Overview of the Java SearchWith ParallelStreams Case Study

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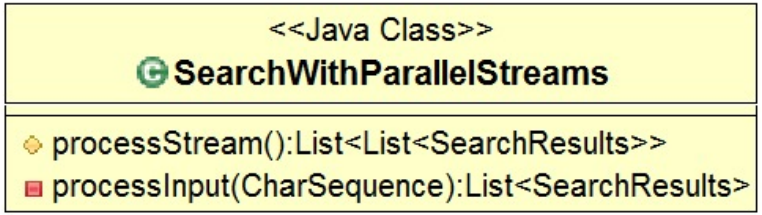
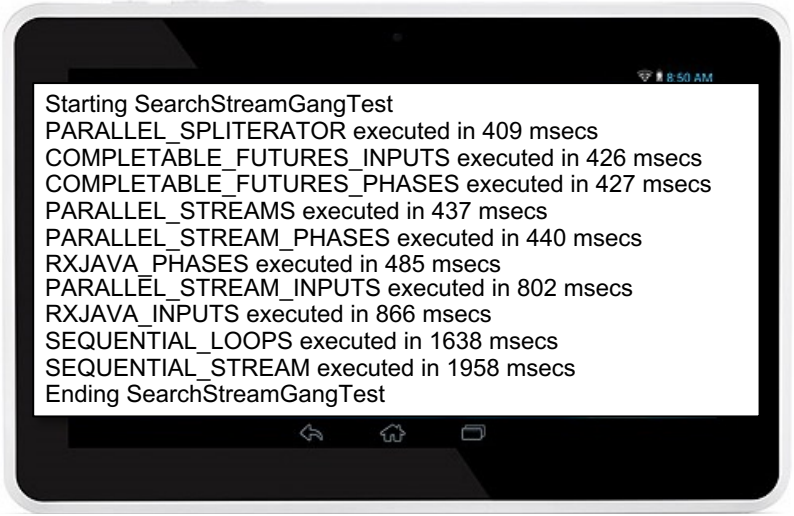
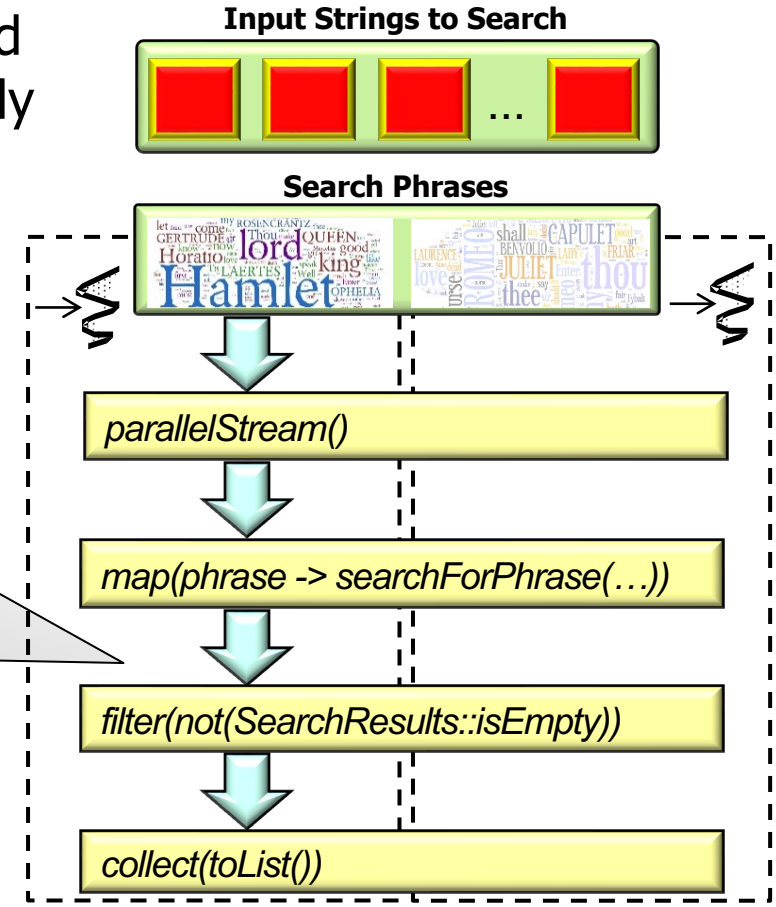
Learning Objectives in this Part of the Lesson

- Know how Java parallel streams are applied in the SearchWithParallelStreams case study







See github.com/douglascraigschmidt/LiveLessons/tree/master/SearchStreamGang

Applying Parallel Streams to SearchStreamGang

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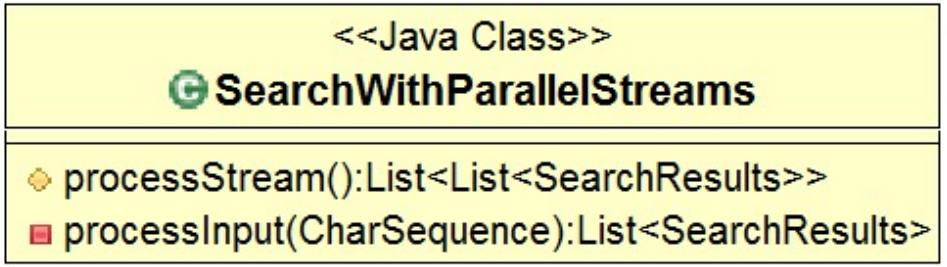
- We focus on parallel streams in the SearchWithParallelStreams methods processStream() & processInput()



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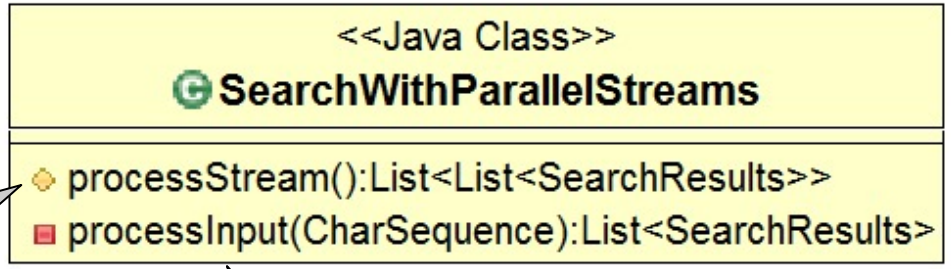


```
getInput()
   .parallelStream()
   .map(this::processInput)
   .collect(toList());
```

```
return mPhrasesToFind
   .parallelStream()
   .map(phrase -> searchForPhrase(phrase, input, title, false))
   .filter(not(SearchResults::isEmpty)
   .collect(toList());
```

See SearchStreamGang/src/main/java/livelessons/streamgangs/SearchWithParallelStreams.java

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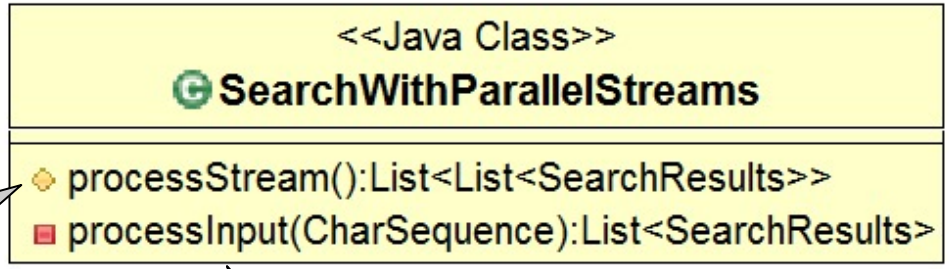


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i.e., the map(), filter(), & collect() aggregate operations

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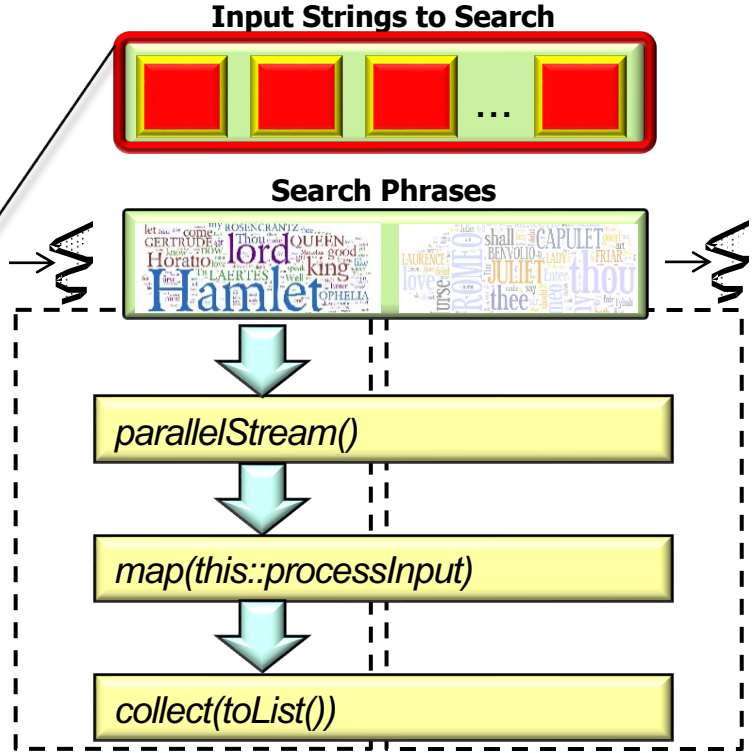
- We focus on parallel streams in the SearchWithParallelStreams methods processStream() & processInput()
  - **processStream()**
    - Uses a parallel stream to search a list of input strings

Each input string contains a work of Shakespeare (e.g., Hamlet, MacBeth, etc.)



This parallel stream uses the common fork-join pool of worker threads

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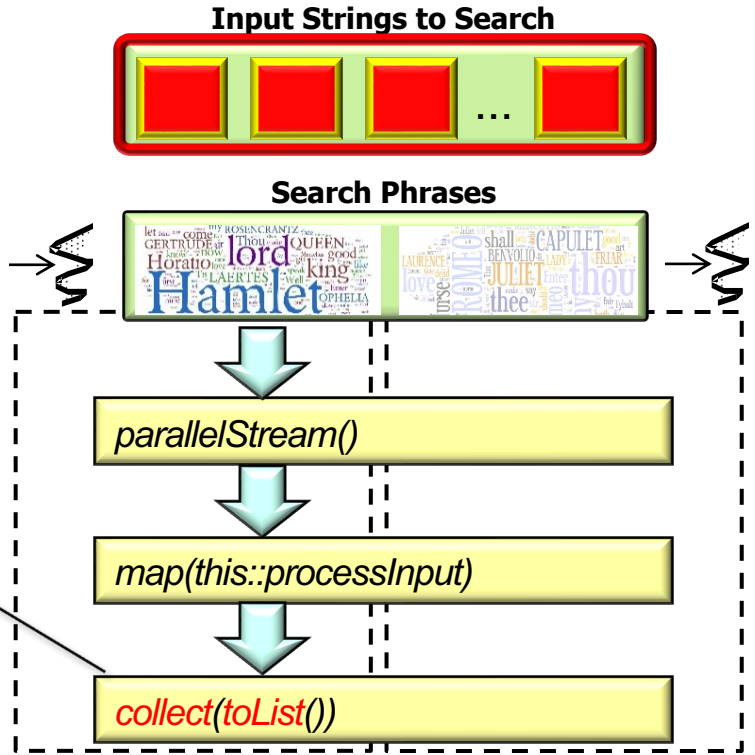
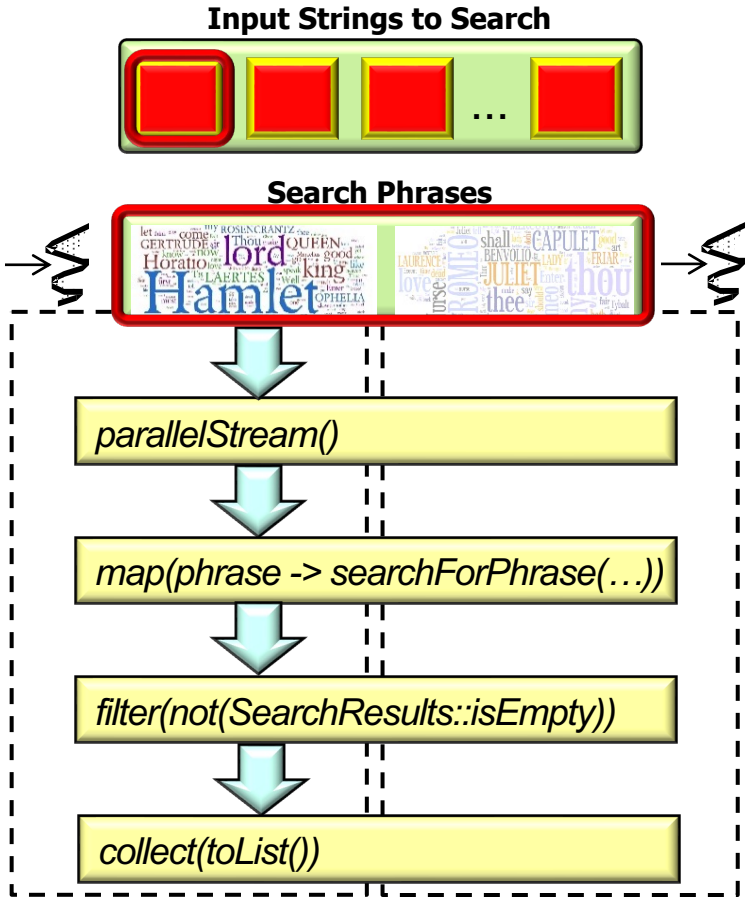


Returns a list of lists of SearchResults

Applying Parallel Streams to SearchStreamGang

- We focus on parallel streams in the SearchWithParallelStreams methods processStream() & processInput()
  - processStream()
  - **processInput()**
    - Uses a parallel stream to search each input string & locate all occurrences of phrases



This parallel stream also uses the common fork-join pool of worker threads

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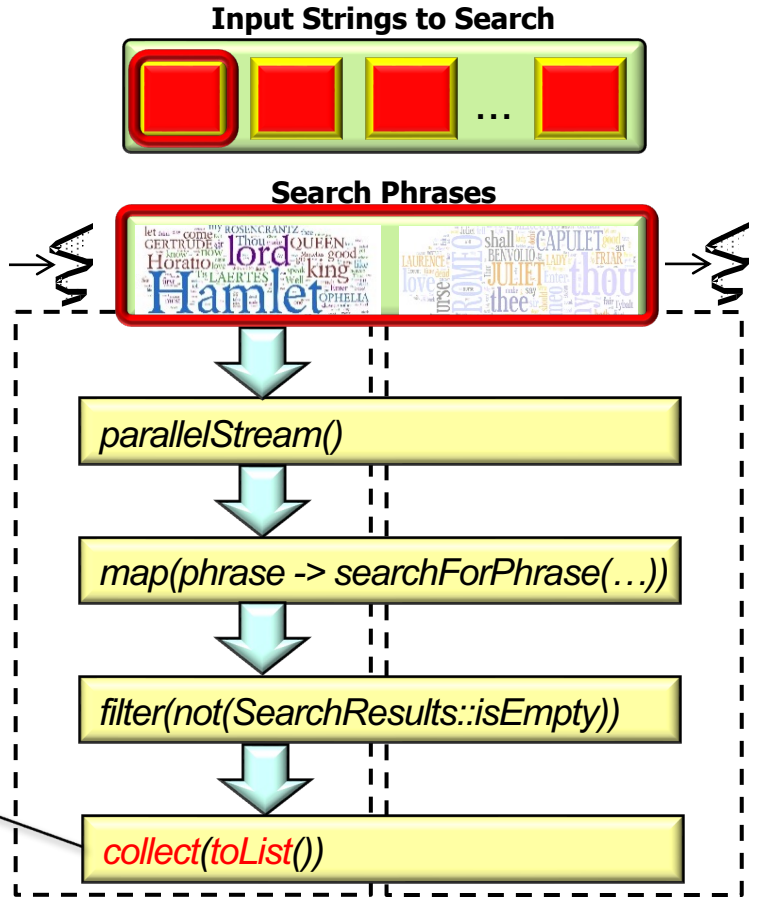
Returns a list of SearchResults



End of Overview of the Java SearchWithParallelStreams Case Study