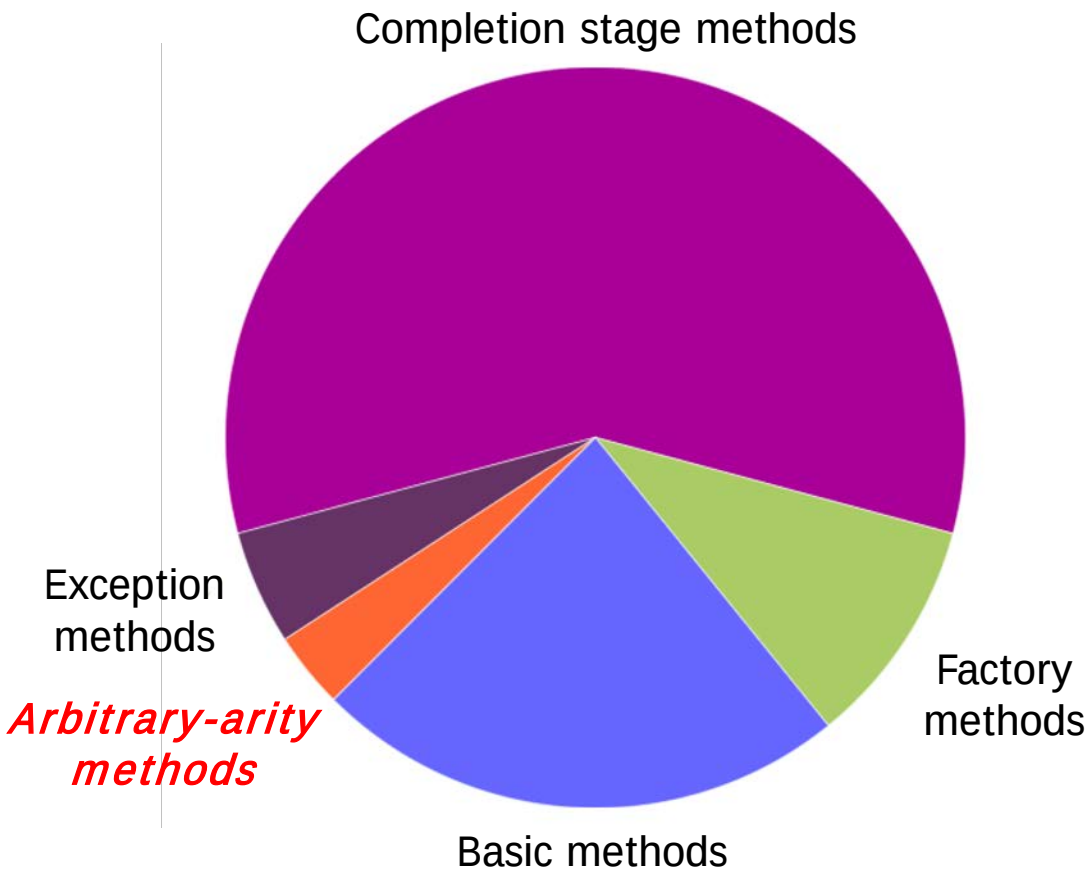
- Other completable future features are more advanced
  - Factory methods
  - Completion stage methods
    - Chain together actions that perform async result processing & composition



See docs.oracle.com/javase/8/docs/api/java/util/concurrent/CompletionStage.html

Grouping the Java 8 Completable Future API

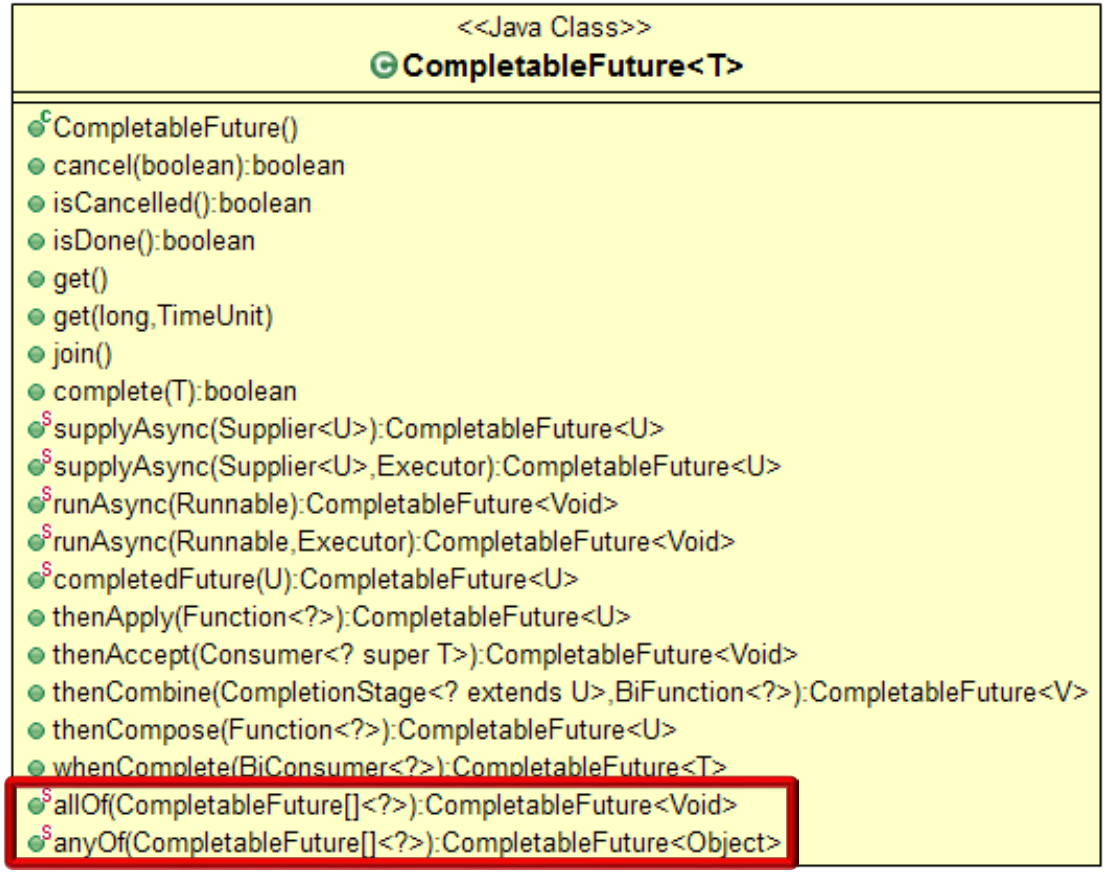
- Other completable future features are more advanced
  - Factory methods
  - Completion stage methods
  - “Arbitrary-arity” methods that process futures in bulk



See en.wikipedia.org/wiki/Arity

Grouping the Java 8 Completable Future API

- Other completable future features are more advanced
  - Factory methods
  - Completion stage methods
  - "Arbitrary-arity" methods that process futures in bulk
    - Combine multiple futures into a single future



End of Overview of Java 8 Completable Futures (Part 2)