Applying Key Operators in the Flux Class: Case Study ex3 (Part 1)

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Learning Objectives in this Part of the Lesson

- Part 1 of case study ex3 shows how to use Flux operators fromIterable(), flatMap(), map(), onErrorResume(), onErrorStop(), collectList(), filter(), onErrorContinue(), & the parallel thread pool to create, reduce, multiply, & display BigFraction objects (a)synchronously

```
return Flux
   .fromIterable(denominators)

   .map(denominator -> BigFraction
          .valueOf(Math.abs
                   (sRAND.nextInt()),
                    denominator)

   .onErrorResume(errorHandler)

   .onErrorStop()

   .collectList()

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

Learning Objectives in this Part of the Lesson

- Part 1 of case study ex3 shows how to use Flux operators fromIterable(), flatMap(), map(), onErrorResume(), onErrorStop(), collectList(), filter(), onErrorContinue(), & the parallel thread pool to create, reduce, multiply, & display BigFraction objects (a)synchronously
  - It also shows the use of Mono operators like fromCallable(), subscribeOn(), firstWithSignal(), flatMap(), onErrorResume(), then(), & doOnSuccess()

```
Mono<List<BigFraction>> qSortM =
 Mono.fromCallable(() ->
               quickSort(list))
  .subscribeOn
    (Schedulers.parallel());
Mono<List<BigFraction>> hSortM =
  Mono.fromCallable(() ->
               heapSort(list))
  .subscribeOn
    (Schedulers.parallel());

return Mono.firstWithSignal
             (qSortM, hSortM)
   .doOnSuccess(displayList)
   .then();
```

Applying Key Operators in the Flux Class to ex3

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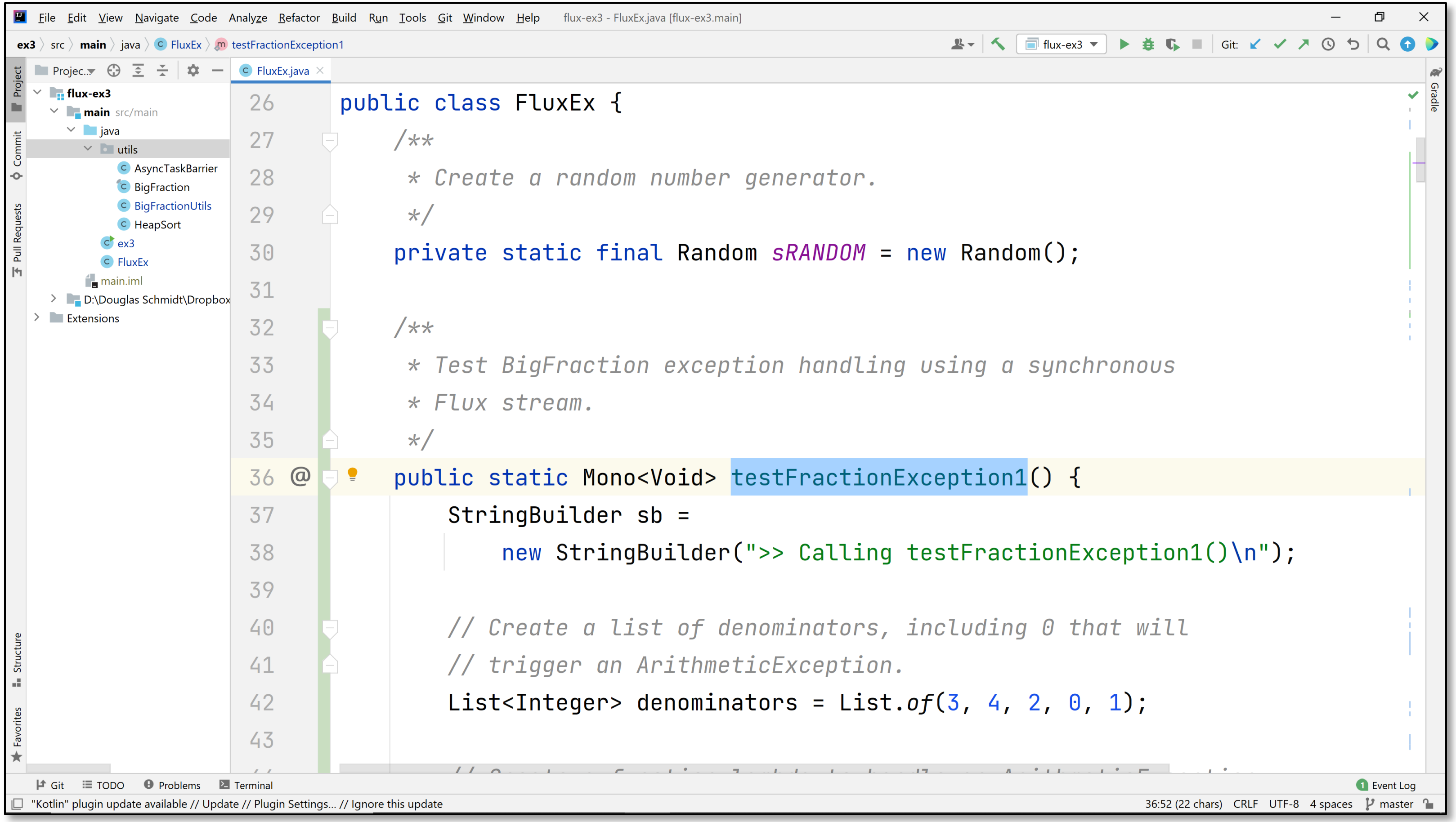
File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
flux-ex3 - FluxEx.java [flux-ex3.main]
ex3 〉 src 〉 main 〉 java 〉 FluxEx 〉 testFractionException1
flux-ex3
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FluxEx.java
flux-ex3
main src/main
java
utils
AsyncTaskBarrier
BigFraction
BigFractionUtils
HeapSort
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FluxEx
main.iml
D:\Douglas Schmidt\Dropbox
Extensions
Project
Commit
Pull Requests
Structure
Favorites
Gradle
Git
TODO
Problems
Terminal
Event Log
"Kotlin" plugin update available // Update // Plugin Settings... // Ignore this update
36:52 (22 chars) CRLF UTF-8 4 spaces master

```java
public class FluxEx {
    /**
     * Create a random number generator.
     */
    private static final Random sRANDOM = new Random();

    /**
     * Test BigFraction exception handling using a synchronous
     * Flux stream.
     */
    public static Mono<Void> testFractionException1() {
        StringBuilder sb =
            new StringBuilder(">> Calling testFractionException1()\n");

        // Create a list of denominators, including 0 that will
        // trigger an ArithmeticException.
        List<Integer> denominators = List.of(3, 4, 2, 0, 1);

```

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

End of Applying Key Methods in the Flux Class: Case Study ex3 (Part 1)