Applying Key Operators in the Flux Class: Case Study ex3 (Part 2)

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Learning Objectives in this Part of the Lesson

- Part 2 of case study ex3 explores the use of Flux operators filter(), generate(), flatMap(), fromIterable(), reduce(), collect(), & the parallel thread pool to create, reduce, multiply, & display BigFraction objects asynchronously in a parallel thread pool

```
return Flux
   .generate(bigFractionEmitter)

   .take(sMAX_FRACTIONS)
   .flatMap(unreducedFraction ->
            reduceAndMultiplyFraction
              (unreducedFraction,
               Schedulers
                 .parallel()))
   .collect(toList())

   .flatMap(list -> BigFractionUtils
            .sortAndPrintList(list,
                              sb));
```

See github.com/douglascraigschmidt/LiveLessons/tree/master/Reactive/flux/ex3

Learning Objectives in this Part of the Lesson

- Part 2 of case study ex3 explores the use of Flux operators filter(), generate(), flatMap(), fromIterable(), reduce(), collect(), & the parallel thread pool to create, reduce, multiply, & display BigFraction objects asynchronously in a parallel thread pool
  - It also shows the use of Mono operators like doOnNext(), map(), firstWithSignal(), subscribeOn(), flatMap(), fromCallable(), & then()

```
return Mono
   .fromCallable(() -> BigFraction
            .reduce(unreducedFrac))

   .subscribeOn(scheduler)

   .doOnNext(result ->
      logBigFractionResult
        (unreducedFrac,
         sBigReducedFraction,
         result, sb))

   .map(reducedFraction ->
        reducedFraction
        .multiply
           (sBigReducedFraction));
```

See github.com/douglascraigschmidt/LiveLessons/tree/master/Reactive/flux/ex3

Applying Key Operators in the Flux Class to ex3

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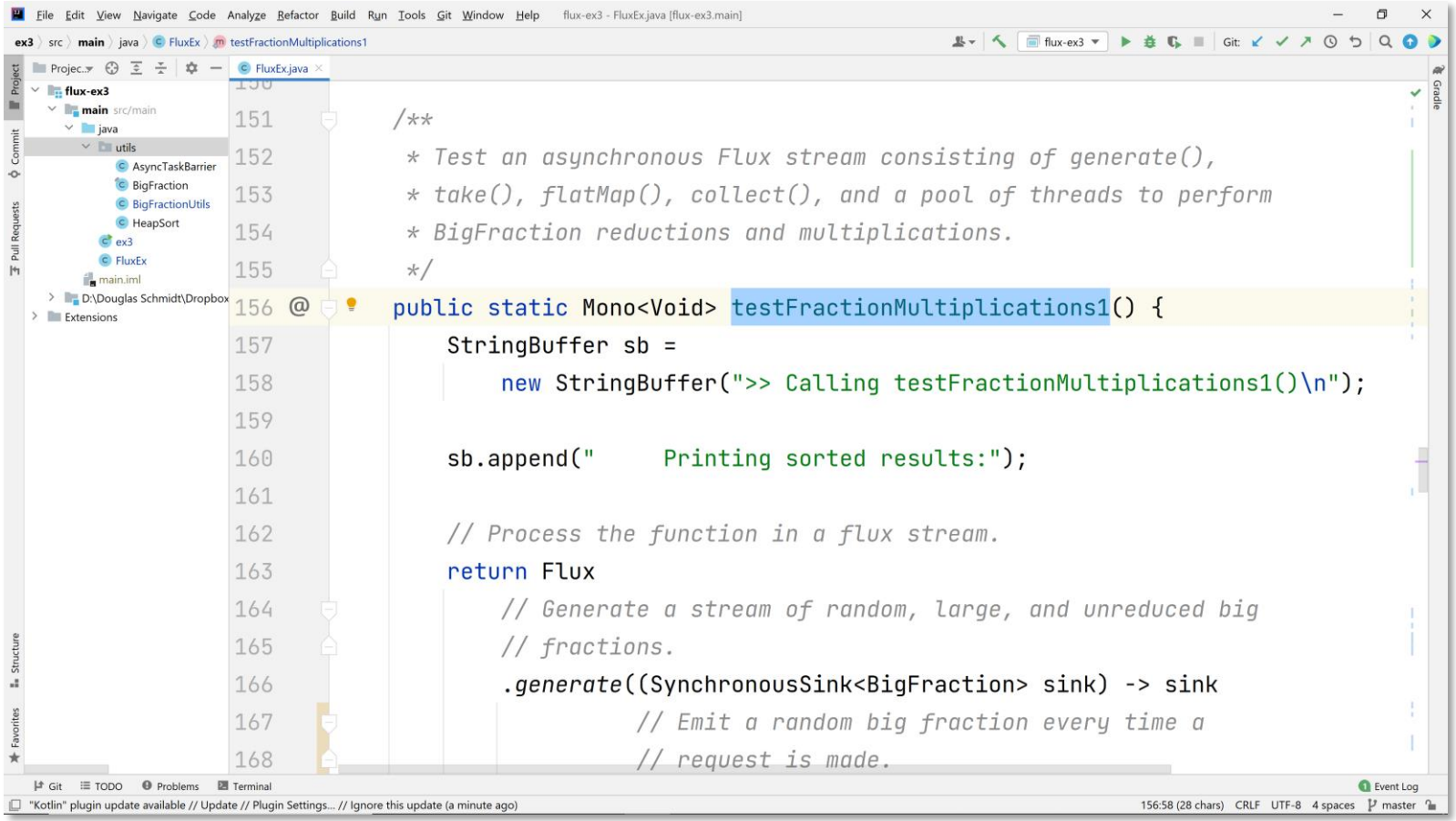

```
/**
 * Test an asynchronous Flux stream consisting of generate(),
 * take(), flatMap(), collect(), and a pool of threads to perform
 * BigFraction reductions and multiplications.
 */
public static Mono<Void> testFractionMultiplications1() {
    StringBuffer sb =
        new StringBuffer(">> Calling testFractionMultiplications1()\n");

    sb.append("     Printing sorted results:");

    // Process the function in a flux stream.
    return Flux
        // Generate a stream of random, large, and unreduced big
        // fractions.
        .generate((SynchronousSink<BigFraction> sink) -> sink
                  // Emit a random big fraction every time a
                  // request is made.
```

See github.com/douglascraigschmidt/LiveLessons/tree/master/Reactive/flux/ex3

End of Applying Key Methods in the Flux Class: Case Study ex3 (Part 2)