Visualizing the WordSearcher .findWords() Method

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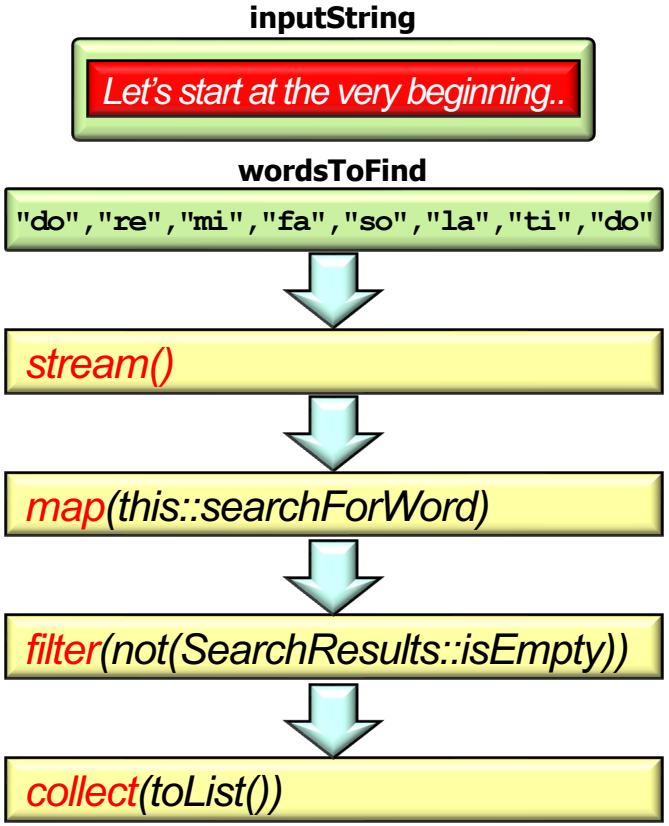
Learning Objectives in this Part of the Lesson

- Recognize the structure & functionality of the SimpleSearchStream example
- Visualize aggregate operations in SimpleSearch Stream's WordSearcher.findWords() method

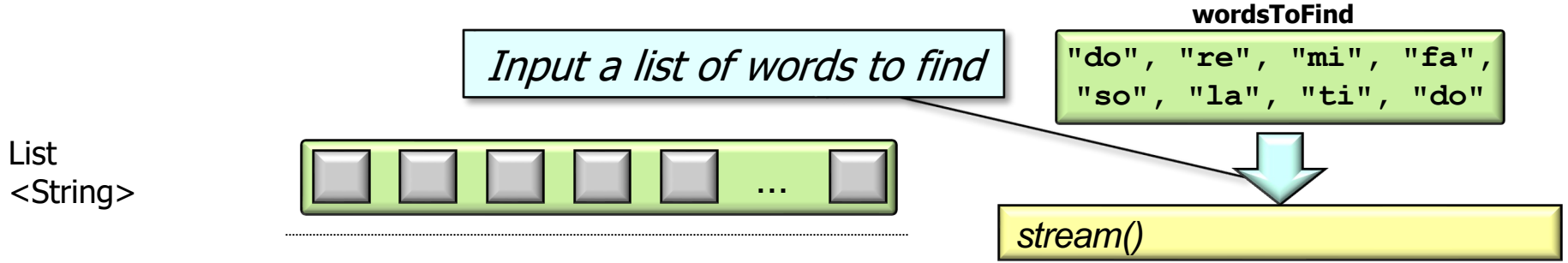


See github.com/douglascraigschmidt/LiveLessons/tree/master/SimpleSearchStream

Visualizing the Word Searcher.findWords() Method

Visualizing the WordSearcher.findWords() Method

- WordSearcher.findWords() searches for words in an input string



See SimpleSearchStream/src/main/java/search/WordSearcher.java

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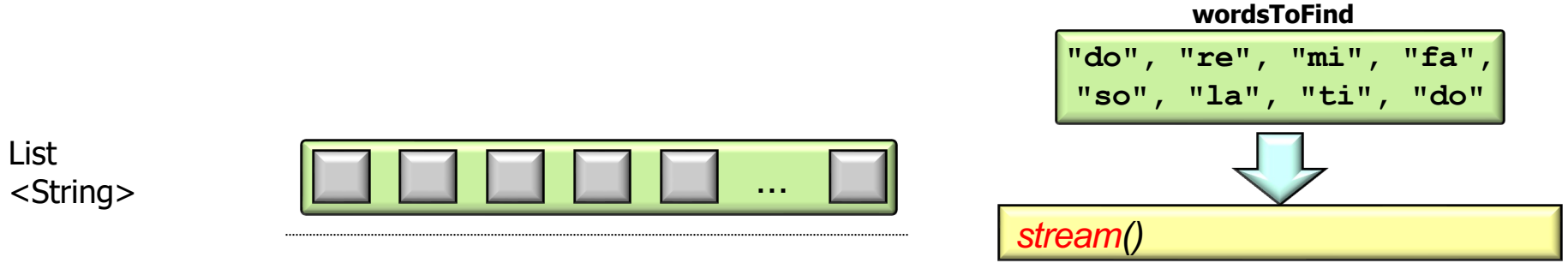

Convert collection to a (sequential) stream

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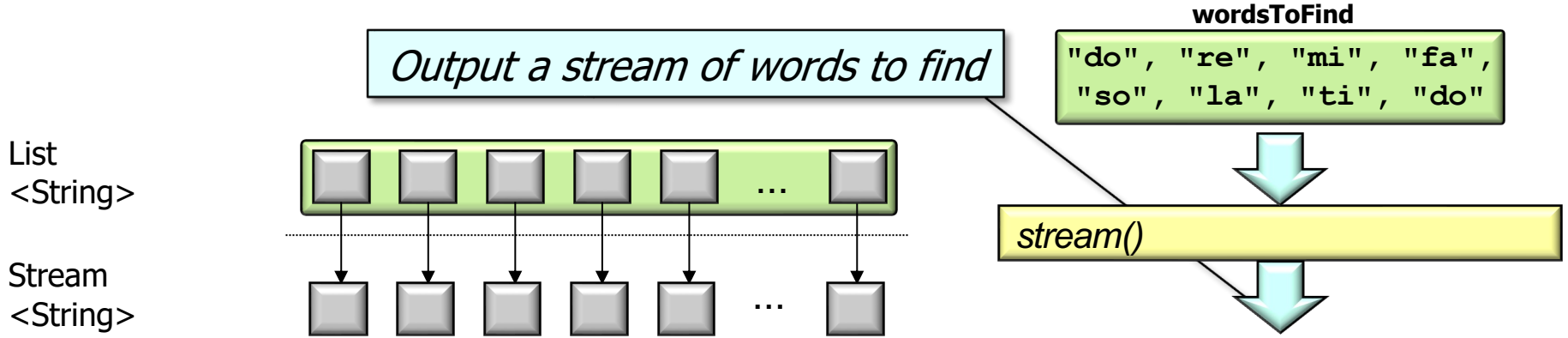

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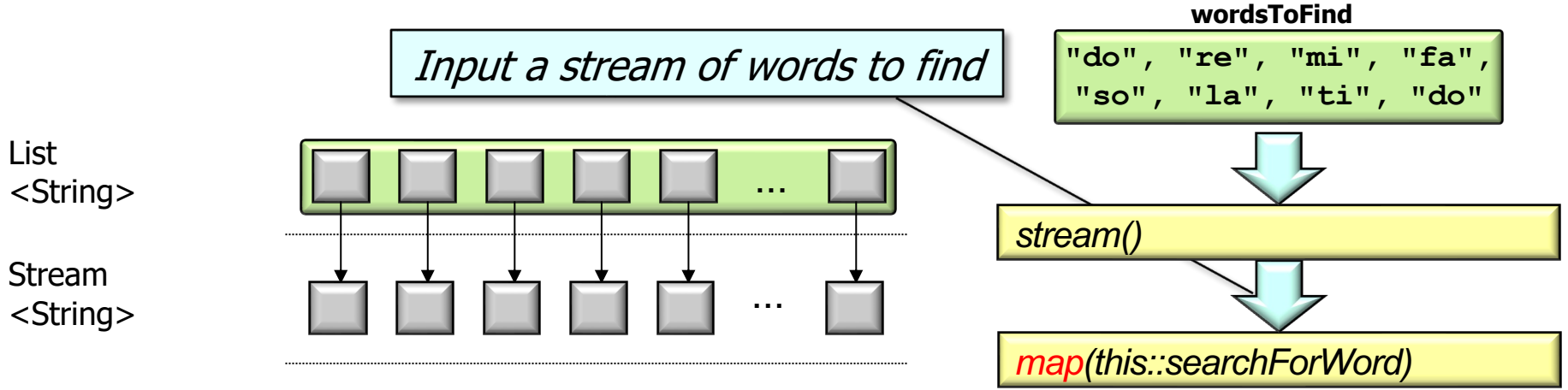

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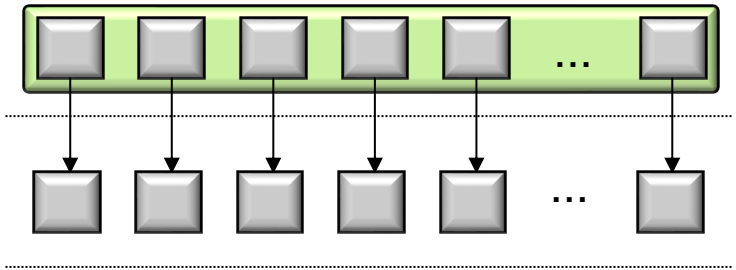
List
<String>

Stream
<String>



wordsToFind

```
"do", "re", "mi", "fa",
"so", "la", "ti", "do"
```

stream()

map(this::searchForWord)

Search for the word in the input string

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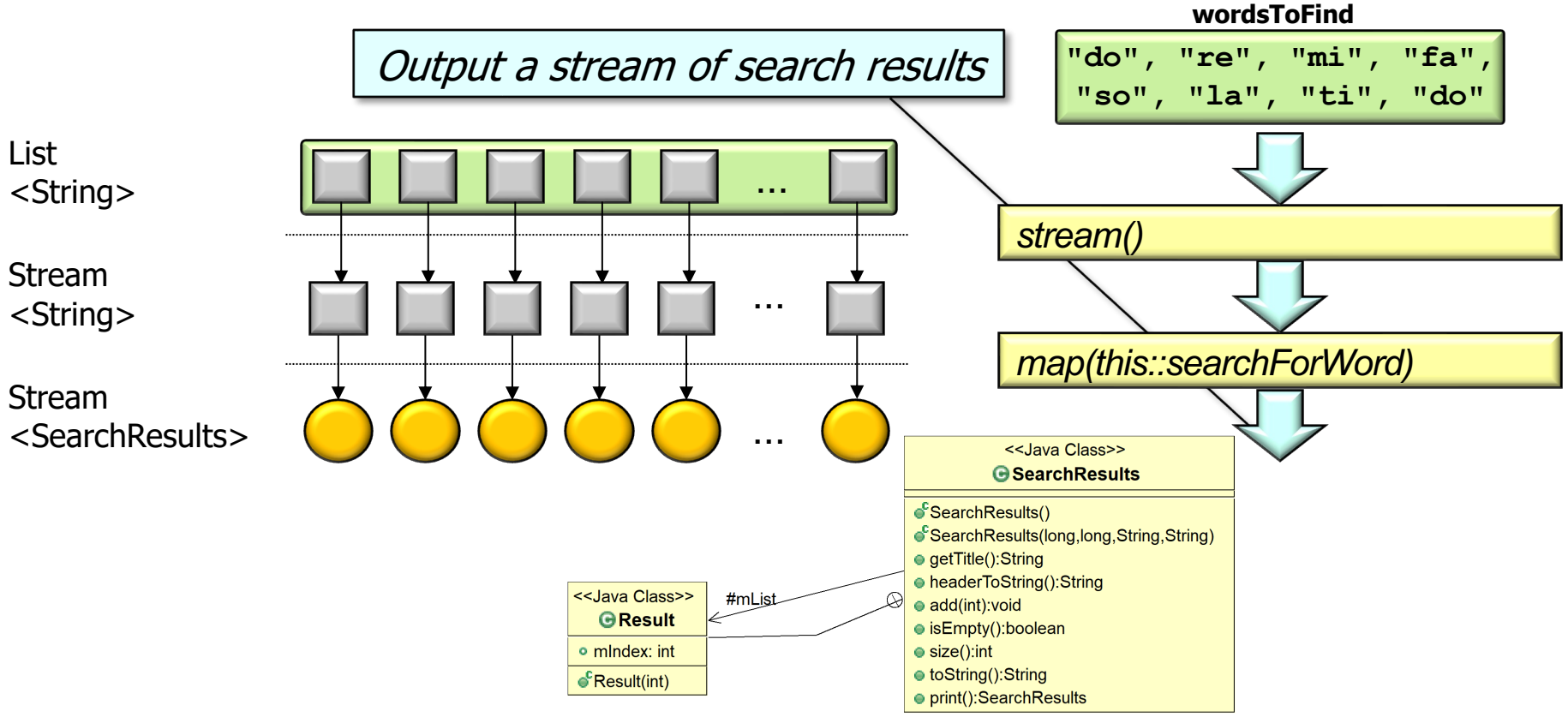

SearchResults stores # of times a word appeared in the input string

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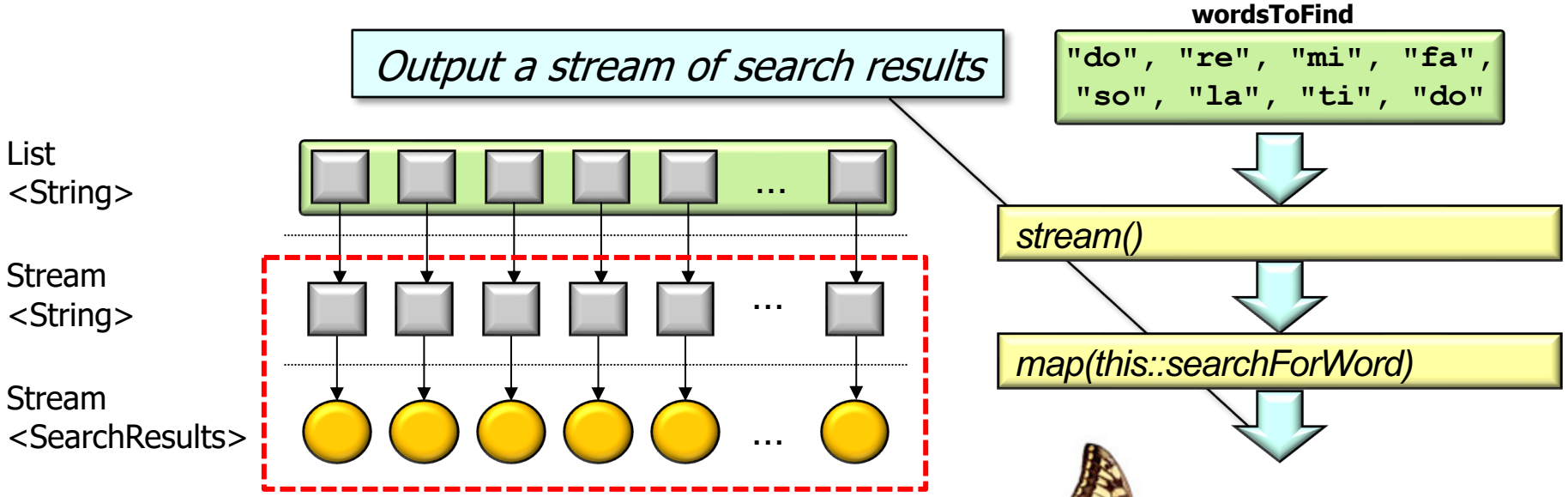

Note the transformation of types at this point in the stream!

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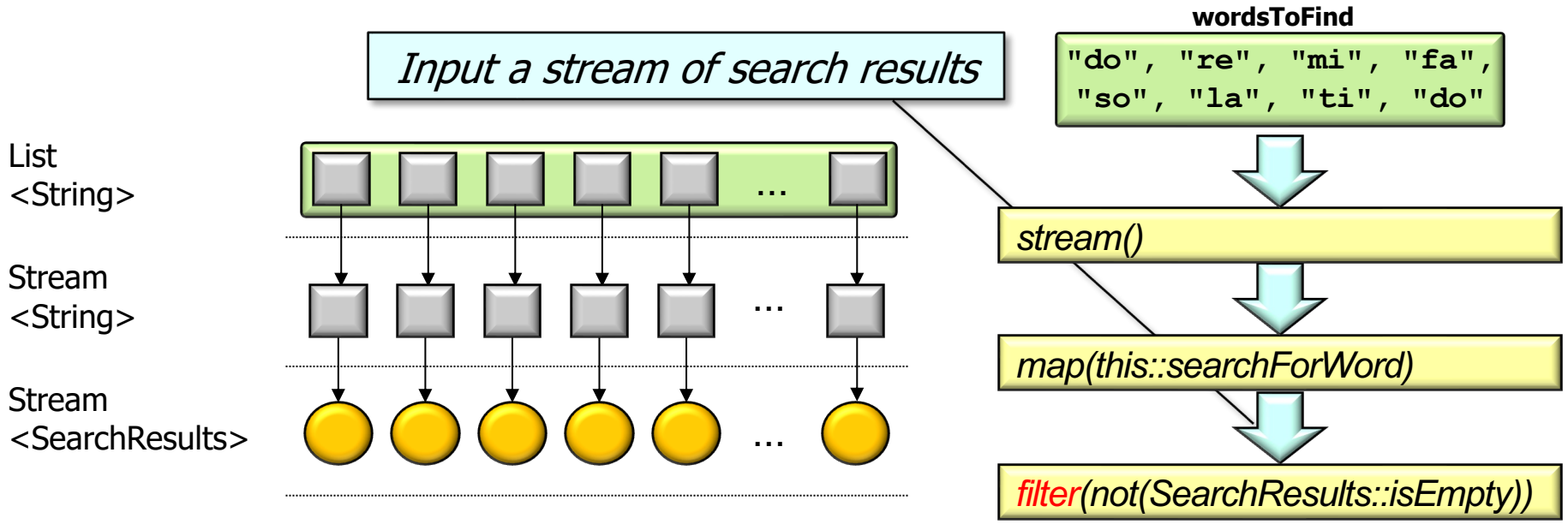

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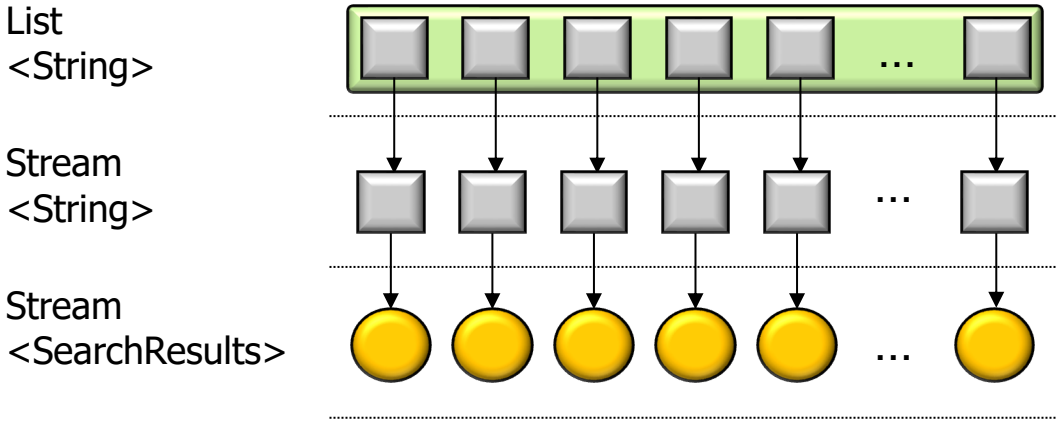

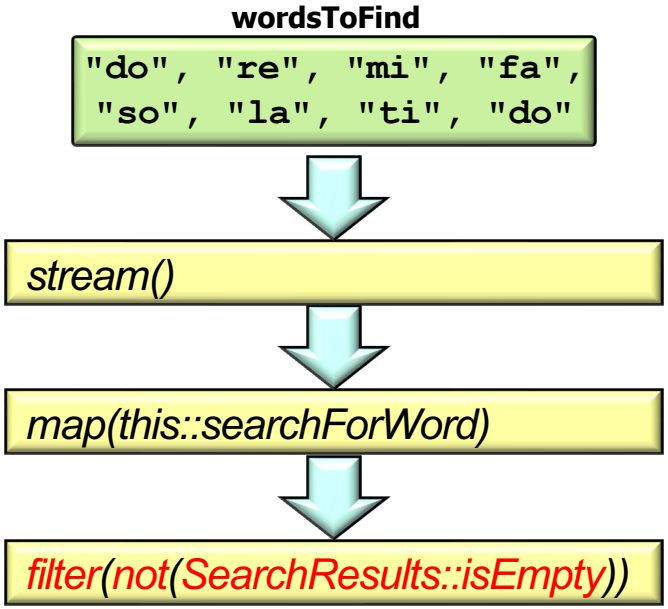

Remove empty search results from the stream

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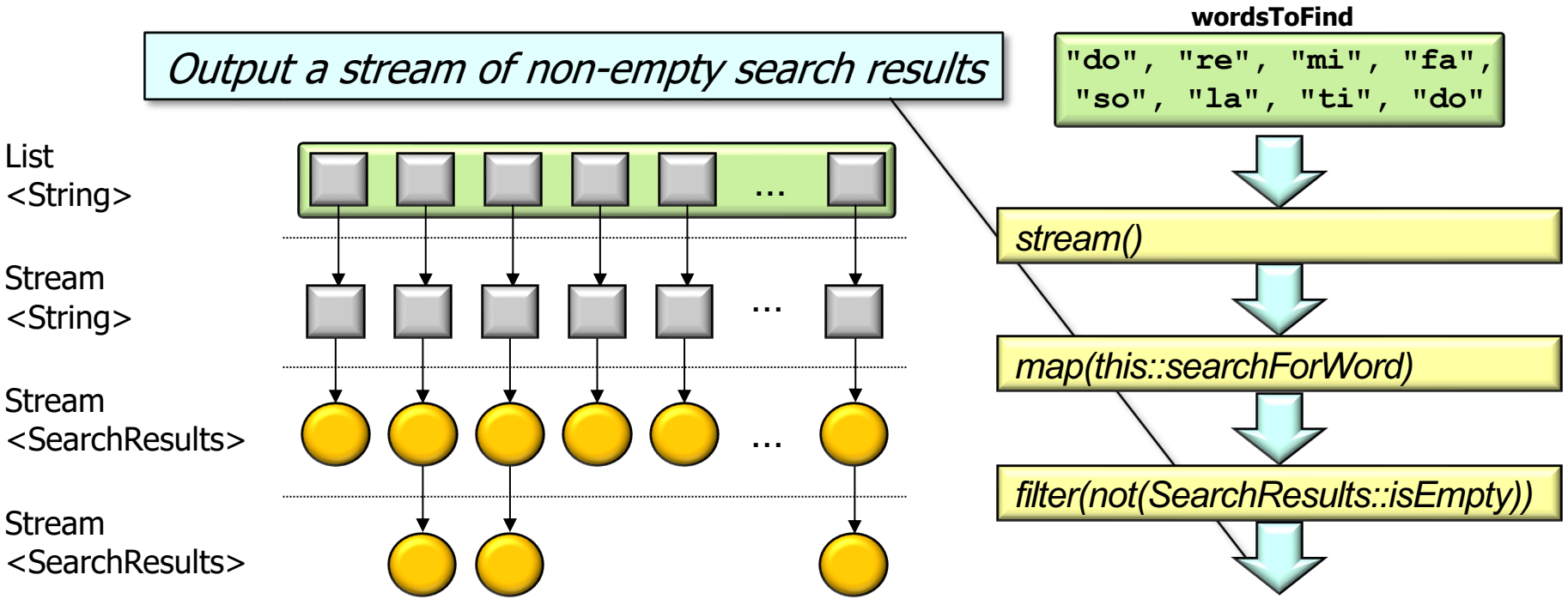

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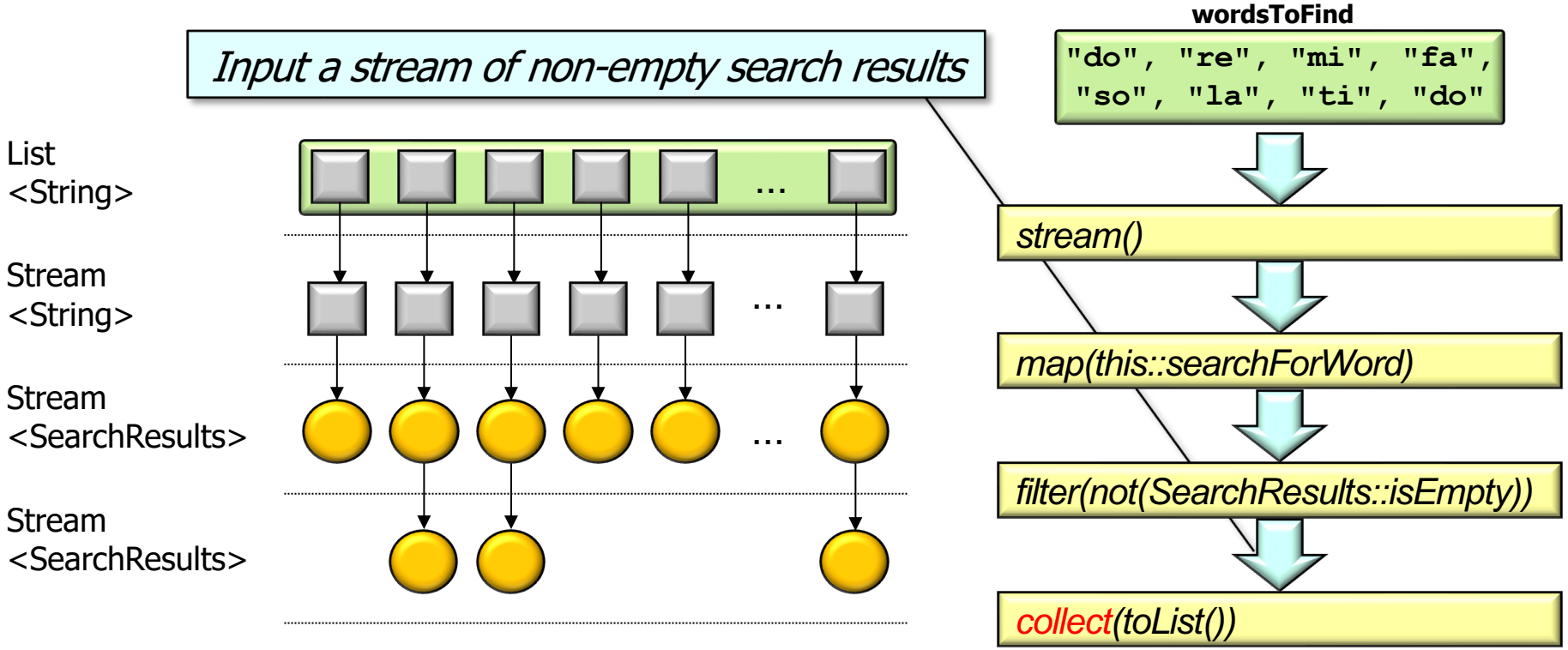

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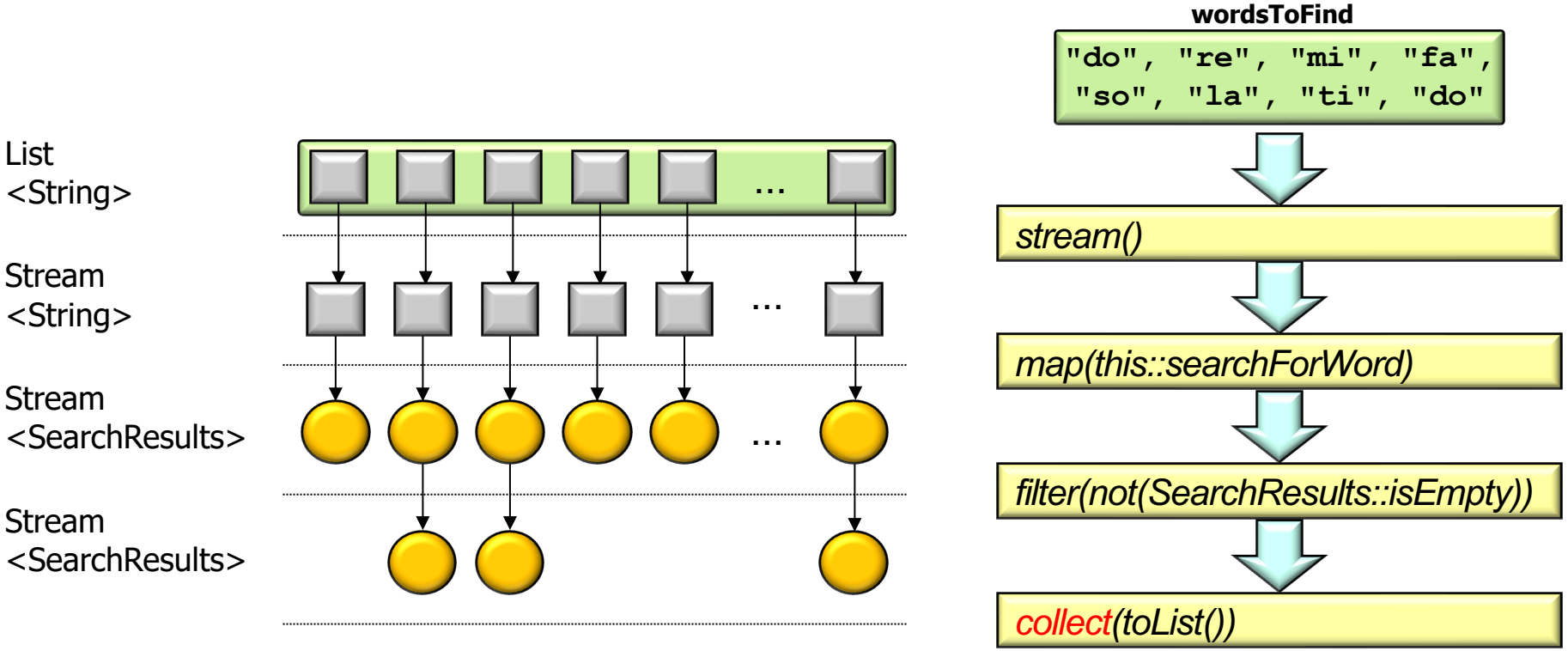

Trigger intermediate operation processing

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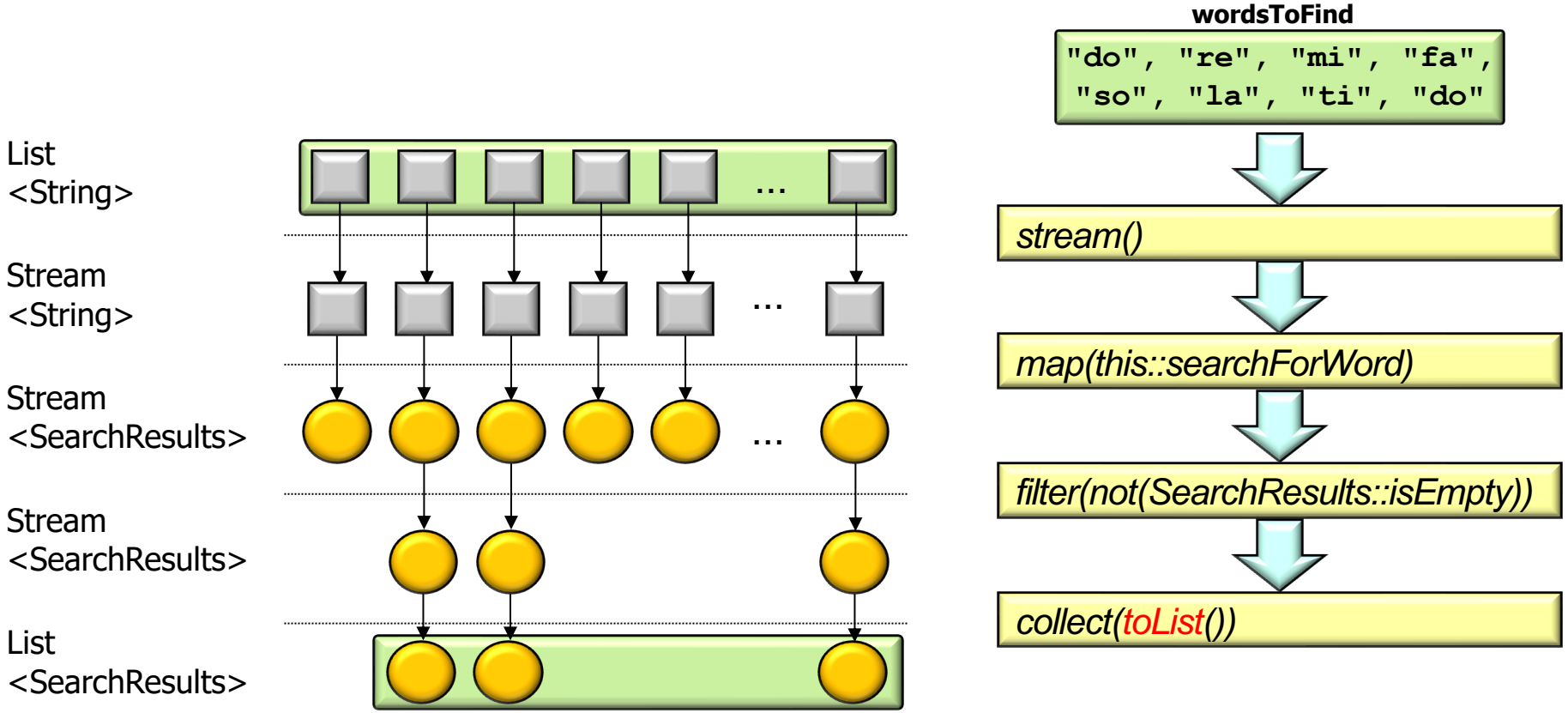
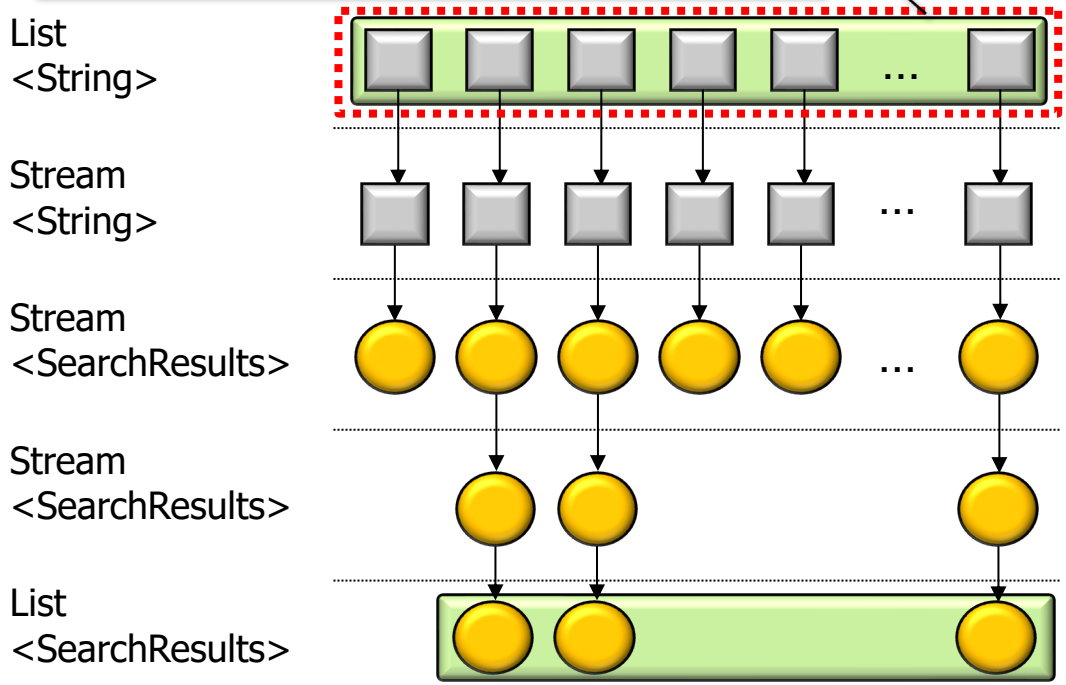


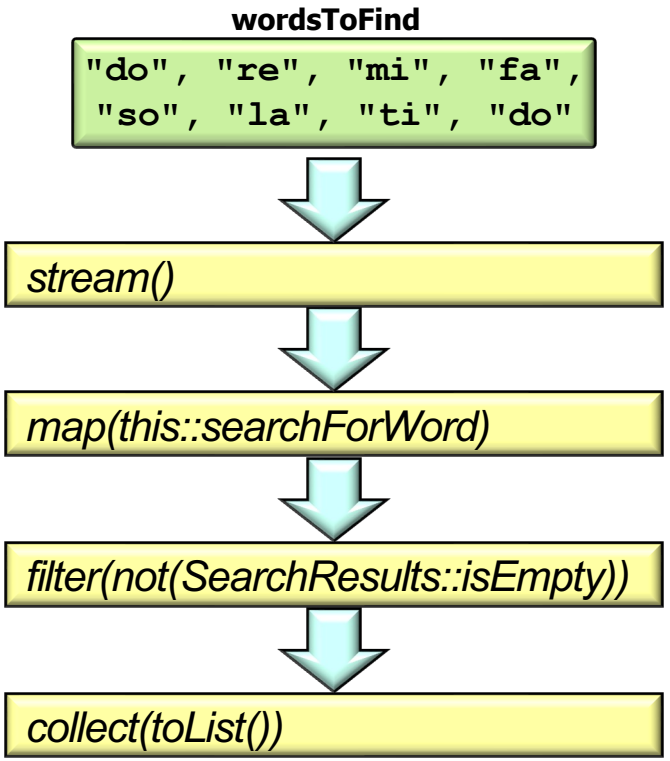
Return a list of non-empty search results

Visualizing the WordSearcher.findWords() Method

- The "physical" processing of a stream differs from the "logical" model

It may appear that each "row" of data is processed from "left to right"





See www.ibm.com/developerworks/library/j-java-streams-3-brian-goetz

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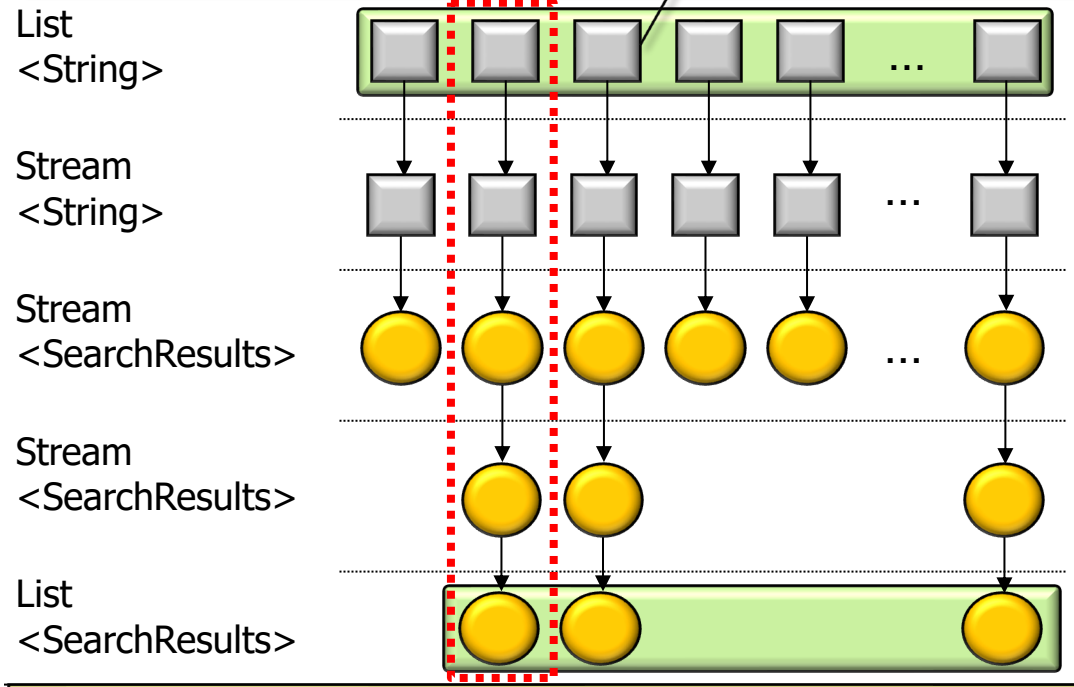
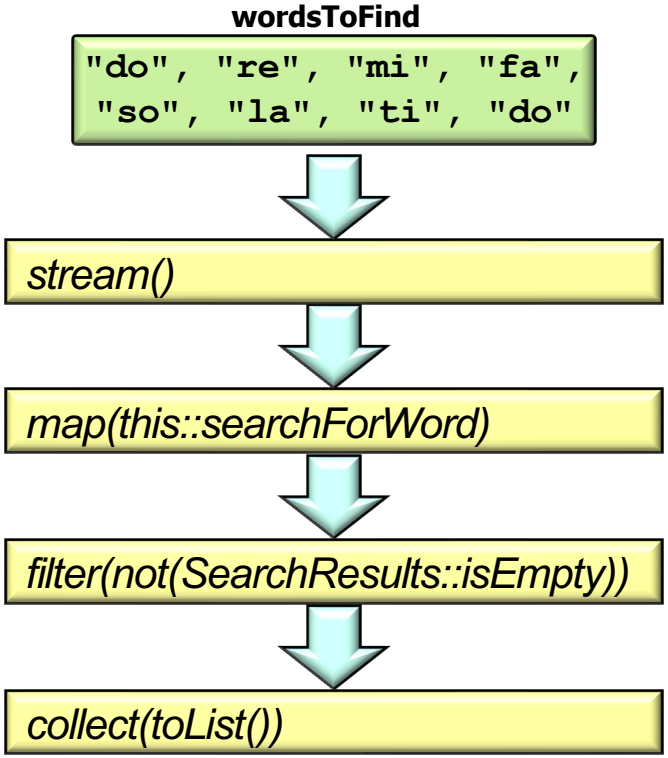
- The "physical" processing of a stream differs from the "logical" model

However, each element is actually "pulled" from the source through each aggregate operation





This implementation is much more efficient & supports "short-circuit" operations

End of Visualizing the Word Searcher.findWords() Method