

Applying Key Operators in the Flux Class: Case Study ex2 (Part 2)

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Learning Objectives in this Part of the Lesson

- Part 2 of case study ex2 shows how to use Flux operators `create()`, `map()`, `filter()`, `take()`, `subscribe()`, `subscribeOn()`, `publishOn()`, `then()`, `range()`, `doOnNext()`, & `doFinally()` to create large random `BigInteger` objects & asynchronously check if they are prime via publisher & subscriber threads created using `Schedulers.newParallel()`

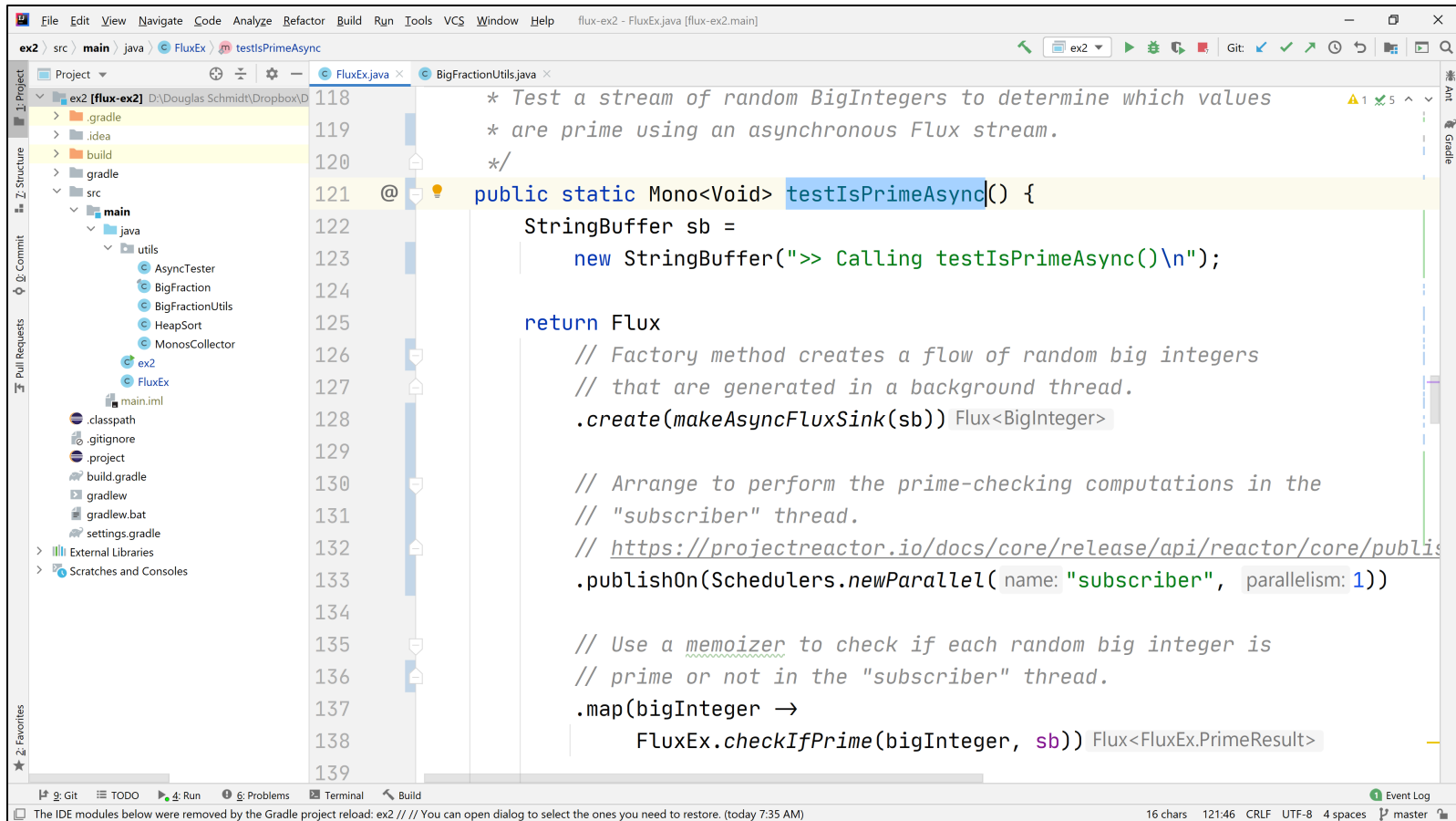
```
Scheduler publisher = Schedulers
    .newParallel("publisher", 1));
```

```
Flux
```

```
    .range(1, sMAX_ITERATIONS)
    ...
    .subscribeOn(publisher)
    .map(__ -> BigInteger
        .valueOf(lowerBound + rand
            .nextInt(sMAX_ITERATIONS)))
    ...
    .doFinally(() -> publisher
        .dispose())
    .subscribe(sink::next,
        err -> ...,
        sink::complete);
```

Applying Key Operators in the Flux Class to ex2

Applying Key Operators in the Flux Class to ex2



```
118      * Test a stream of random BigIntegers to determine which values
119      * are prime using an asynchronous Flux stream.
120      */
121      @Test
122      public static Mono<Void> testIsPrimeAsync() {
123          StringBuffer sb =
124              new StringBuffer(">> Calling testIsPrimeAsync()\n");
125
126          return Flux
127              // Factory method creates a flow of random big integers
128              // that are generated in a background thread.
129              .create(makeAsyncFluxSink(sb)) Flux<BigInteger>
130
131              // Arrange to perform the prime-checking computations in the
132              // "subscriber" thread.
133              // https://projectreactor.io/docs/core/release/api/reactor/core/publishOn
134              .publishOn(Schedulers.newParallel("subscriber", parallelism: 1))
135
136              // Use a memoizer to check if each random big integer is
137              // prime or not in the "subscriber" thread.
138              .map(bigInteger ->
139                  FluxEx.checkIfPrime(bigInteger, sb)) Flux<FluxEx.PrimeResult>
```

See github.com/douglasraigschmidt/LiveLessons/tree/master/Reactive/flux/ex2

End of Applying Key Methods in the Flux Class: Case Study ex2 (Part 2)