Technology Stack

What does the Spring ecosystem have to offer?

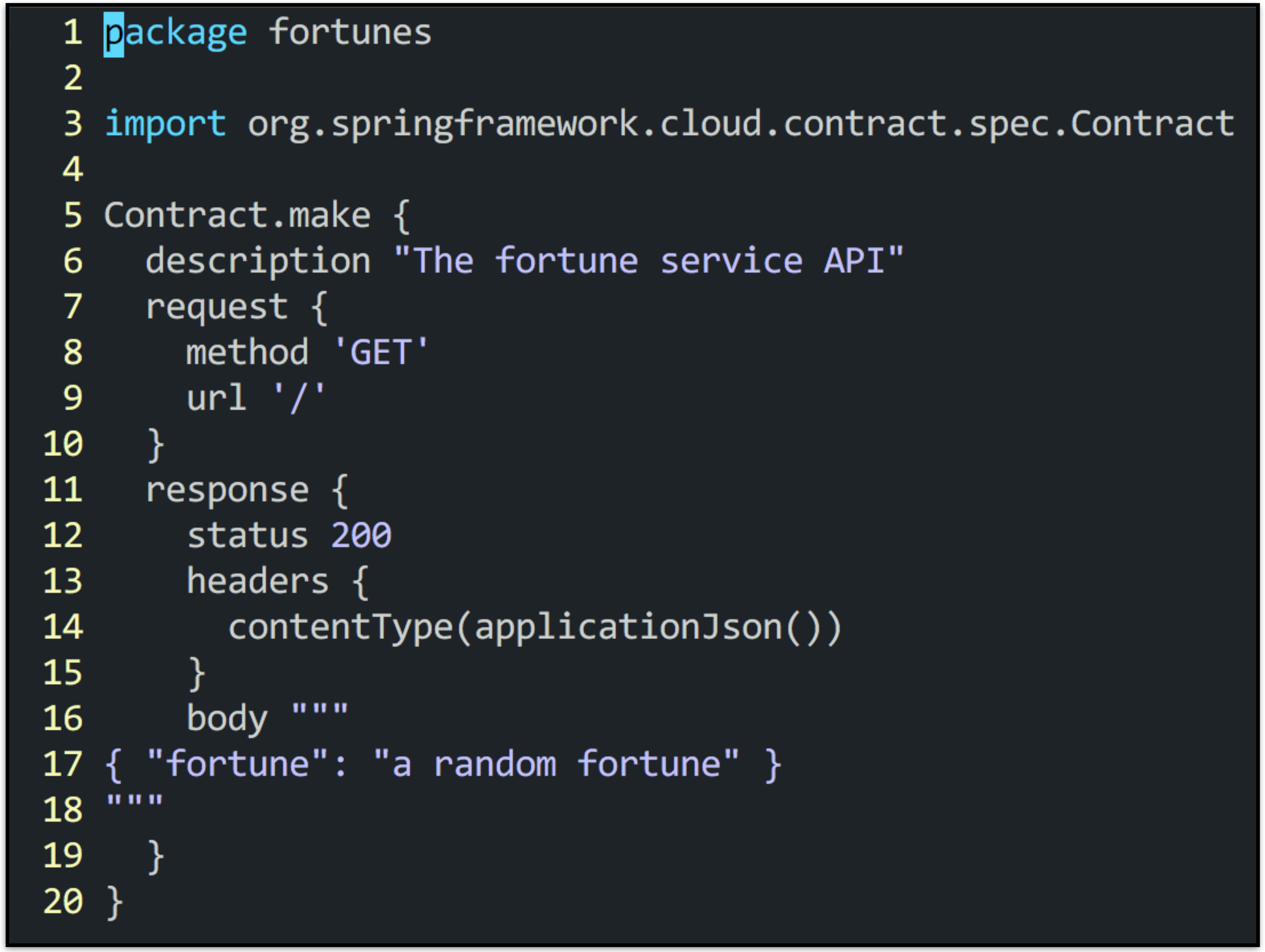
Spring Cloud

- **Spring Cloud Contract**: supports and facilitates contract testing
- **Spring Cloud Netflix**: umbrella project offering a number of Netflix services and libraries adapted for Spring:
  - Hystrix, Eureka, Ribbon, Feign, Zuul
- **Spring Cloud Config Server**: configuration as a service
- **Spring Cloud Sleuth**: distributed tracing

Spring Cloud Contract

Contract Definition Language

- Groovy DSL
- Statically-typed, i.e. supports autocompletion in IDE



```
package fortunes

import org.springframework.cloud.contract.spec.Contract

Contract.make {
  description "The fortune service API"
  request {
    method 'GET'
    url '/'
  }
  response {
    status 200
    headers {
      contentType(applicationJson())
    }
    body """
{ "fortune": "a random fortune" }
"""
  }
}
```

Contract Verifier

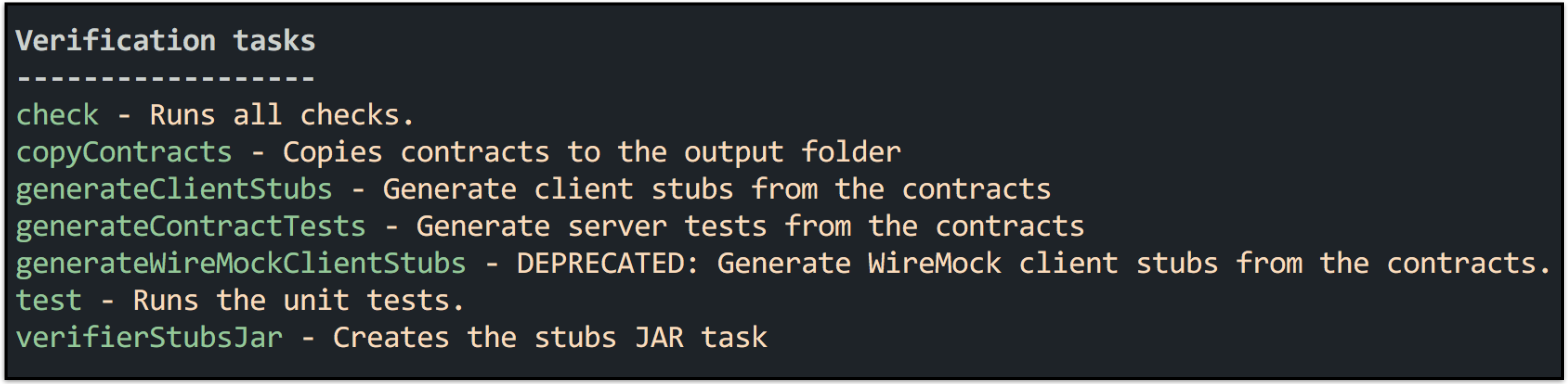
- Automatically generates tests from the contract
- Runs generated tests as part of the service's build
- Ensures that the implementation of the service adheres to the contract

Stub Generator

- Automatically generates stub from contract for use by clients
- The stub implementation is a WireMock stub
- Stub published to artifact repository using same group id, artifact id, and version, but with classifier name "stubs"

Build Plugin

Spring Cloud Contract plugin (maven or gradle) contributes goals to project build file:



```
Verification tasks
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check - Runs all checks.
copyContracts - Copies contracts to the output folder
generateClientStubs - Generate client stubs from the contracts
generateContractTests - Generate server tests from the contracts
generateWireMockClientStubs - DEPRECATED: Generate WireMock client stubs from the contracts.
test - Runs the unit tests.
verifierStubsJar - Creates the stubs JAR task
```
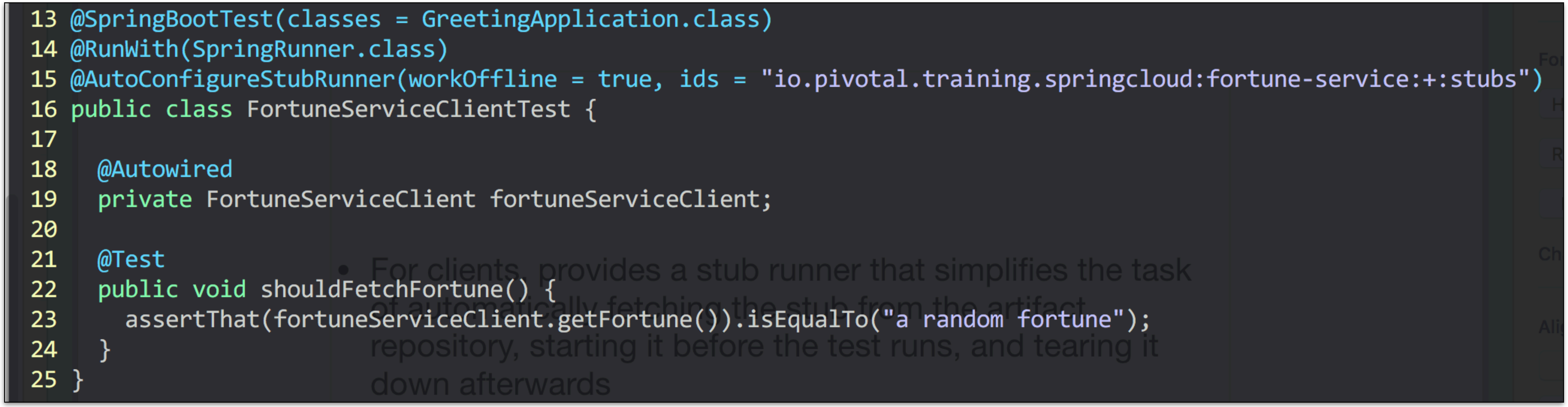

Stub Runner

For clients, provides a stub runner that simplifies the task of automatically fetching the stub from the artifact repository, starting it before the test runs, and tearing it down afterwards



```java
@SpringBootTest(classes = GreetingApplication.class)
@RunWith(SpringRunner.class)
@AutoConfigureStubRunner(workOffline = true, ids = "io.pivotal.training.springcloud:fortune-service:+:stubs")
public class FortuneServiceClientTest {

  @Autowired
  private FortuneServiceClient fortuneServiceClient;

  @Test
  public void shouldFetchFortune() {
    assertThat(fortuneServiceClient.getFortune()).isEqualTo("a random fortune");
  }
}
```