

Applying Key Operators in Project Reactor: Case Study ex6

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Learning Objectives in this Part of the Lesson

- Case study ex6 shows how to integrate Java Streams operations `generate()`, `limit()`, `map()`, & `collect()` with Project Reactor Mono operators `fromCallable()`, `then()`, `materialize()`, `firstWithSignal()`, `map()`, `flatMap()`, `flatMapIterable()`, `subscribeOn()`, & `when()` to create, reduce, multiply, & display `BigFraction` objects asynchronously

```
return Stream
    .generate(() ->
        makeBigFraction(sRANDOM,
                        false))
    .limit(sMAX_FRACTIONS)
    .map(unreducedBigFraction ->
        reduceAndMultiplyFraction
            (unreducedBigFraction,
             Schedulers.fromExecutor
                 (ForkJoinPool
                    .commonPool())));
```

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- It also shows how to implement two Java Streams Collectors for asynchronous Mono objects

```
return monos -> Mono
    .when(monos)

    .materialize()

    .flatMap(v -> Flux
        .fromIterable(monos)

        .map(Mono::block)

        .collect(toList()));
```

Applying Key Operators in Project Reactor to ex6

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```
1  import ...
17
18  /**
19   * This class shows how to apply Project Reactor features
20   * asynchronously to perform a range of Flux operations, including
21   * fromArray(), map(), flatMap(), collect(), subscribeOn(), and
22   * various types of thread pools. It also shows various Mono
23   * operations, such as when(), firstWithSignal(), materialize(),
24   * flatMap(), flatMapMany(), subscribeOn(), and the parallel thread
25   * pool. In addition, it demonstrates how to combine the Java streams
26   * framework with the Project Reactor framework.
27   */
28   @SuppressWarnings("ALL")
29   public class FluxEx {
30       /**
31        * Create a random number generator.
32        */
33       private static final Random sRANDOM = new Random();
34
35       /**
36        * Test BigFraction multiplications by combining the Java streams
37        * framework with the Project Reactor framework and the Java
38        * common fork-join framework.
39        */
40       @
41       public static Mono<Void> testFractionMultiplicationsStreams() {
42           StringBuffer sb =
```

See github.com/douglasraigschmidt/LiveLessons/tree/master/Reactive/flux/ex6

End of Applying Key Methods in Project Reactor: Case Study ex6