Java Parallel ImageStreamGang Example: Visualizing Behaviors

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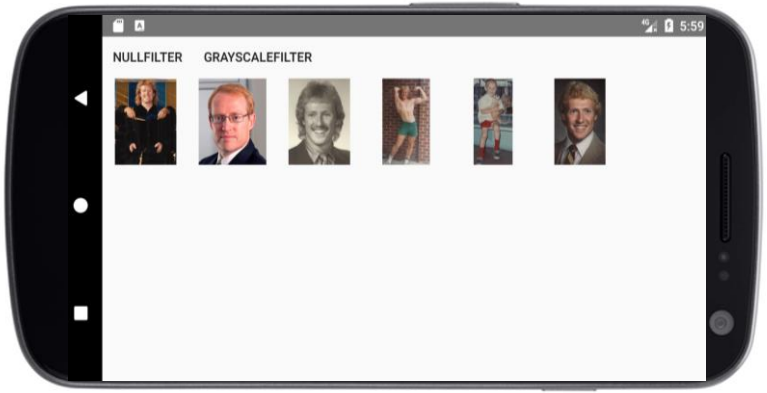
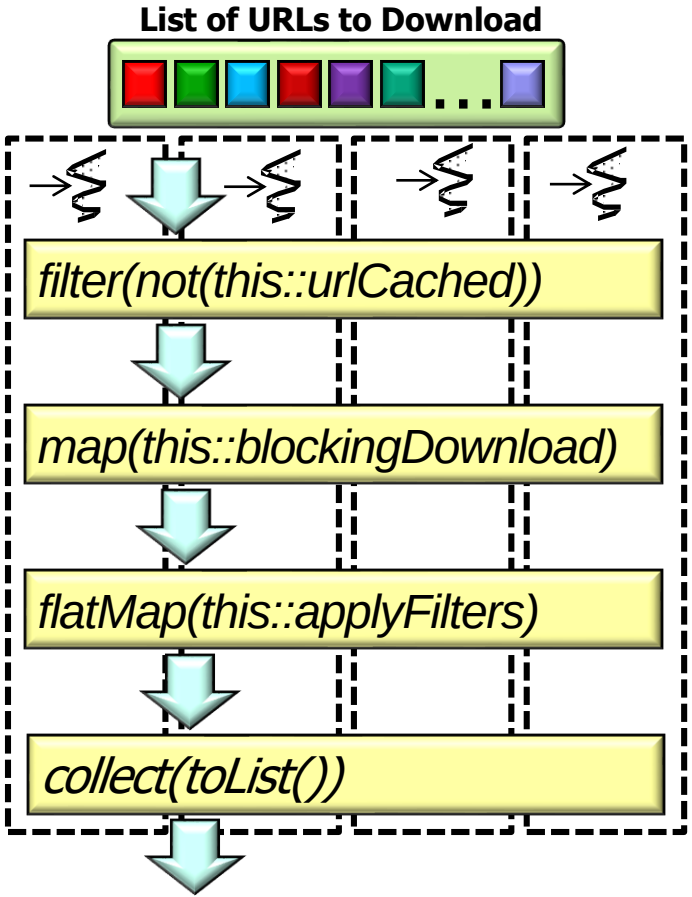
Learning Objectives in this Part of the Lesson

- Recognize the structure/functionality of the ImageStreamGang app
- Know how Java parallel streams are applied to the ImageStreamGang app

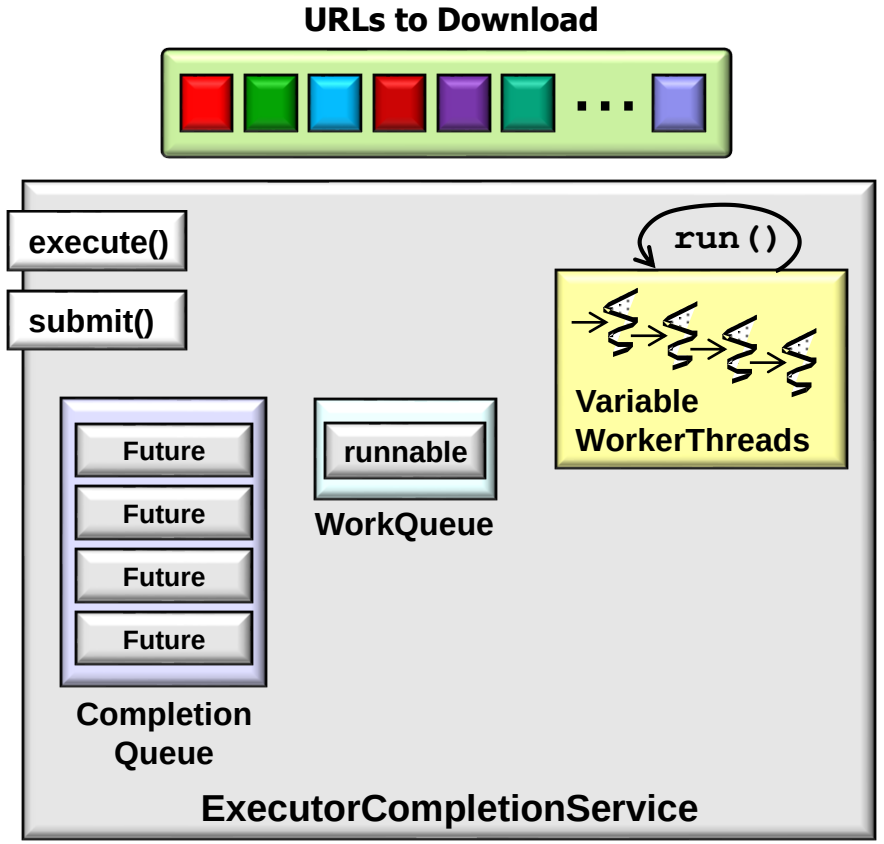




See github.com/douglascraigschmidt/LiveLessons/blob/master/ImageStreamGang

Learning Objectives in this Part of the Lesson

- Recognize the structure/functionality of the ImageStreamGang app
- Know how Java parallel streams are applied to the ImageStreamGang app
  - This app enhances ImageTaskGang

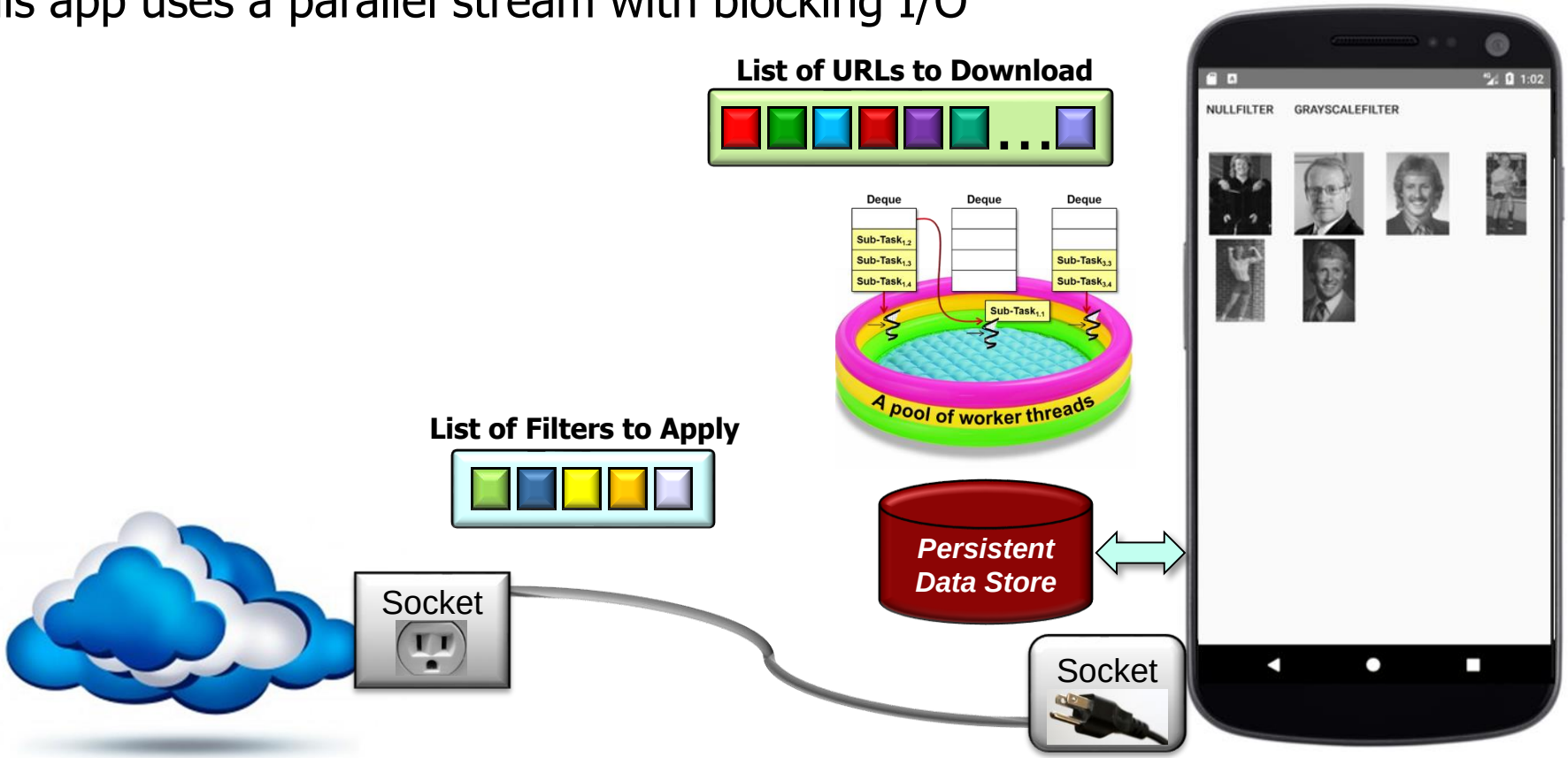


See github.com/douglascraigschmidt/LiveLessons/tree/master/ImageTaskGangApplication

Overview of Parallel Streams in ImageStreamGang

Overview of Parallel Streams in ImageStreamGang

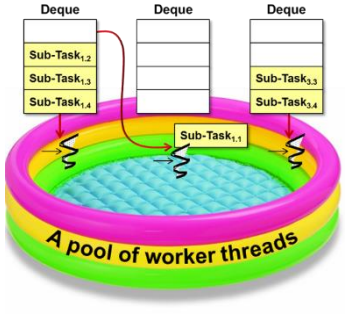
- This app uses a parallel stream with blocking I/O



See github.com/douglascraigschmidt/LiveLessons/blob/master/ImageStreamGang/AndroidGUI

Overview of Parallel Streams in ImageStreamGang

- This app uses a parallel stream with blocking I/O
  - Ignore cached images
  - Download non-cached images
  - Apply list of filters to each image
  - Store filtered images in the file system
  - Display images to the user



Combines Java object-oriented & functional programming features

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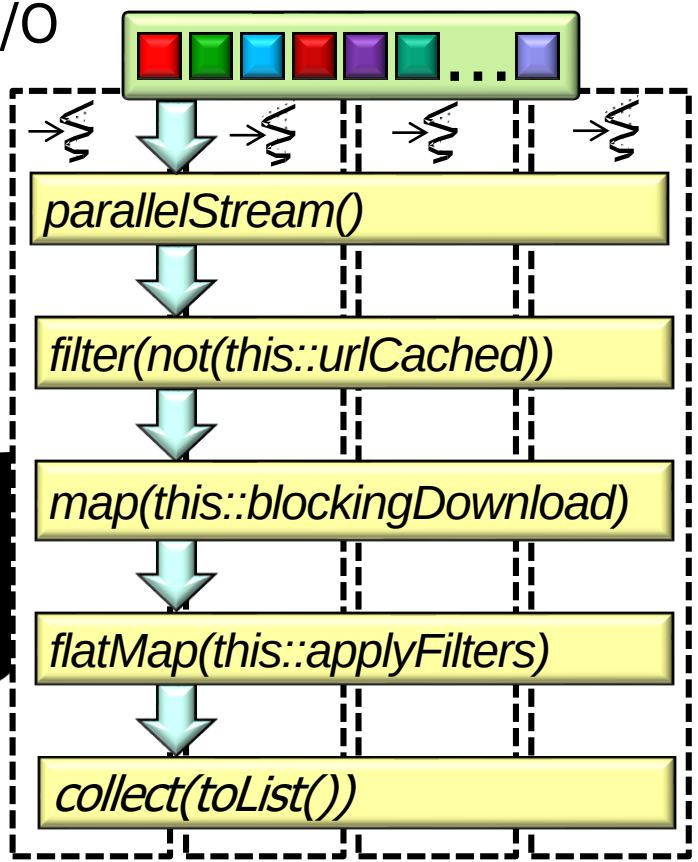

Declarative stream pipeline closely aligns with the app description

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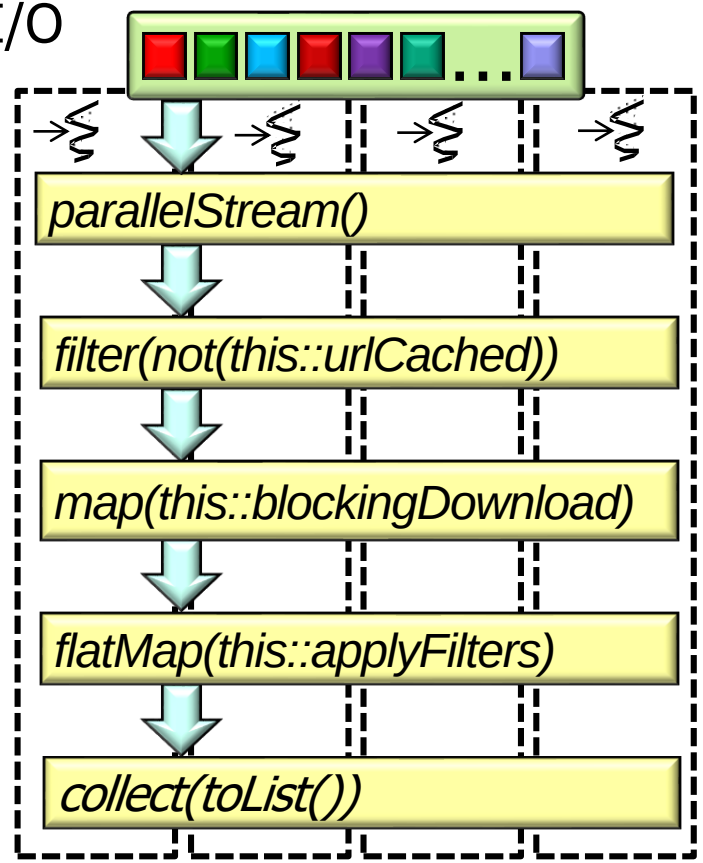

Closes gap between design intent & computations that implement the intent

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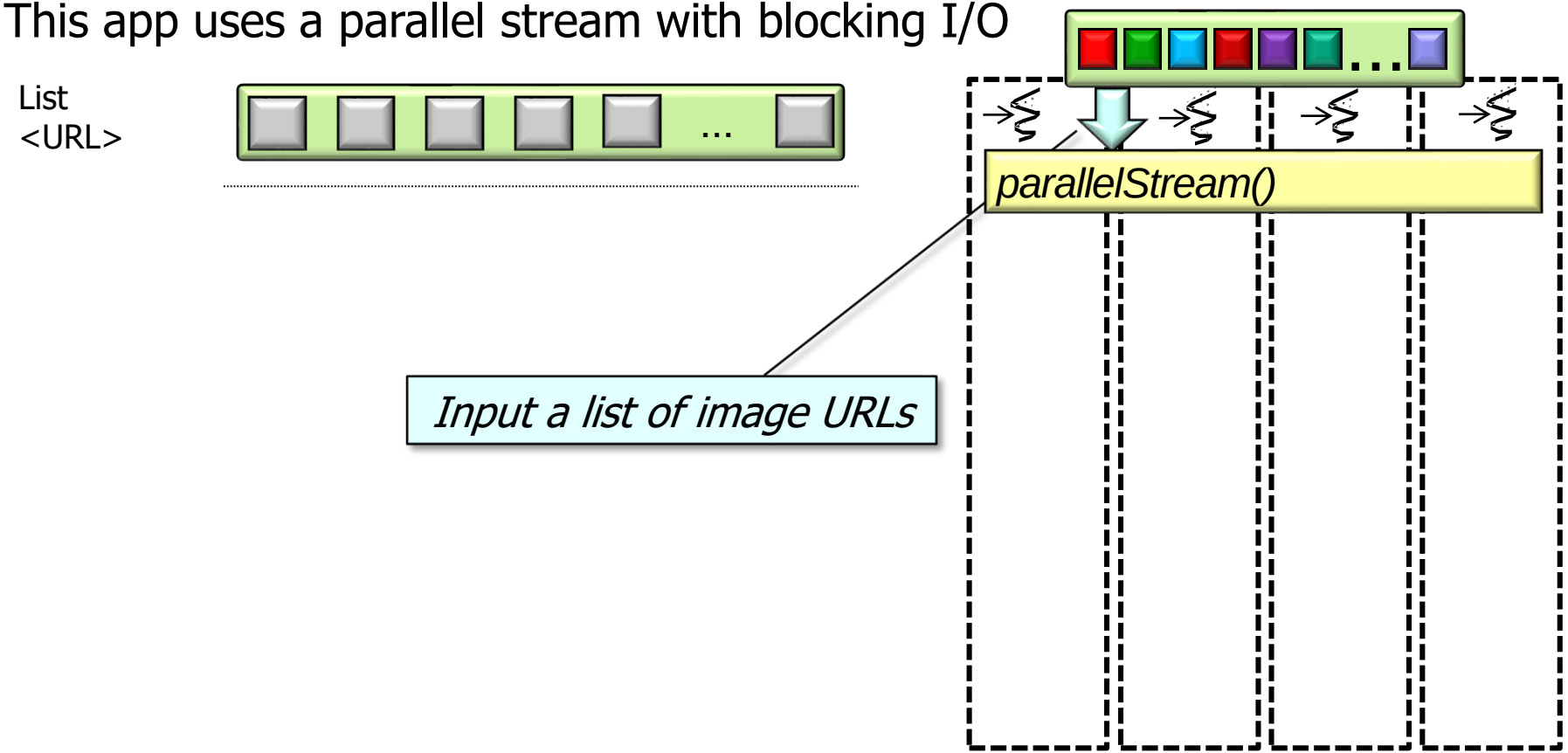
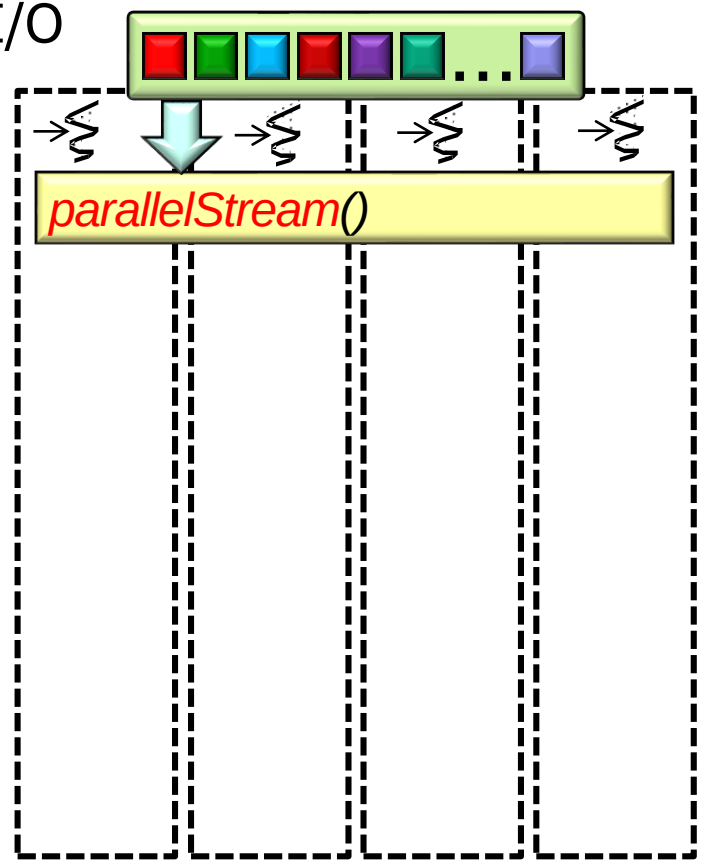


Overview of Parallel Streams in ImageStreamGang

- This app uses a parallel stream with blocking I/O

List
<URL>



Convert collection to a parallel stream

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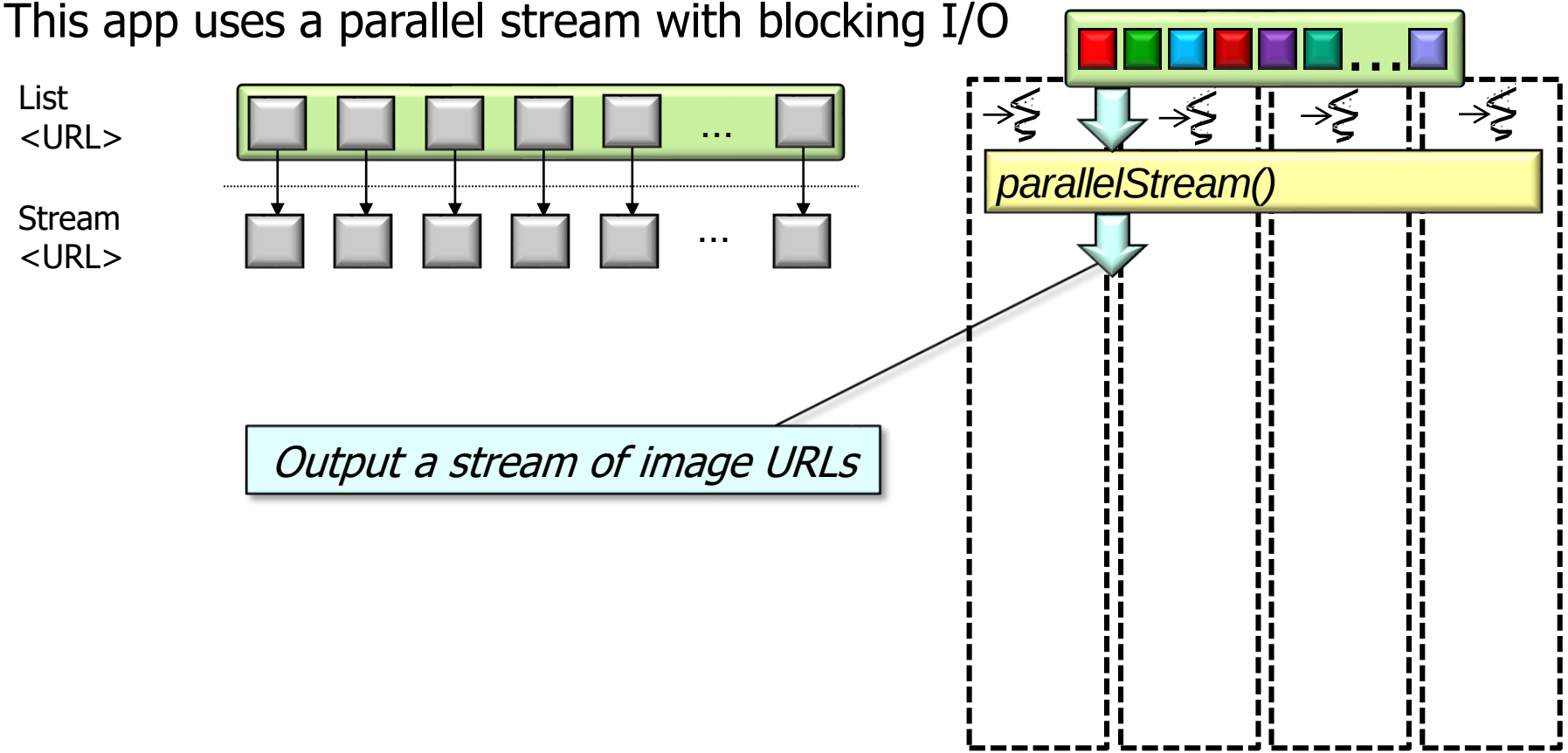

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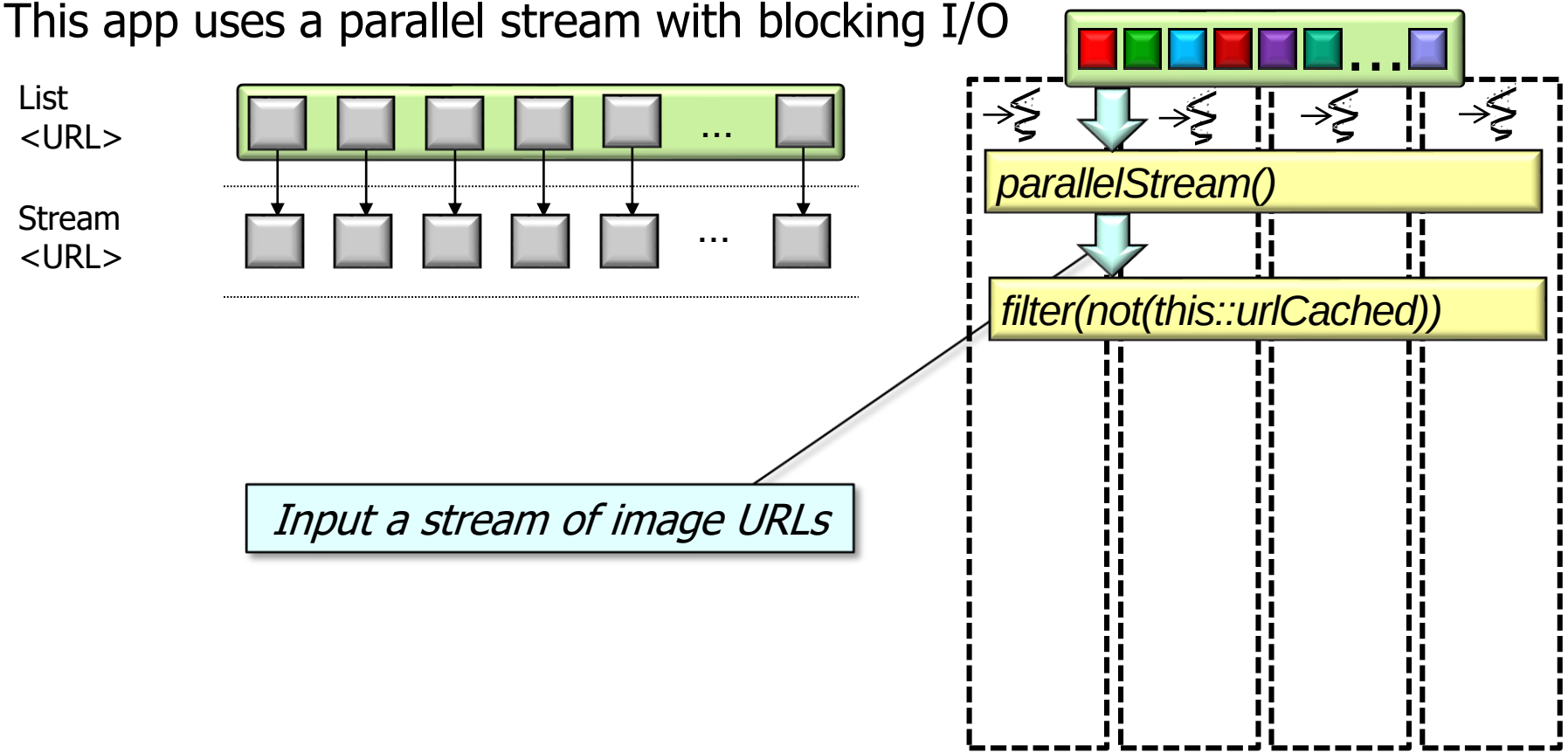

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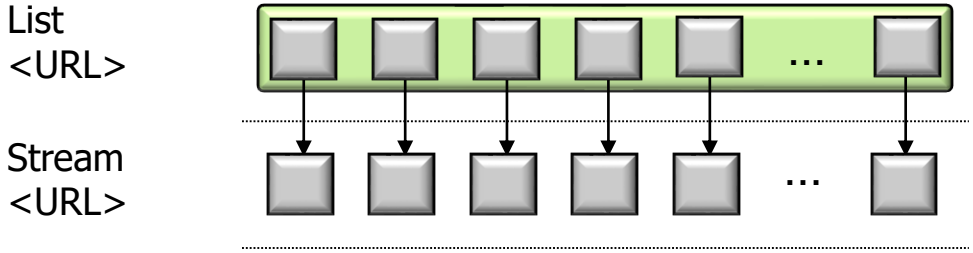

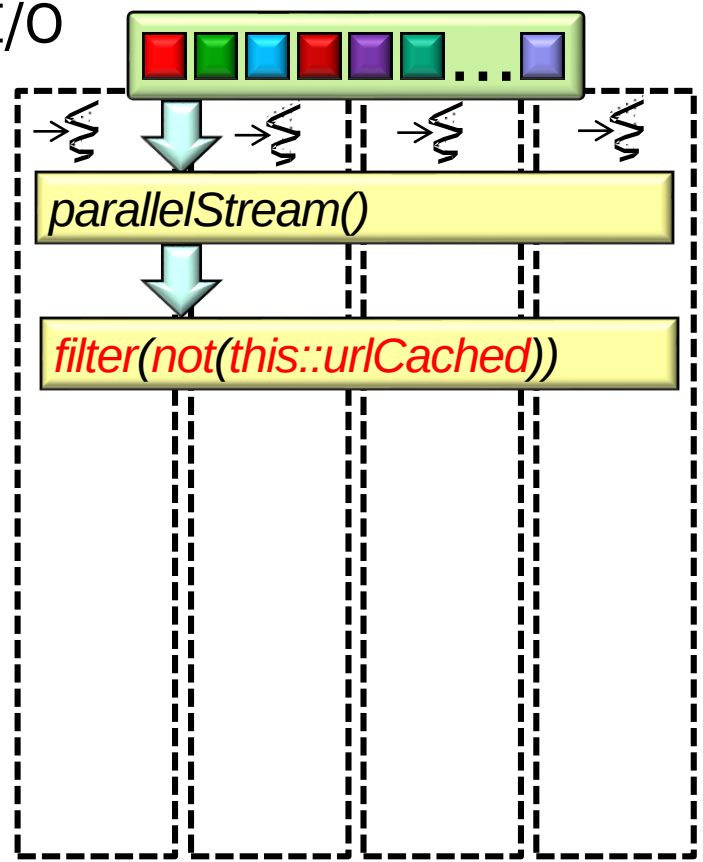

filter() ignores cached images

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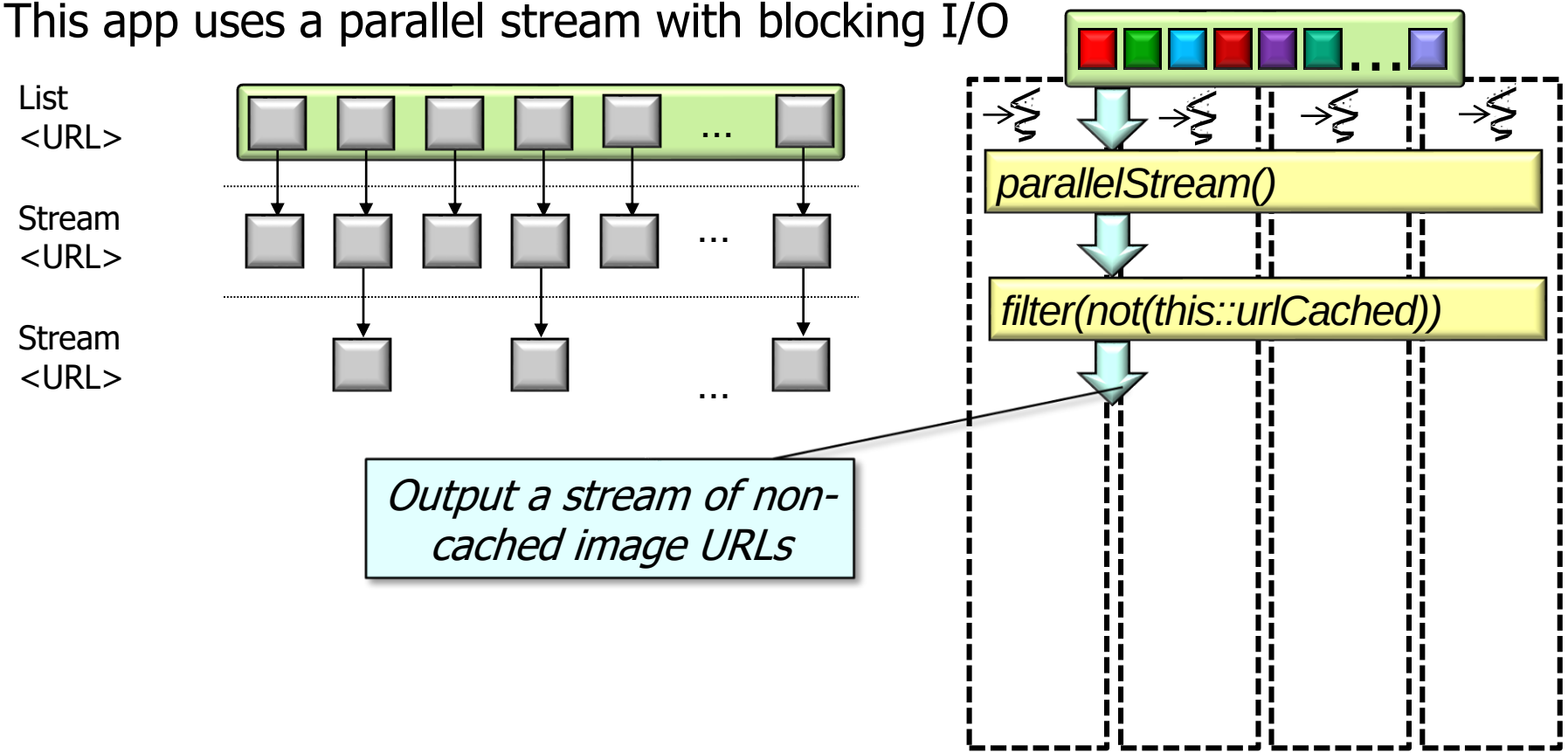

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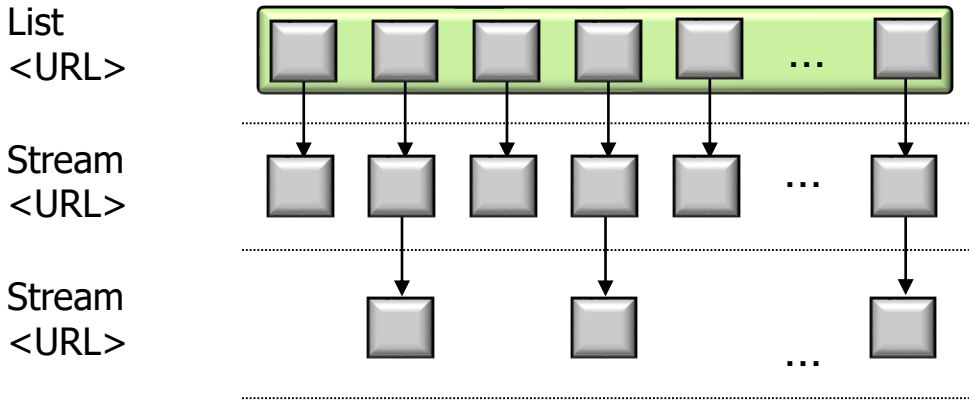

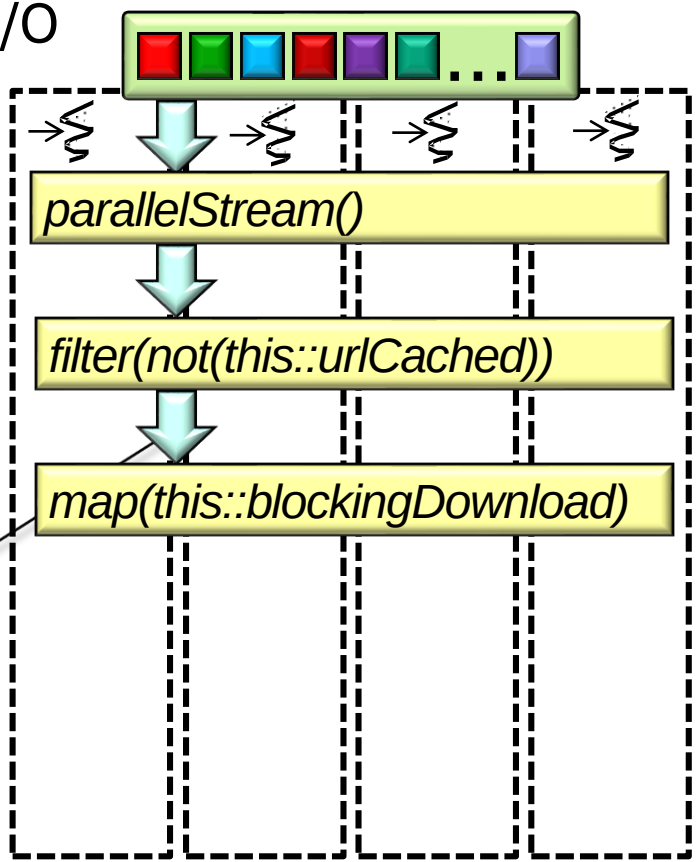

Input a stream of non-cached image URLs

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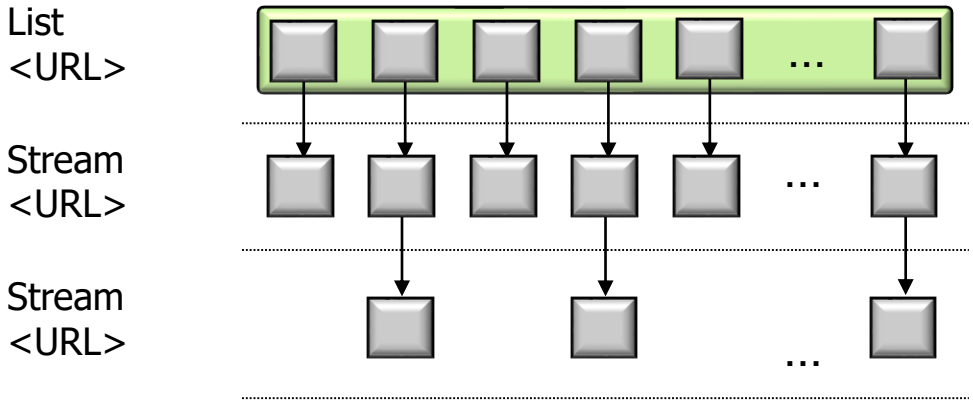

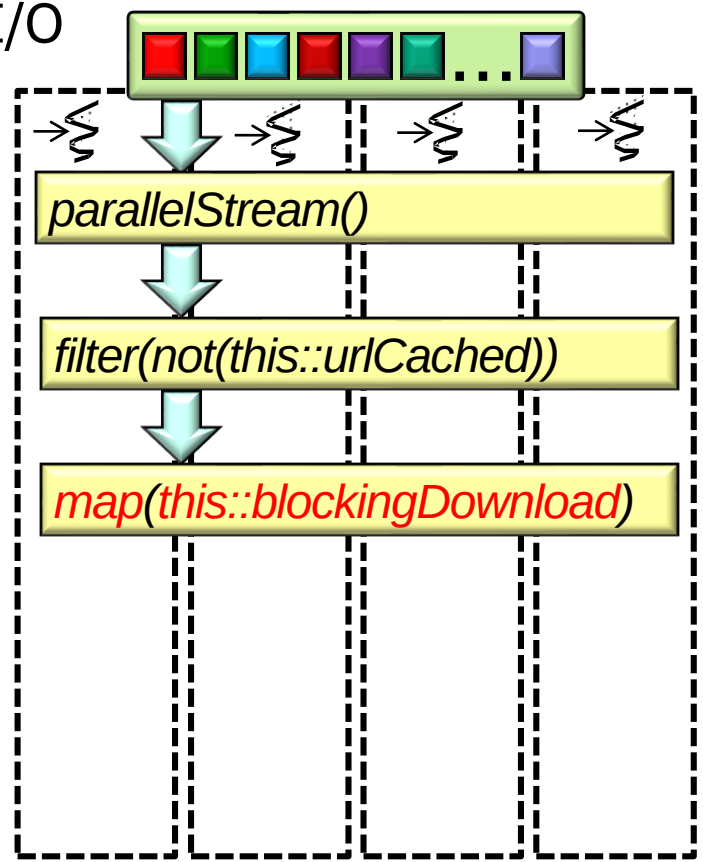

Download non-cached images in parallel

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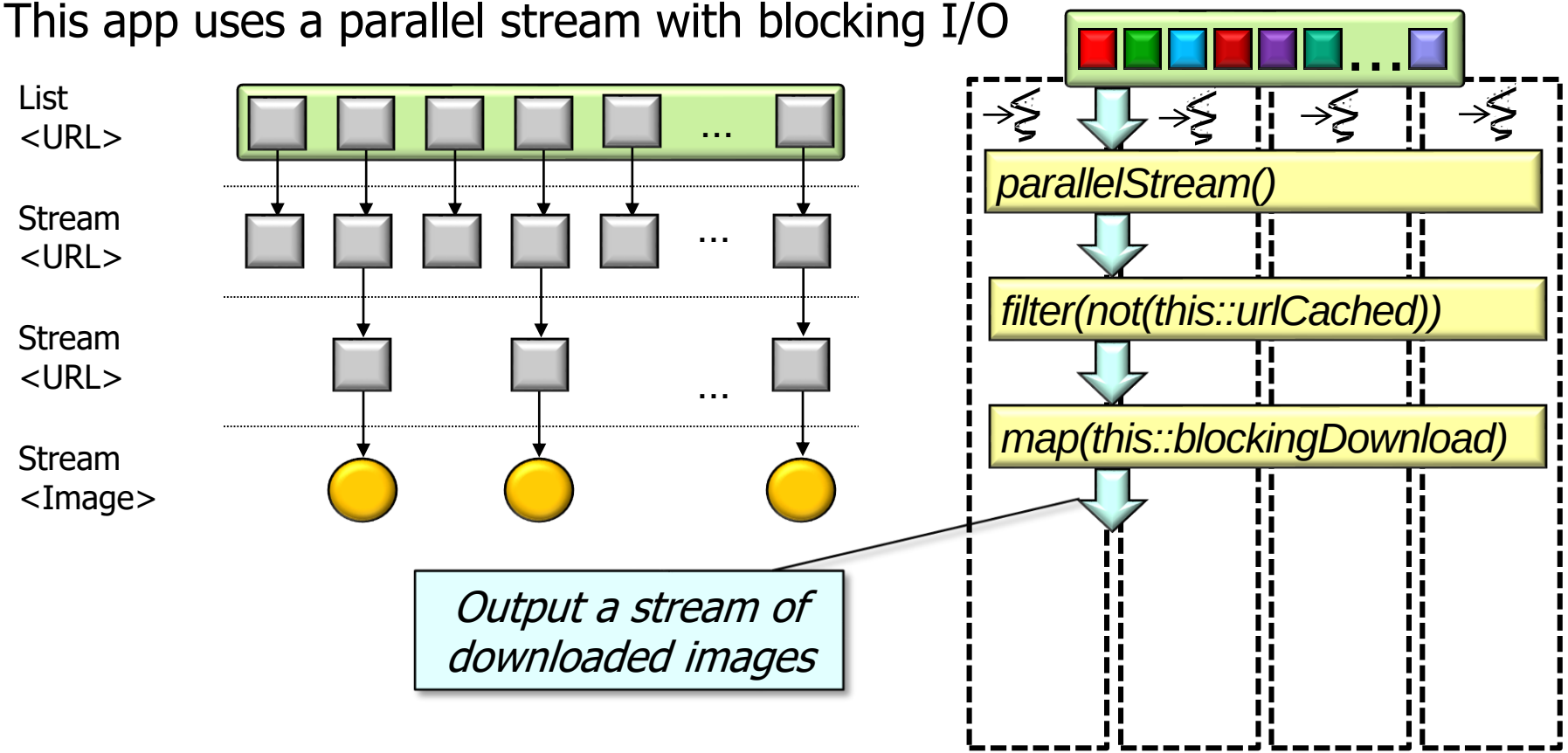

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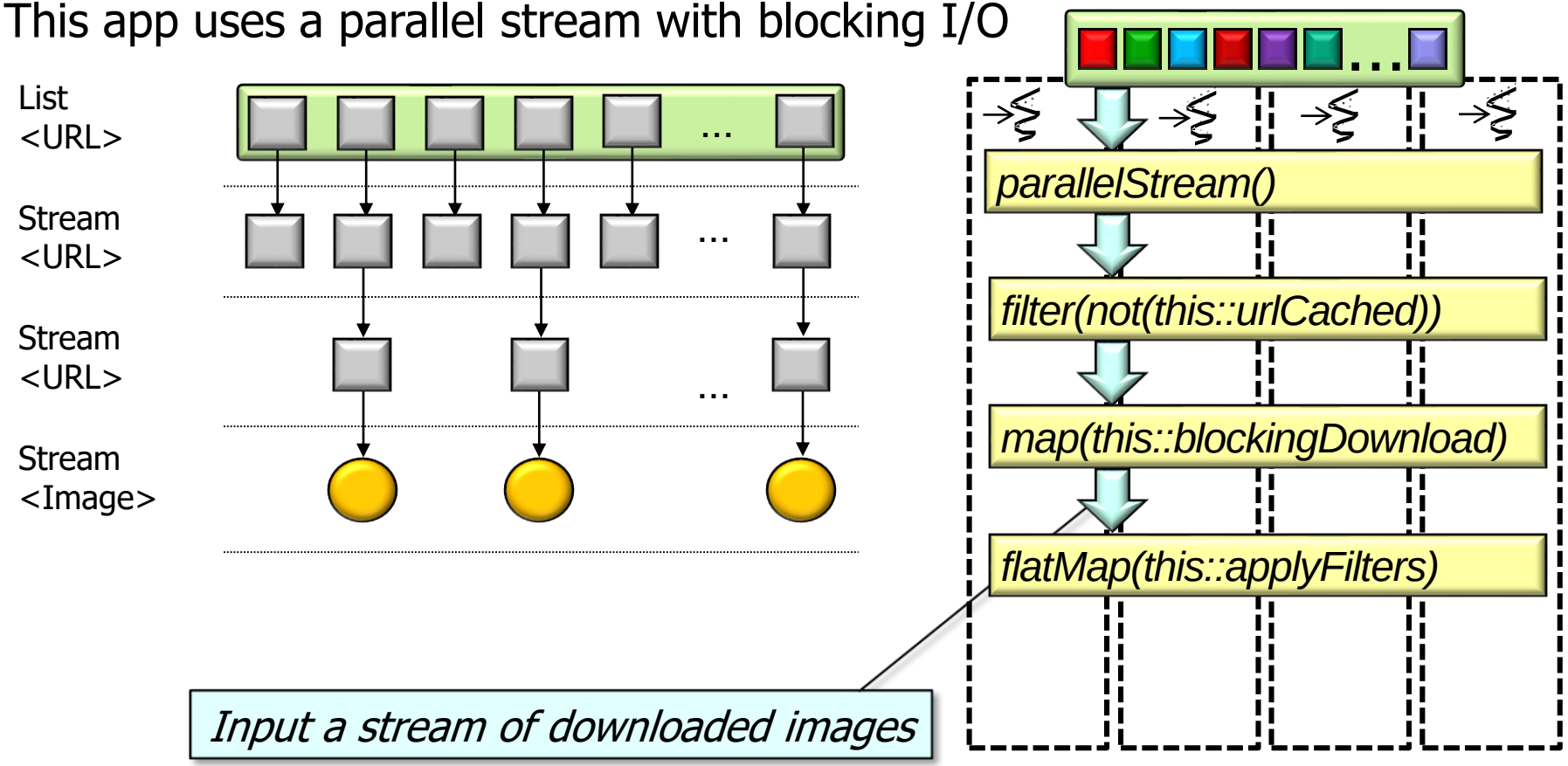

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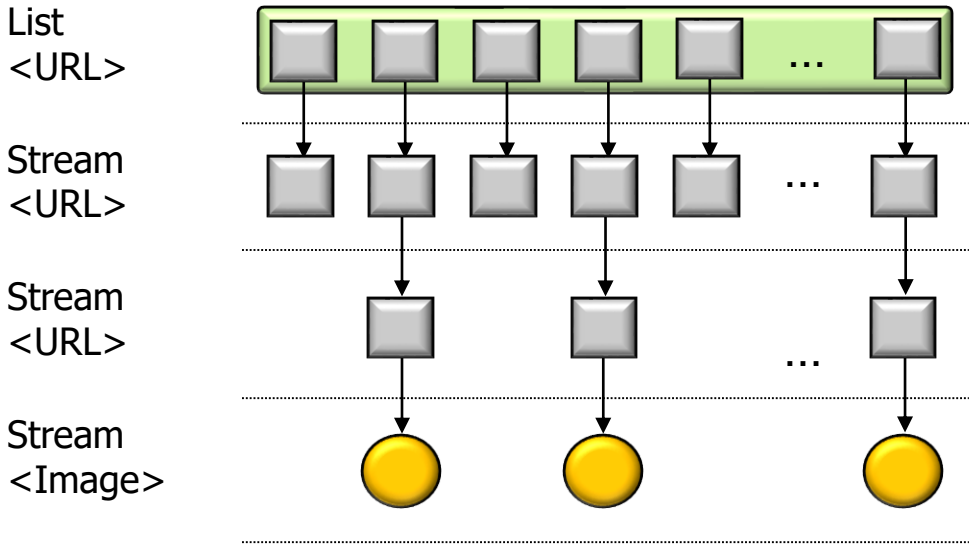

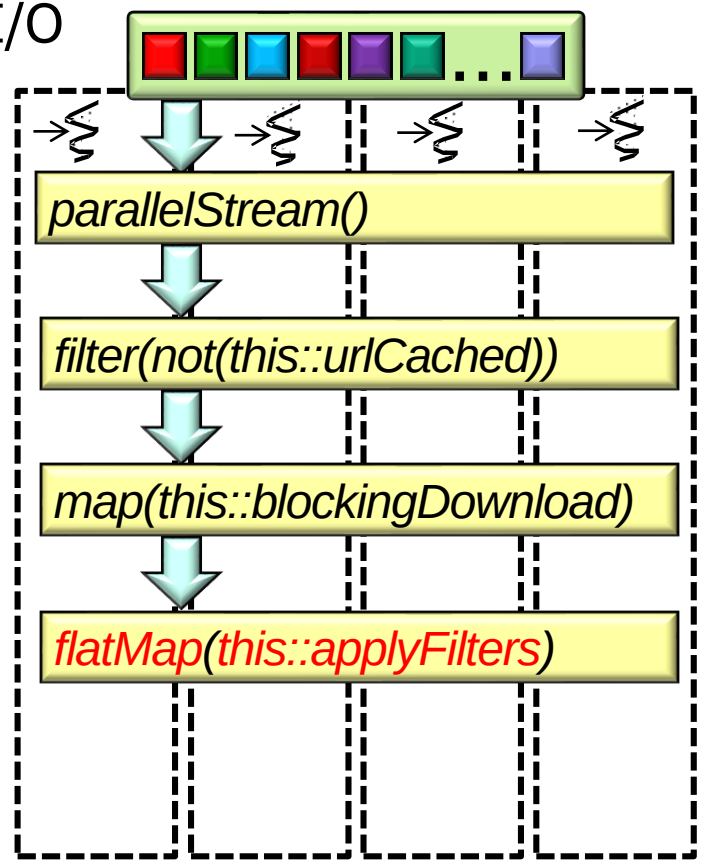

Apply filters to each image in parallel & store filtered images in file system

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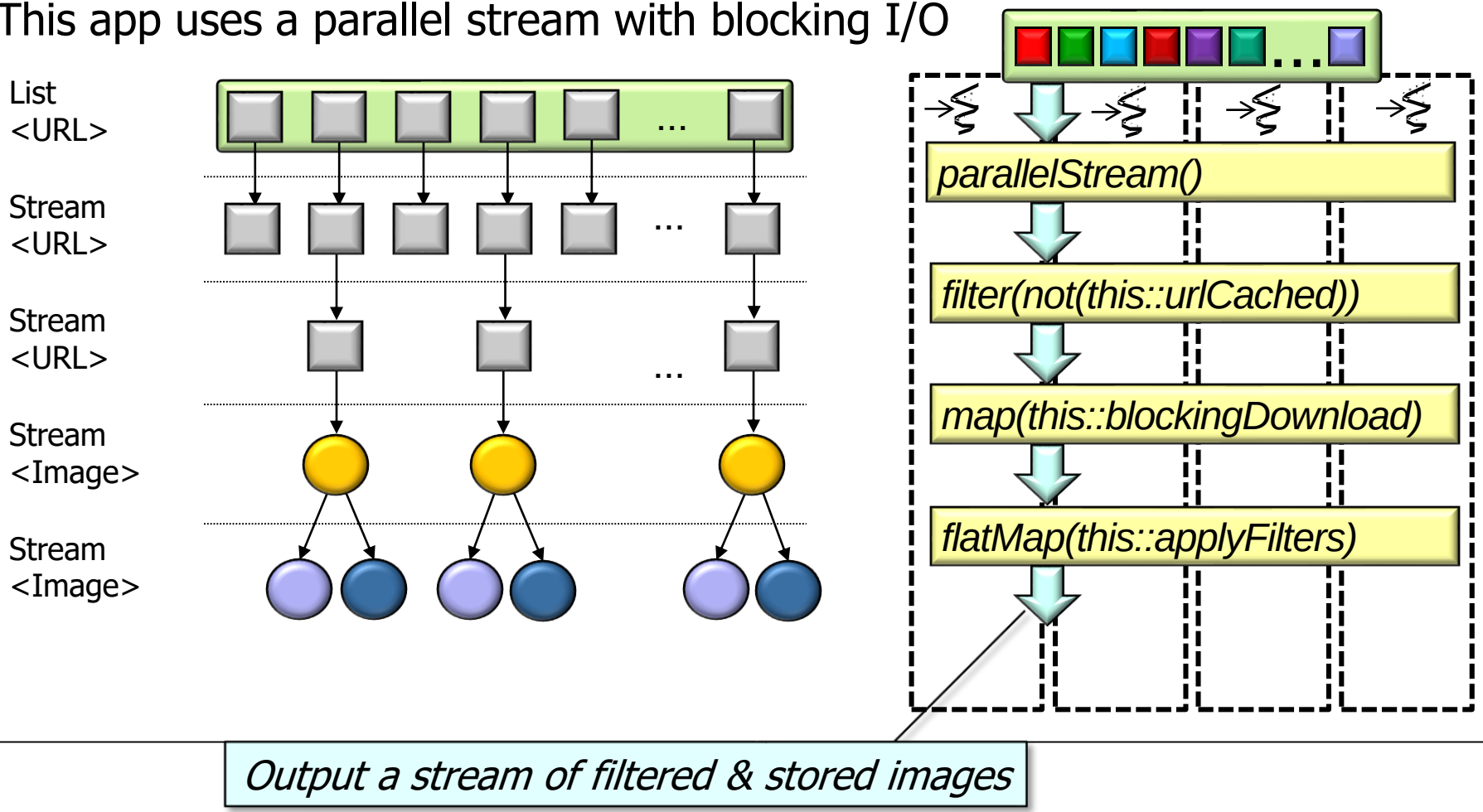

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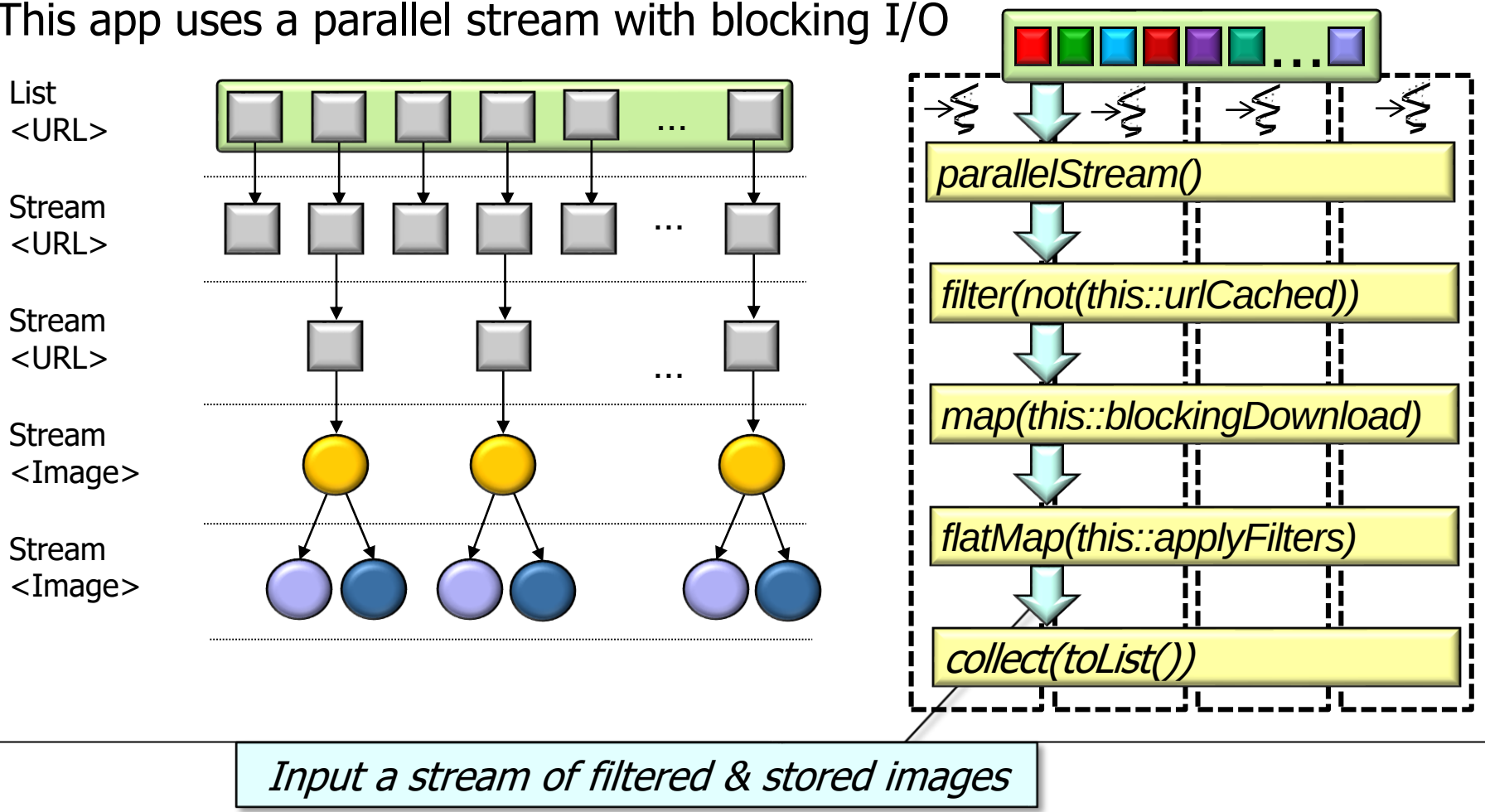

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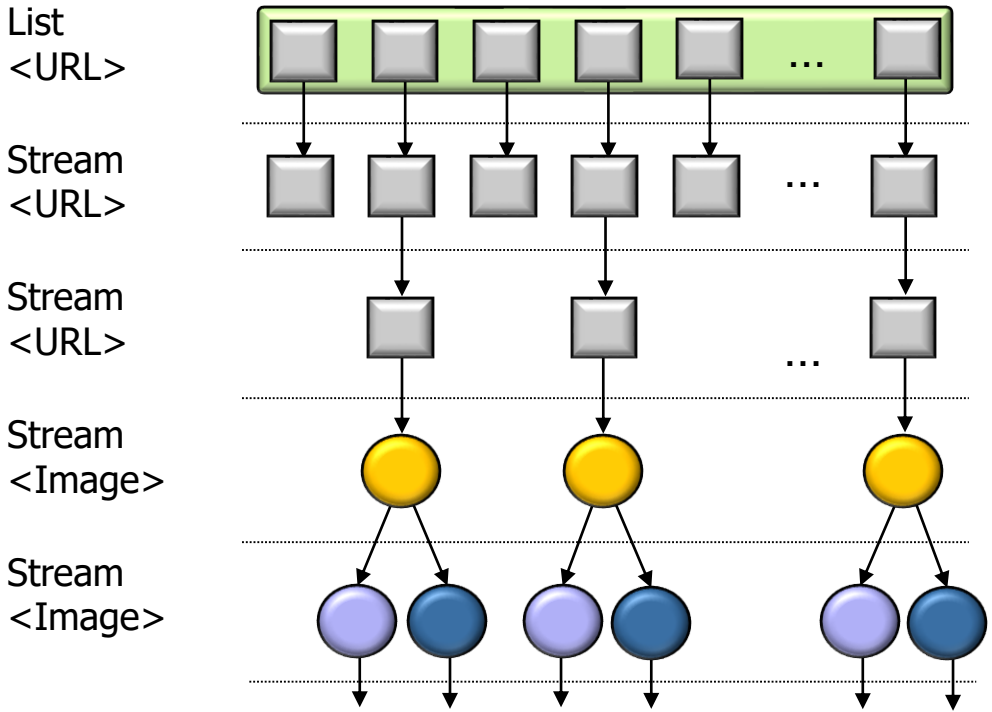

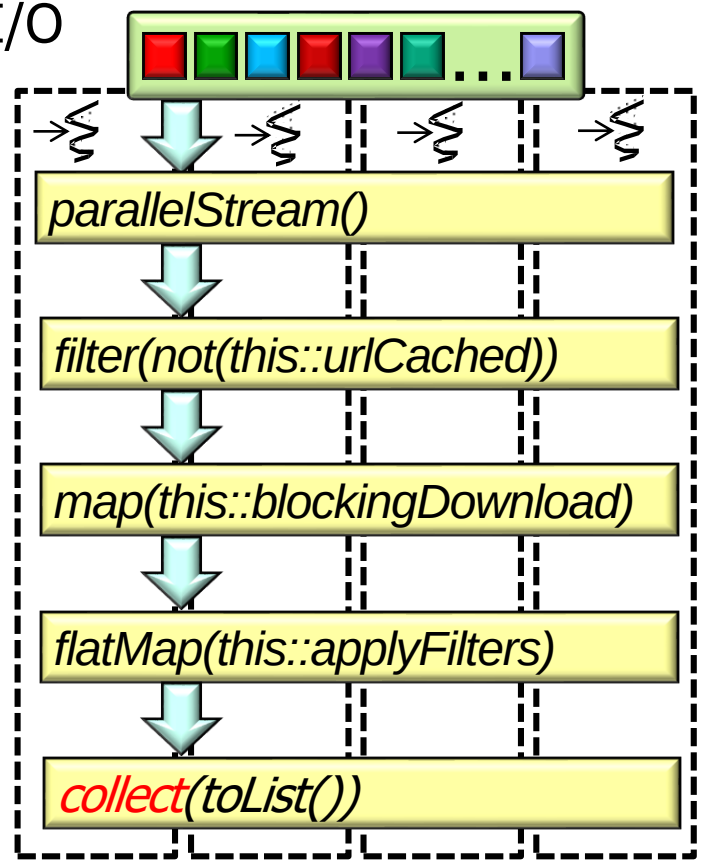

Trigger intermediate operation processing

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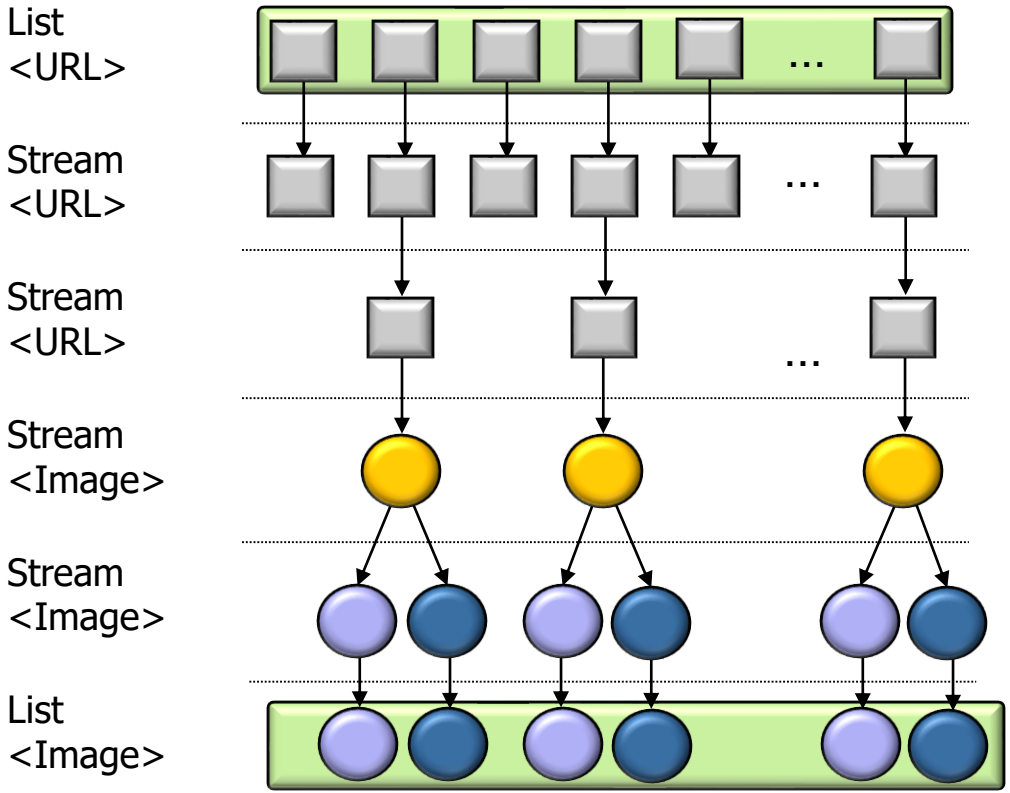

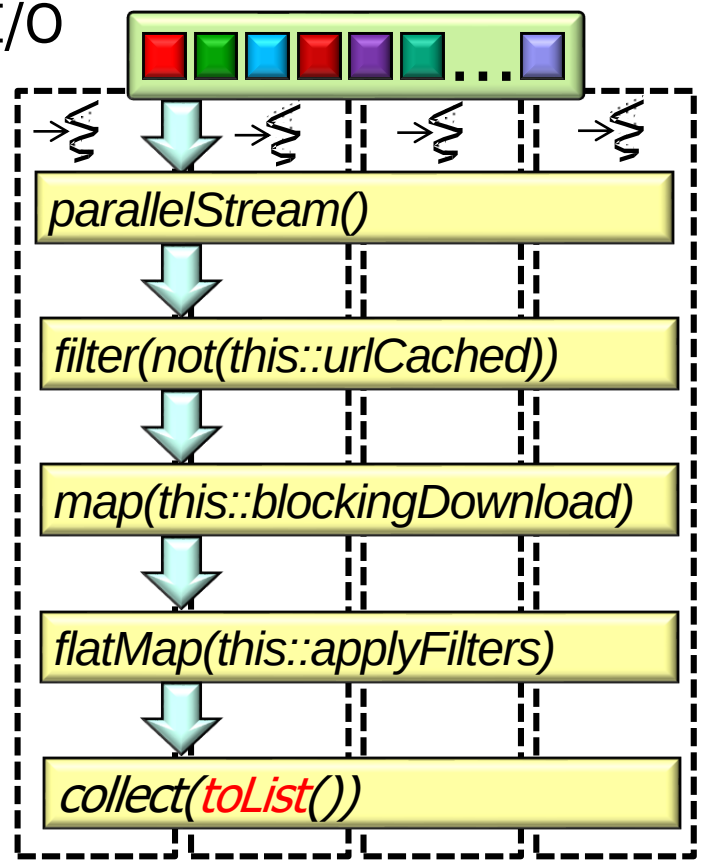

Return a list of filtered & stored images

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- This app uses a parallel stream with blocking I/O
  - Ignore cached images
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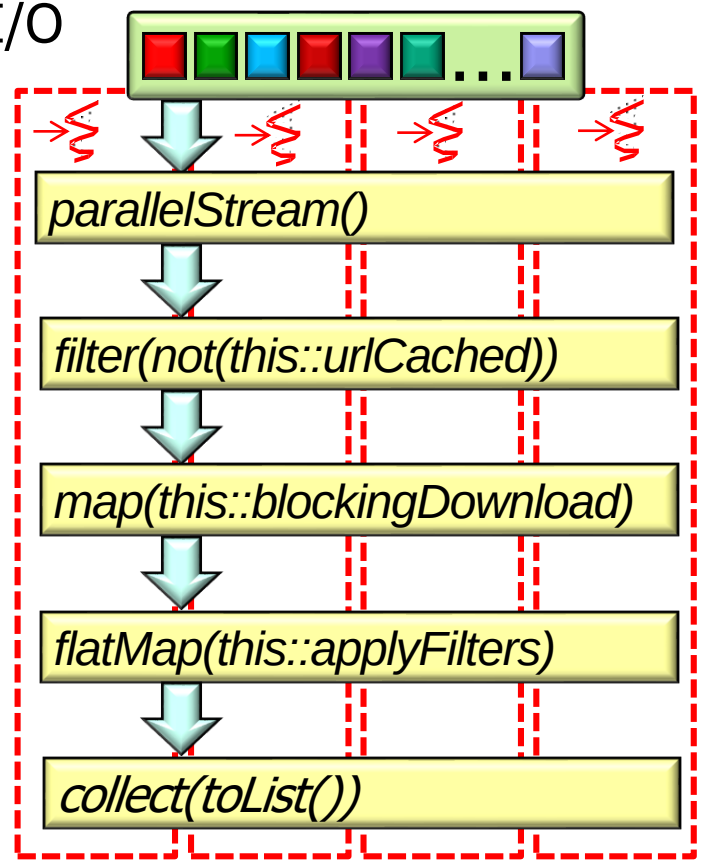
  - Apply list of filters to each image
  - Store filtered images in the file system
  - Display images to the user (after triggering stream processing)



The Java streams framework orchestrates all these steps in parallel

End of Java Parallel ImageStreamGang Example: Visualizing Behaviors