Understand Java Streams Intermediate Operations dropWhile() & takeWhile()

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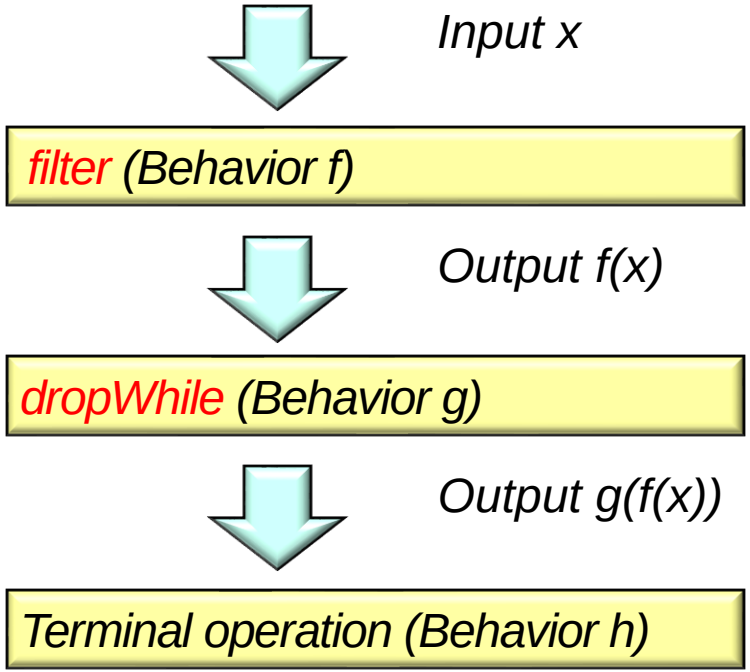
Learning Objectives in this Part of the Lesson

- Understand the structure & functionality of stream aggregate operations
  - Intermediate operations
    - map() & mapToInt()
    - filter() & flatMap()
    - dropWhile() & takeWhile()



These are both stateful, short-circuiting operations introduced in Java 9

Overview of the dropWhile() Intermediate Operation

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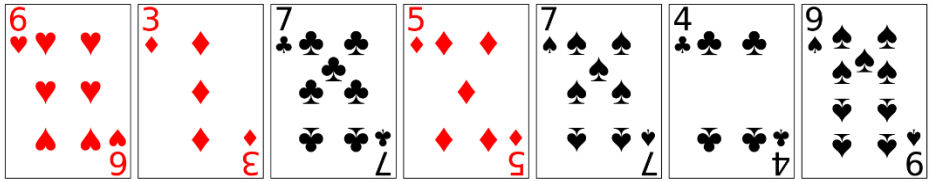

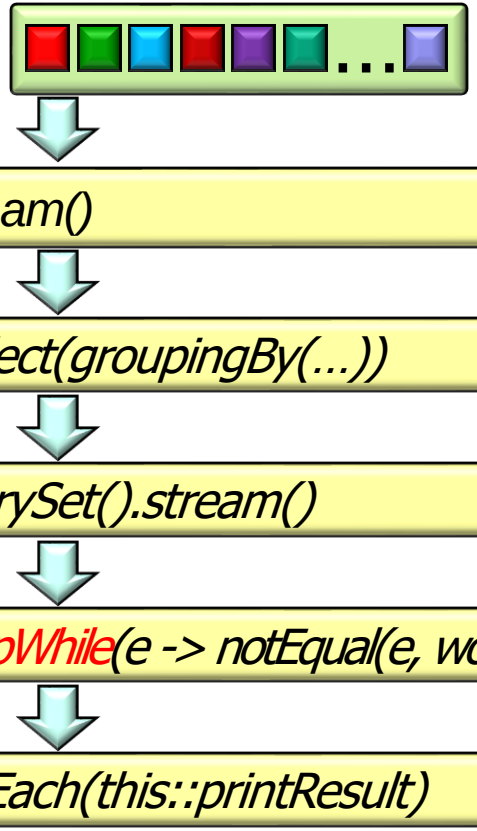

If stream is unordered, return a stream consisting of the remaining elements of this stream after dropping a subset of elements that match the given predicate.

See docs.oracle.com/javase/9/docs/api/java/util/stream/Stream.html#dropWhile

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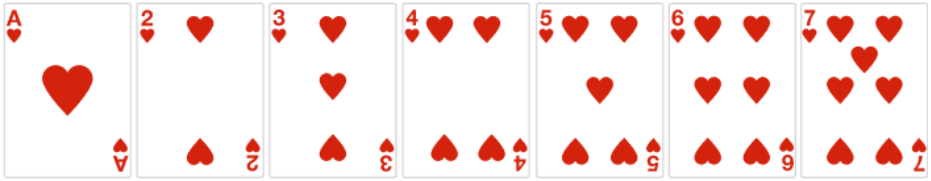

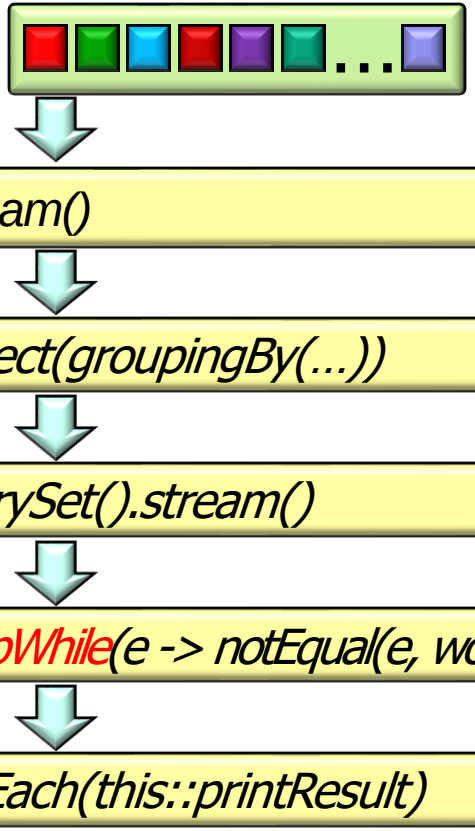

If stream is ordered, return a stream containing the remaining elements of this stream after dropping the longest prefix of elements matching the given predicate.

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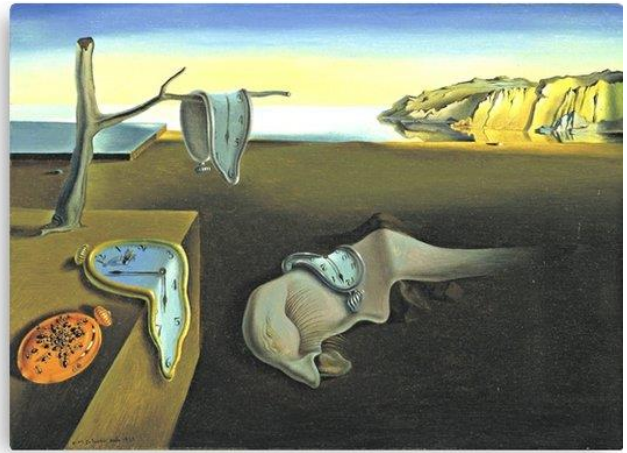

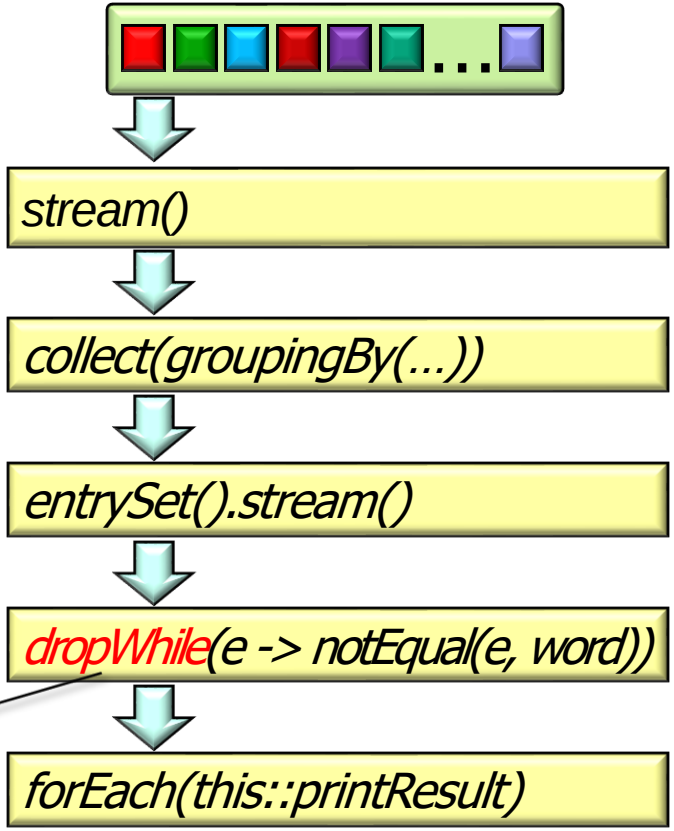

dropWhile() is a "stateful" operation that is costly on ordered parallel streams since threads must cooperate to find the longest contiguous sequence of matching elements in encounter order.

See blog.indrek.io/articles/whats-new-in-java-9-streams

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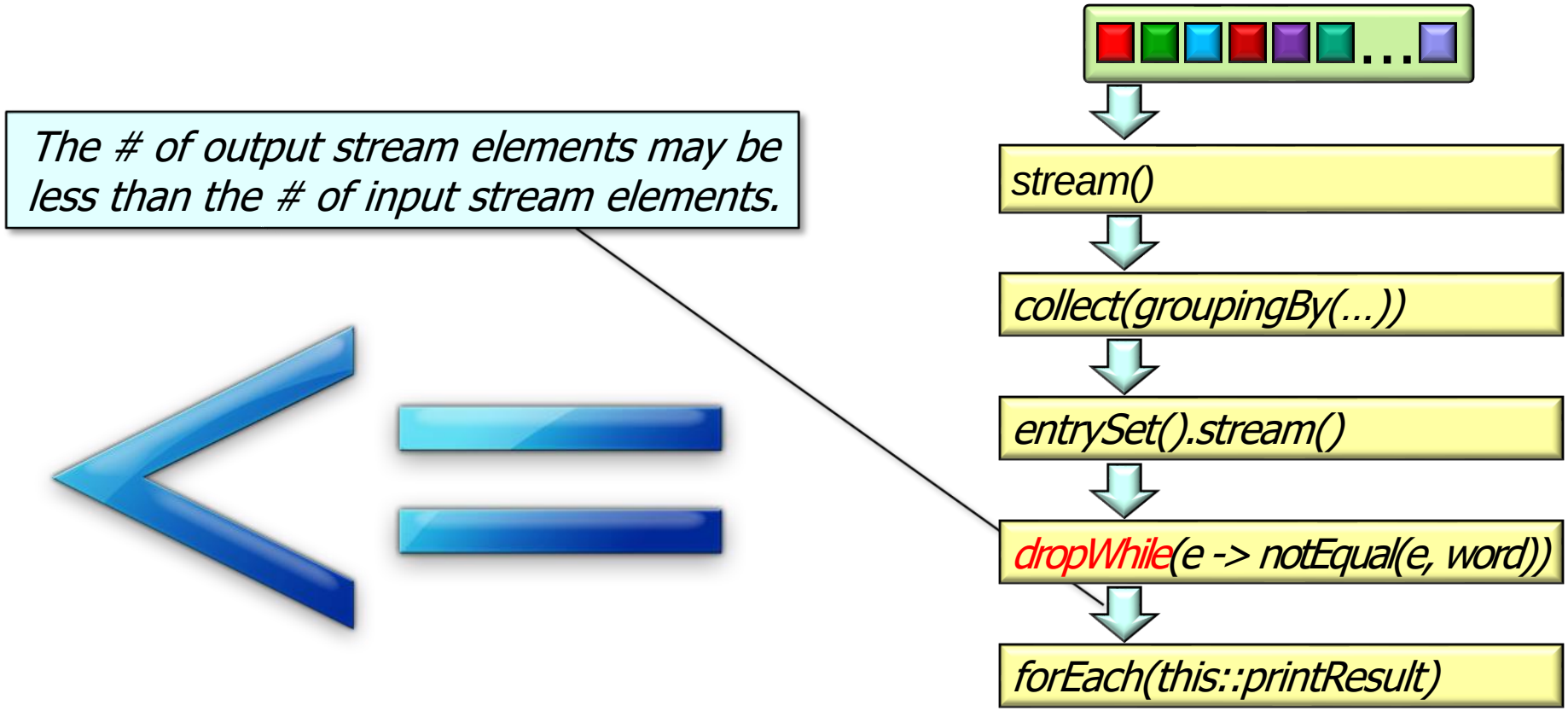
- Example of applying dropWhile() in the SimpleSearchStream program



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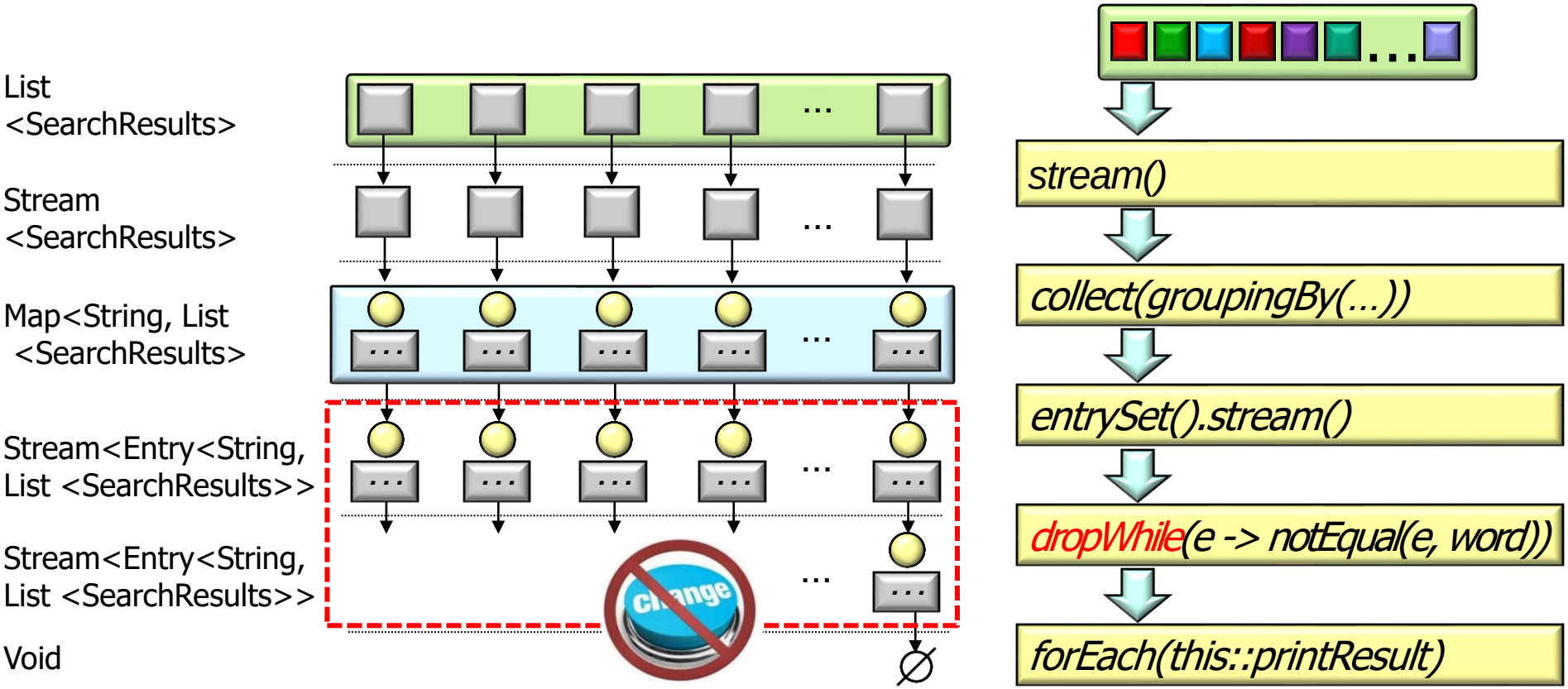

dropWhile() also *can't* change the type or values of elements it processes

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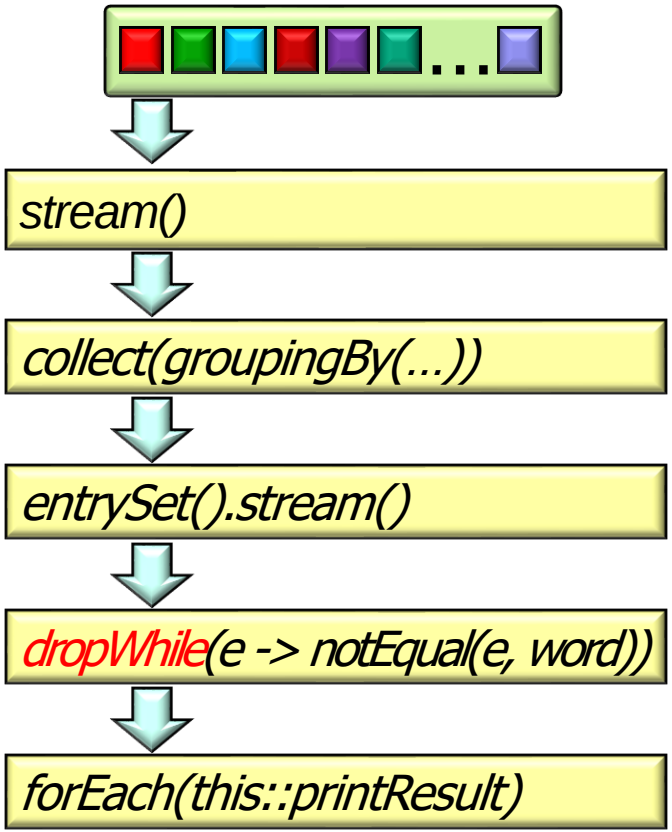

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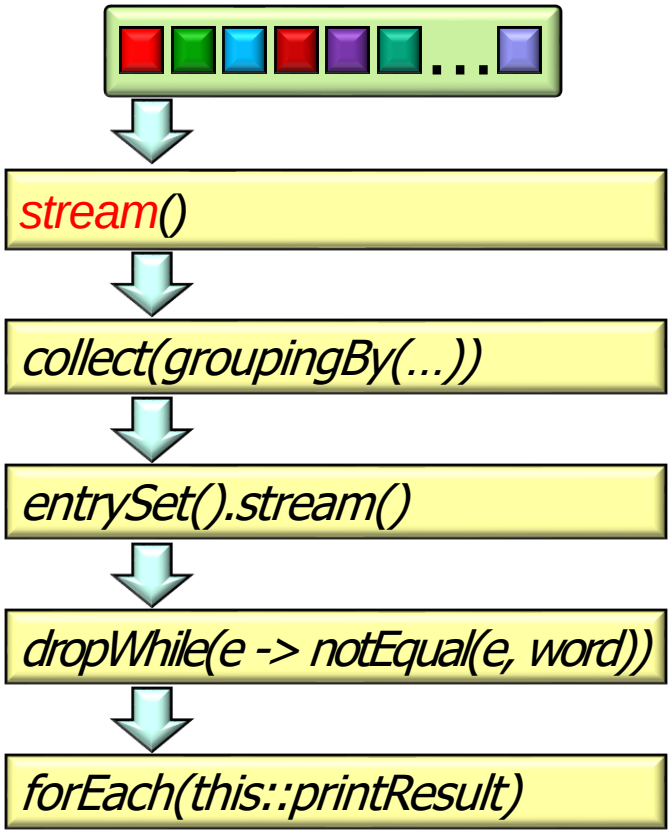
Convert list of search results into a stream



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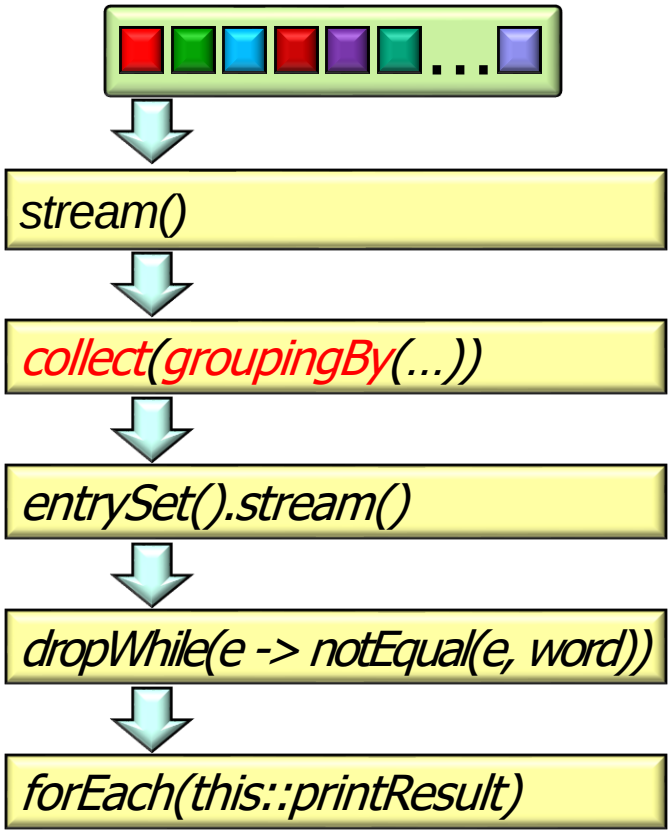
Collect stream into a map with words as key



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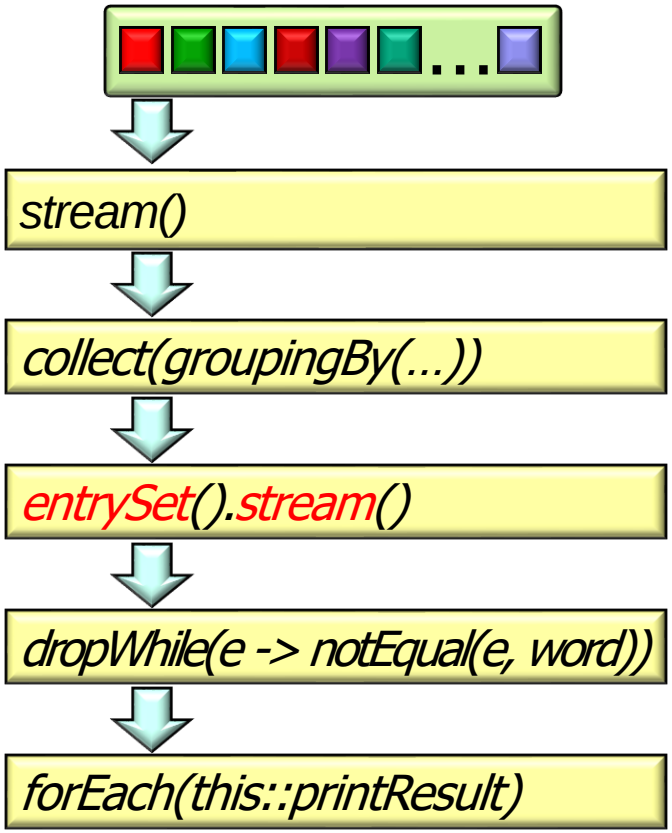
Convert map into a stream of entries



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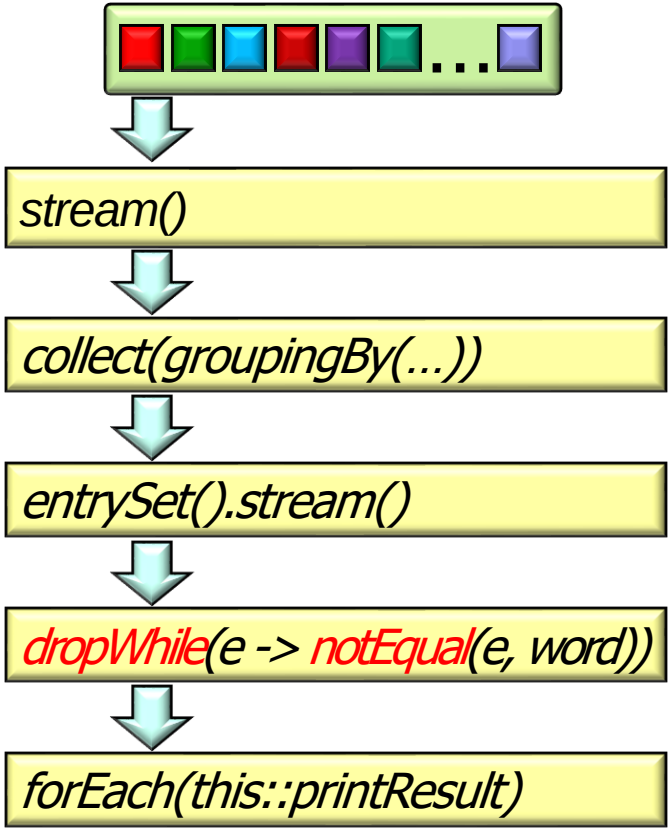
Ignore entries until there's a match



`notEqual()` is defined as `return !e.getKey().equals(word)`

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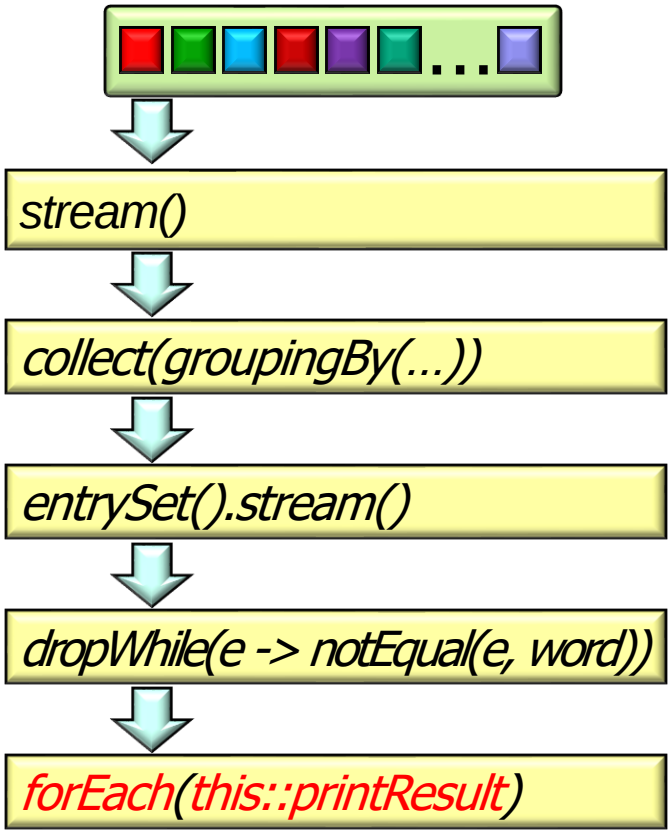

Print results starting at the match

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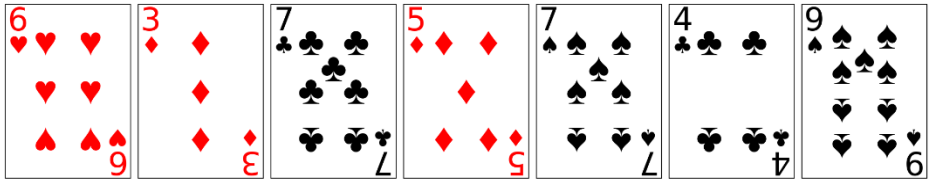

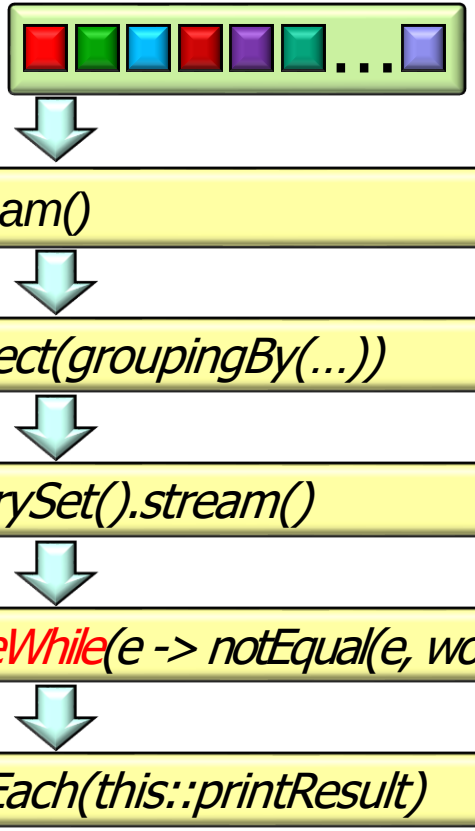

If this stream is unordered then return a stream consisting of a subset of elements taken from this stream that match the given predicate.

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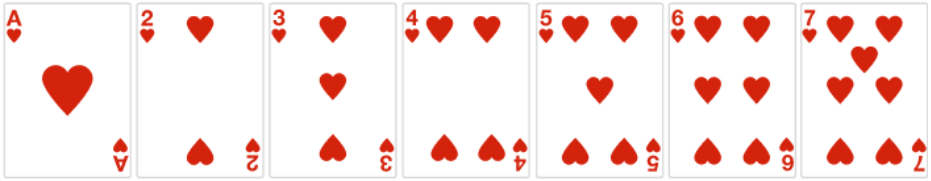

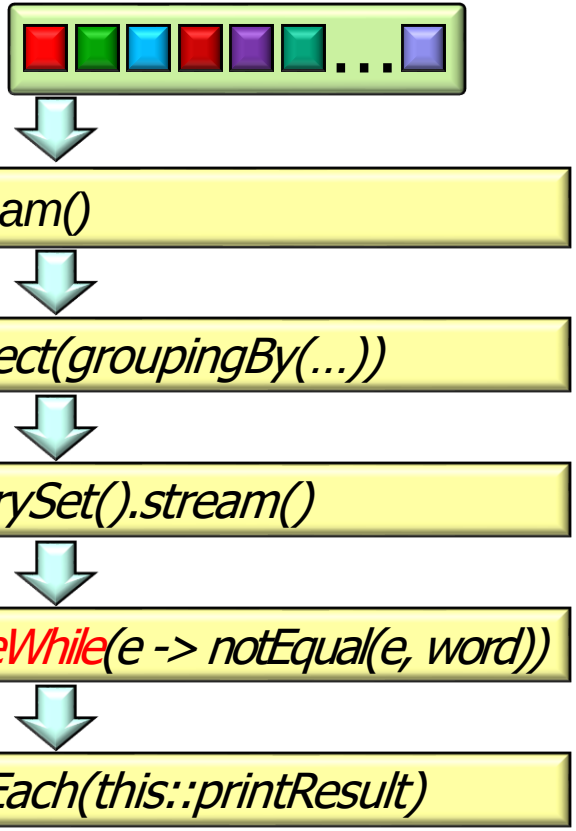

If this stream is ordered then return a stream consisting of the longest prefix of elements taken from this stream that match the given predicate.

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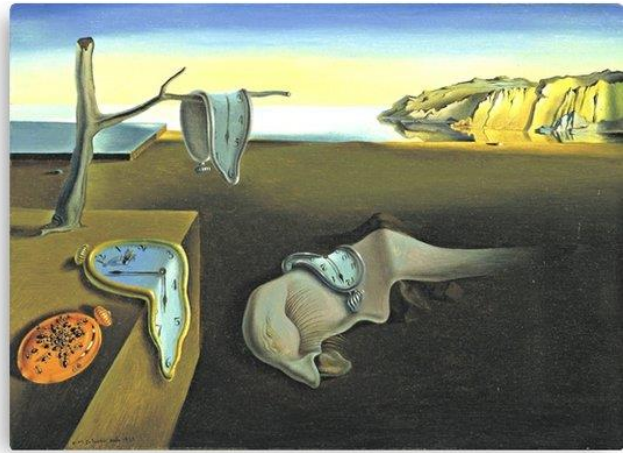

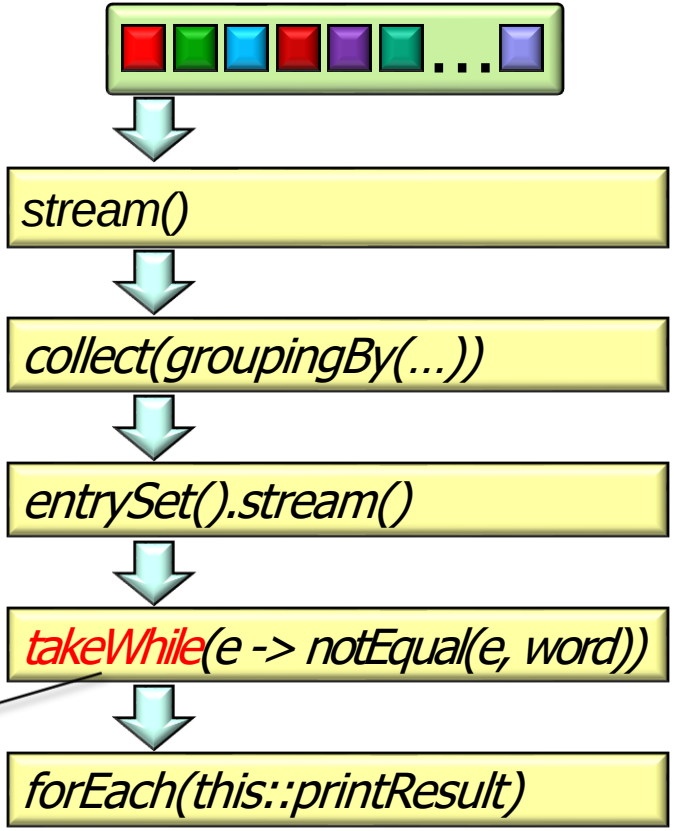

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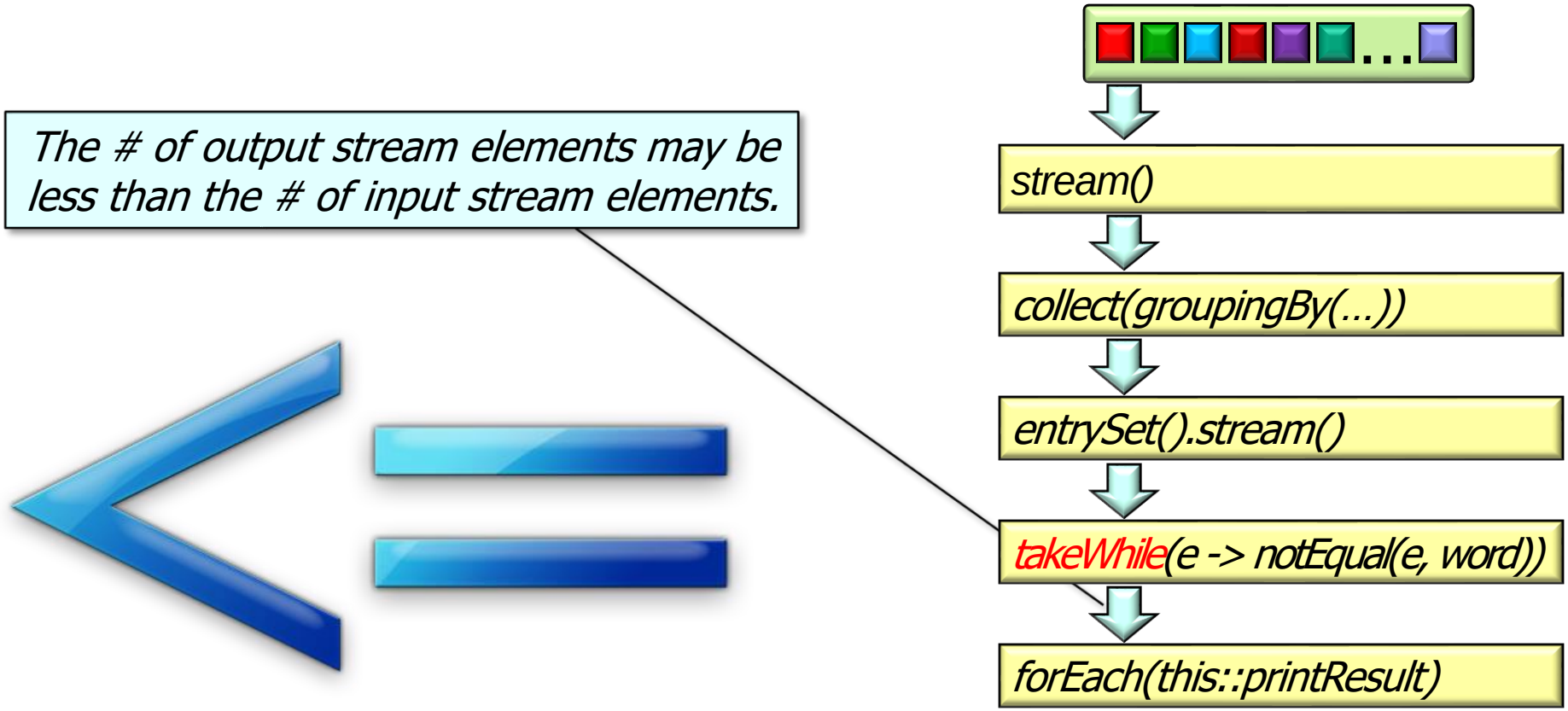

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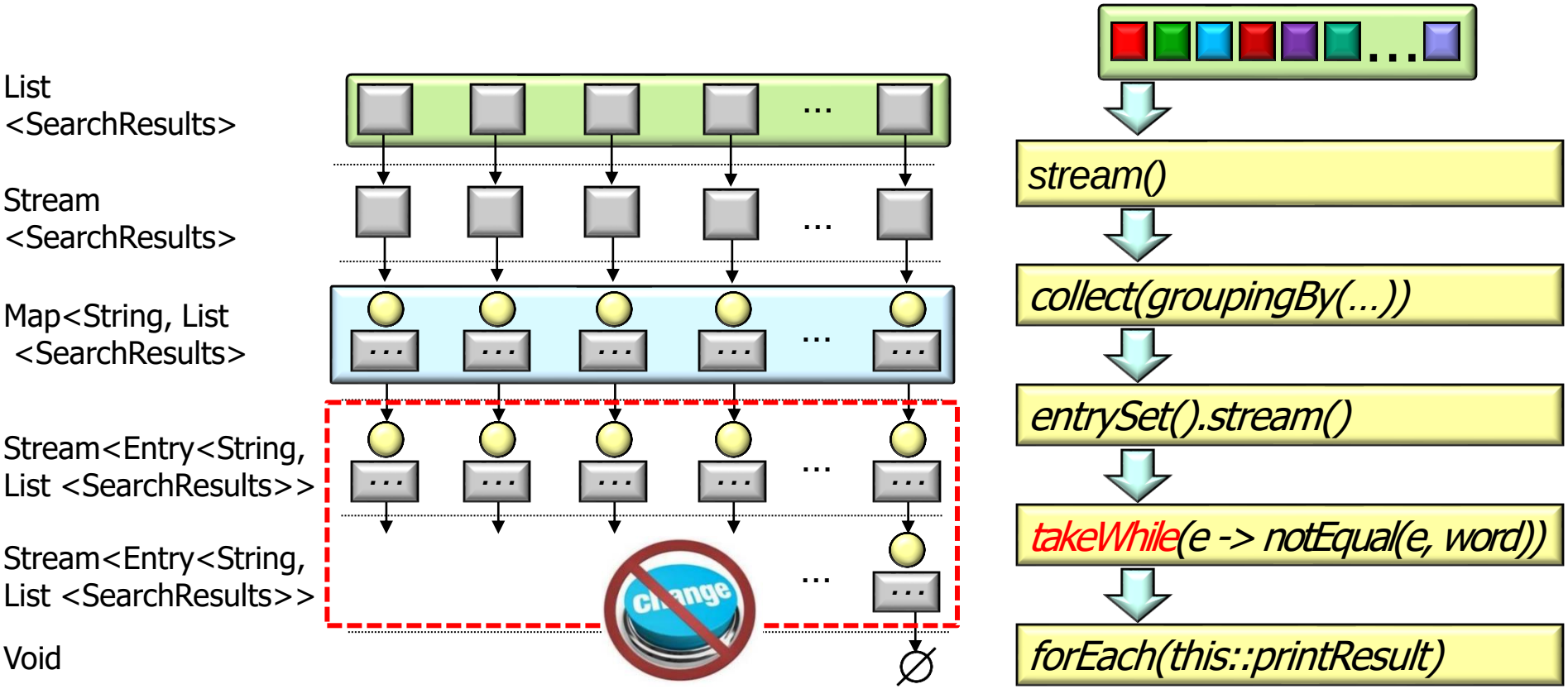

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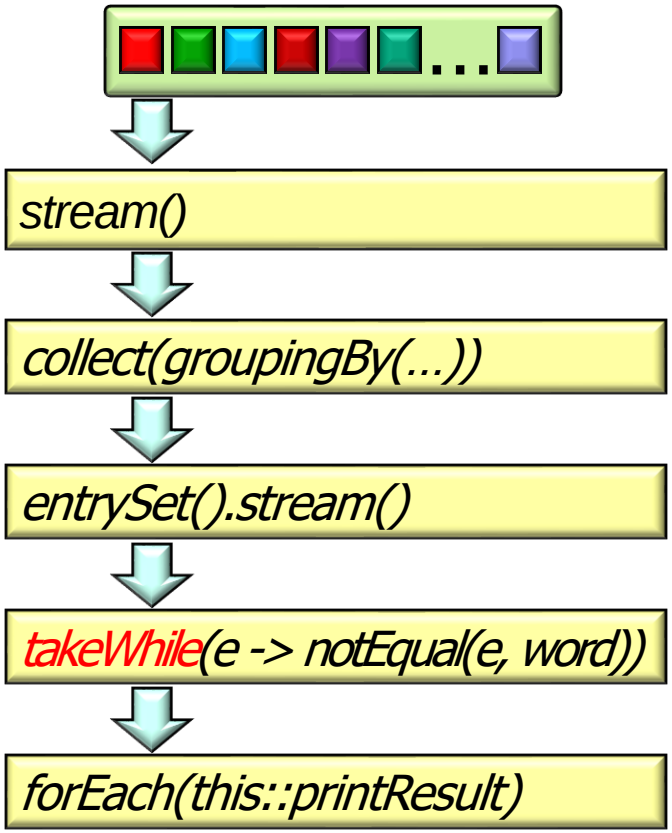

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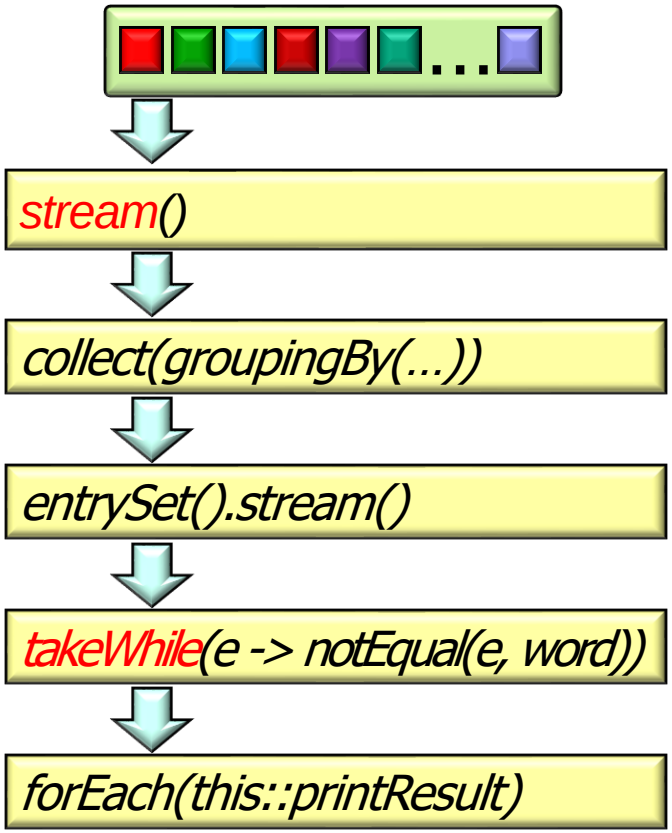

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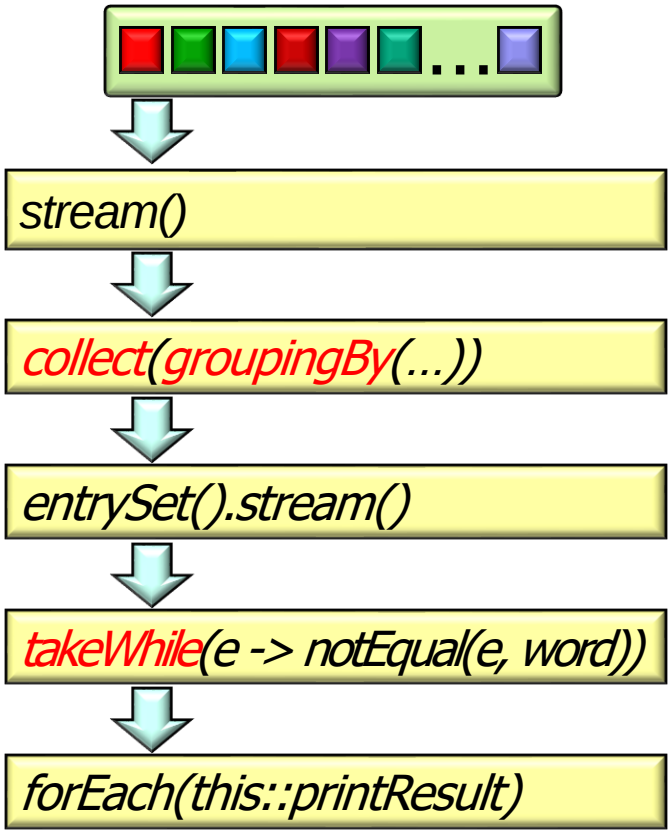

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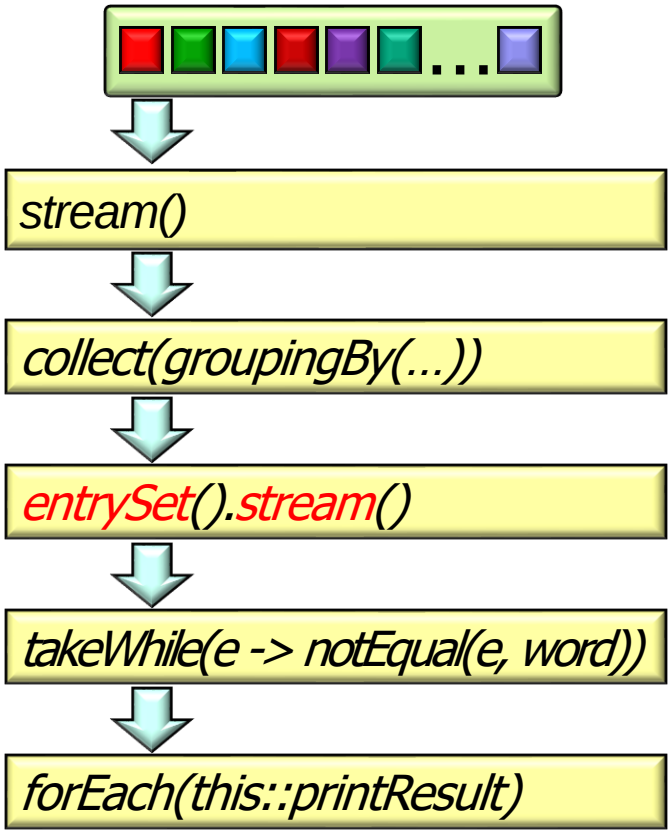

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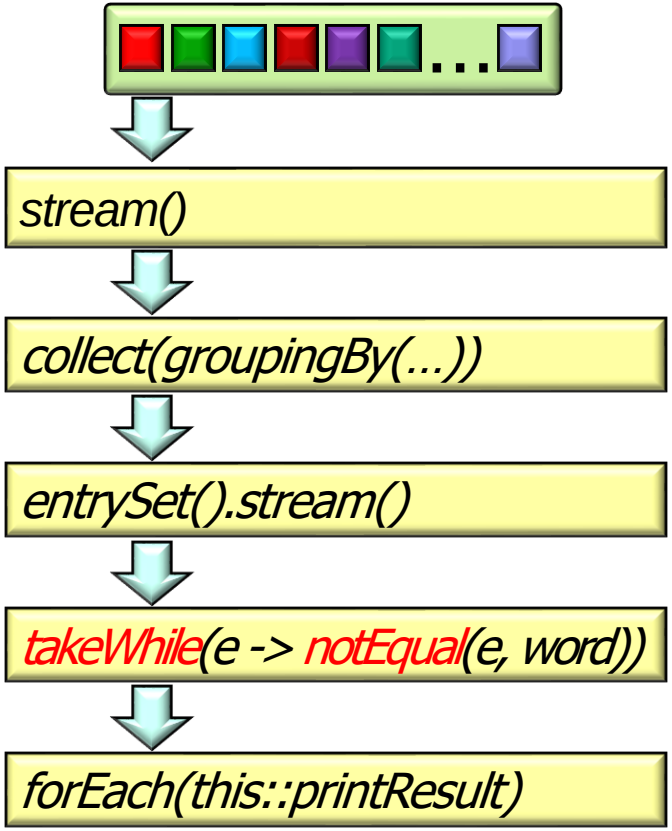
Return entries until there's a match



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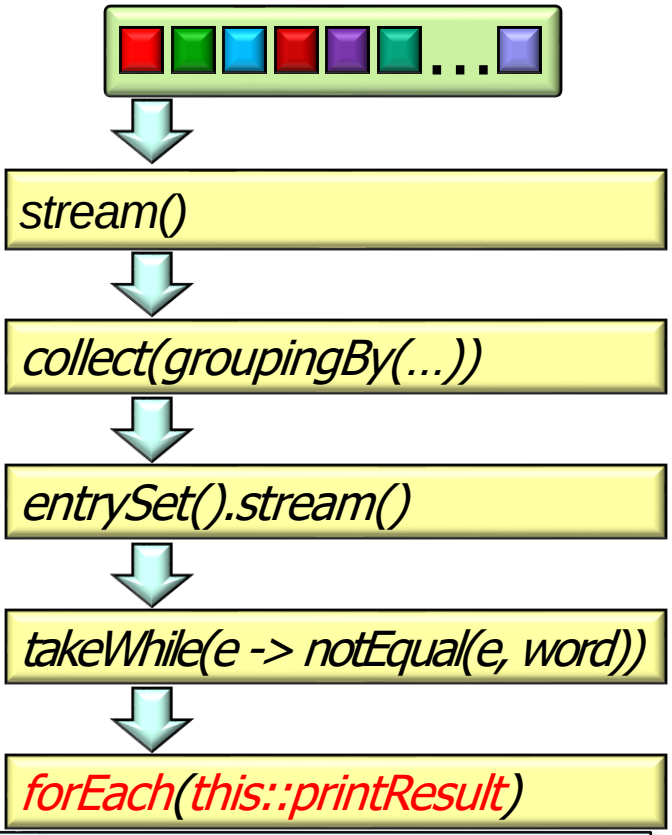

Print results starting at the beginning & continuing up to (but not including) the match

End of Understand Java Streams Intermediate Operations dropWhile() & takeWhile()