

Applying Closures & Java Lambda Expressions in Case Study ex6

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Learning Objectives in this Lesson

- Understand how lambda expressions provide a foundational functional programming feature in Modern Java
- Recognize how to apply lambda expressions
- Know the benefits of applying Java lambda expressions
- Be aware of how to apply Java lambda expressions to implement closures

```
var cp1 = new CheckPrimality(...)
    .start();
var cp2 = new CheckPrimality(...)
    .start();
var pr1 = cp1.getResult();
var pr2 = cp2.getResult();

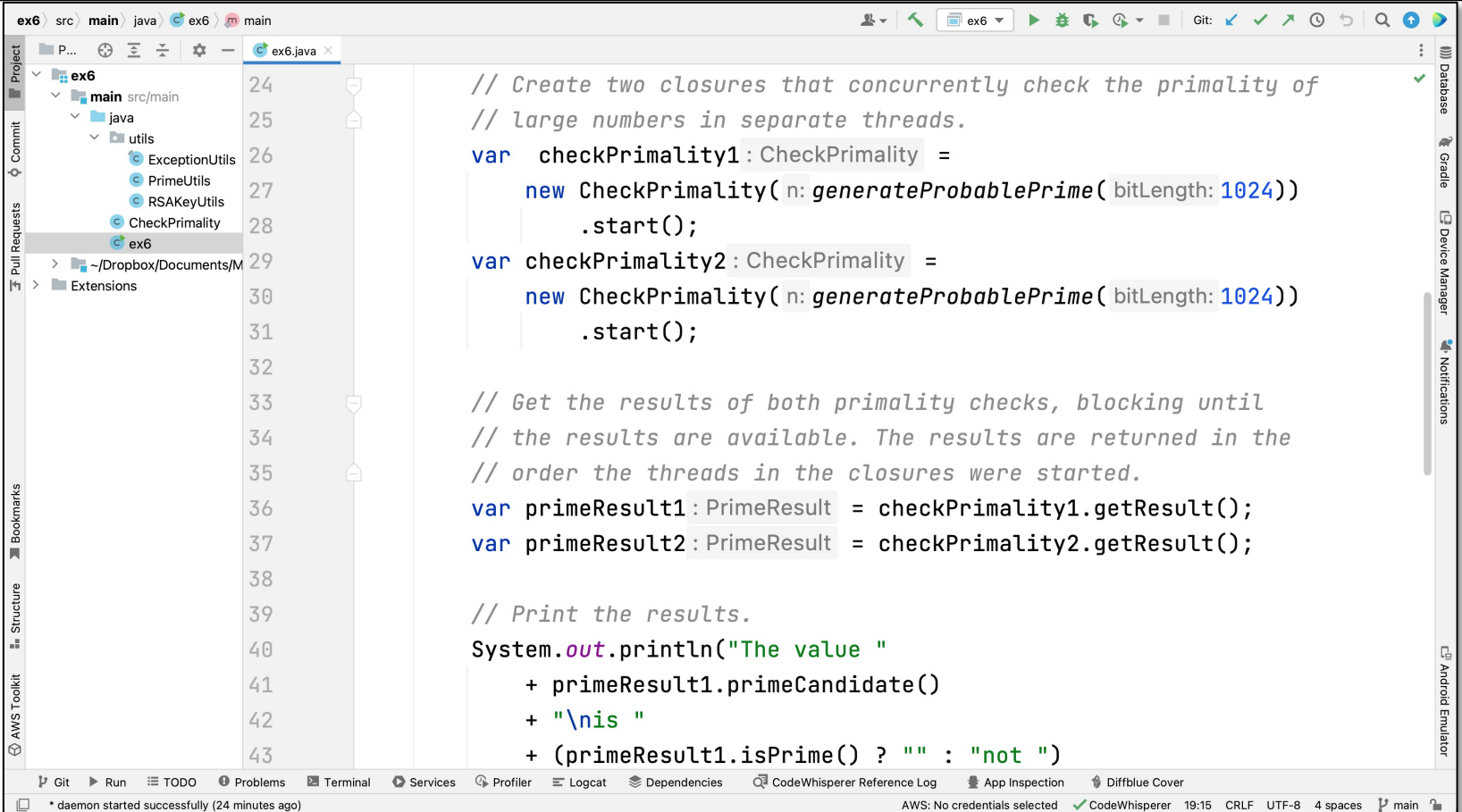
if (pr1.isPrime() && pr2.isPrime()) {
    var keyPair = RSAKeyUtils
        .generateKeyPair
        (pr1.primeCandidate(),
         pr2.primeCandidate());
}
```

Apply closures, Java Thread objects, & lambda expressions to create public & private RSA keys

See [en.wikipedia.org/wiki/RSA_\(cryptosystem\)](https://en.wikipedia.org/wiki/RSA_(cryptosystem))

Applying Java Lambda Expressions to Implement Closures in Case Study ex6

Applying Java Lambda Expressions in Case Study ex6



```
24 // Create two closures that concurrently check the primality of
25 // large numbers in separate threads.
26 var checkPrimality1: CheckPrimality =
27     new CheckPrimality(n: generateProbablePrime(bitLength: 1024))
28     .start();
29 var checkPrimality2: CheckPrimality =
30     new CheckPrimality(n: generateProbablePrime(bitLength: 1024))
31     .start();
32
33 // Get the results of both primality checks, blocking until
34 // the results are available. The results are returned in the
35 // order the threads in the closures were started.
36 var primeResult1: PrimeResult = checkPrimality1.getResult();
37 var primeResult2: PrimeResult = checkPrimality2.getResult();
38
39 // Print the results.
40 System.out.println("The value "
41     + primeResult1.primeCandidate()
42     + "\nis "
43     + (primeResult1.isPrime() ? "" : "not ")
```

See github.com/douglasraigschmidt/ModernJava/tree/main/FP/ex6

End of Applying Closures & Java Lambda Expressions in Case Study ex6