

# The PrimeCheck App Case Study: Test Driver Implementation & Performance

**Douglas C. Schmidt**

**[d.schmidt@vanderbilt.edu](mailto:d.schmidt@vanderbilt.edu)**

**[www.dre.vanderbilt.edu/~schmidt](http://www.dre.vanderbilt.edu/~schmidt)**

**Professor of Computer Science**

**Institute for Software  
Integrated Systems**

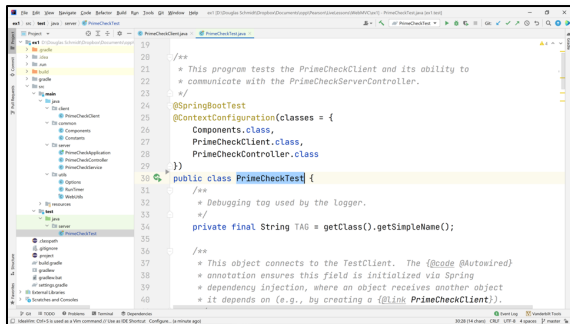
**Vanderbilt University  
Nashville, Tennessee, USA**



# Learning Objectives in this Part of the Lesson

- Understand the implementation of a test driver program that runs the PCClient\* classes & measures the performance of various methods

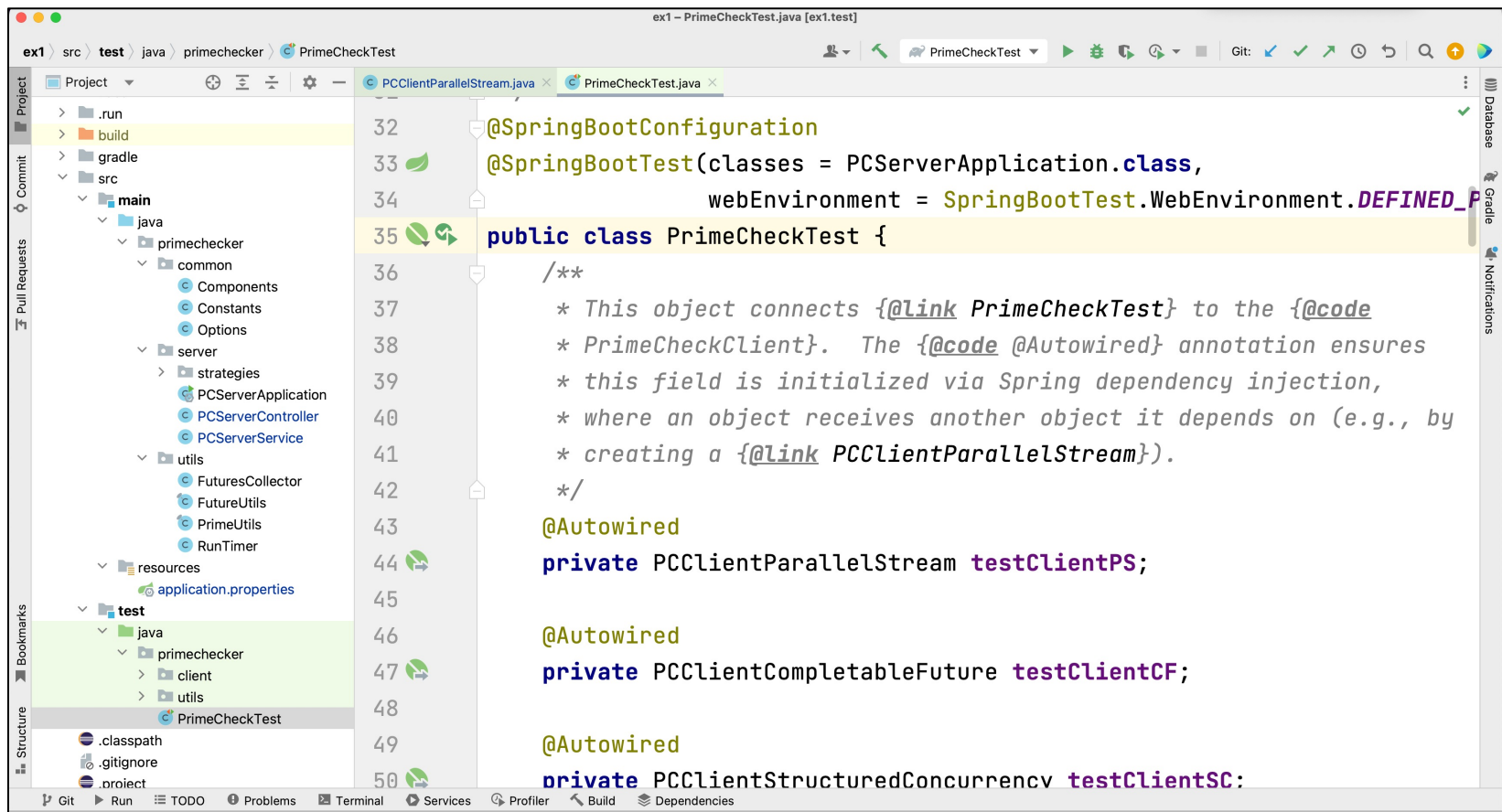
## PrimeCheckTest



---

# Implementing the PrimeCheckTest Driver

# Implementing the PrimeCheckTest Driver



```
ex1 - PrimeCheckTest.java [ex1.test]
ex1 | src | test | java | primechecker | PrimeCheckTest

Project
  .run
  build
  gradle
  src
    main
      java
        primechecker
          common
            Components
            Constants
            Options
          server
            strategies
              PCServerApplication
              PCServerController
              PCServerService
          utils
            FuturesCollector
            FutureUtils
            PrimeUtils
            RunTimer
        resources
          application.properties
    test
      java
        primechecker
          client
          utils
            PrimeCheckTest

Structure
  .classpath
  .gitignore
  .project

32 @SpringBootTest
33 @SpringBootTest(classes = PCServerApplication.class,
34                 webEnvironment = SpringBootTest.WebEnvironment.DEFINED_P
35 public class PrimeCheckTest {
36     /**
37      * This object connects {@link PrimeCheckTest} to the {@code
38      * PrimeCheckClient}. The {@code @Autowired} annotation ensures
39      * this field is initialized via Spring dependency injection,
40      * where an object receives another object it depends on (e.g., by
41      * creating a {@link PCClientParallelStream}).
42      */
43     @Autowired
44     private PCClientParallelStream testClientPS;
45
46     @Autowired
47     private PCClientCompletableFuture testClientCF;
48
49     @Autowired
50     private PCClientStructuredConcurrency testClientSC;
```

See [github.com/douglasraigschmidt/LiveLessons/tree/master/WebMVC/ex1](https://github.com/douglasraigschmidt/LiveLessons/tree/master/WebMVC/ex1)

---

# End of the PrimeCheck App Case Study: Test Driver