

Automaten und formale Sprachen Blatt 2

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14. Oktober 2024

1 Aufgabe

1. $L(r \mid r^*) = \{\epsilon, r, rr, rrr, \dots\}$
2. $L((r \cdot t)^*) = \{\epsilon, rt, rtrt, rtrtrt, \dots\}$
3. $L(r^* \cdot t^*) = \{\epsilon, r, t, rt, rr, tt, rrt, rtt, rrr, \dots\}$
4. $L((t \cdot r)^*) = \{\epsilon, tr, trtr, trtrtr, \dots\}$
5. $L((r \mid t)^*) = \{\epsilon, r, t, rr, tt, rt, tr, rtrt, rttr, trrt, rrr, ttt, \dots\}$
6. $L(r^* \mid t^*) = \{\epsilon, r, t, rr, tt, rrr, ttt, \dots\}$
7. $L((0^* \cdot 1)^* \cdot 0^*) = \{\epsilon, 0, 1, 10, 01, 010, 101, 1011, 0101, 01010, 001, 110, 0010, 0100, 00100, \dots\}$
8. $L((1 \mid 0)^*) = \{\epsilon, 1, 0, 11, 00, 10, 01, 010, 100, 101, 111, 000, 11001, \dots\}$

2 Aufgabe

```
Test Results 23ms
  ✓ Test class Blatt_2_RegexTest 23ms
    ✓ testGleitkommazahlen 23ms

Tests passed: 1 of 1 test - 23ms
> Task :compileJava UP-TO-DATE
> Task :processResources NO-SOURCE
> Task :classes UP-TO-DATE
> Task :compileTestJava UP-TO-DATE
> Task :processTestResources NO-SOURCE
> Task :testClasses UP-TO-DATE
> Task :test

Deprecated Gradle features were used in this build, making it incompatible with Gradle 9.0.

You can use '--warning-mode all' to show the individual deprecation warnings and determine if they come from your own scripts or plugins.

For more on this, please refer to https://docs.gradle.org/8.5/userguide/command_line_interface.html#sec:command_line_warnings in the Gradle documentation.
BUILD SUCCESSFUL in 970ms
3 actionable tasks: 1 executed, 2 up-to-date
15:58:35: Execution finished ':test --tests "Blatt_2_RegexTest.testGleitkommazahlen"'.

Test Results 22ms
  ✓ Test class Blatt_2_RegexTest 22ms
    ✓ testKfZKennzeichen 22ms

Tests passed: 1 of 1 test - 22ms
> Task :compileJava UP-TO-DATE
> Task :processResources NO-SOURCE
> Task :classes UP-TO-DATE
> Task :compileTestJava UP-TO-DATE
> Task :processTestResources NO-SOURCE
> Task :testClasses UP-TO-DATE
> Task :test

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BUILD SUCCESSFUL in 980ms
3 actionable tasks: 1 executed, 2 up-to-date
15:59:05: Execution finished ':test --tests "Blatt_2_RegexTest.testKfZKennzeichen"'.

Test Results 25ms
  ✓ Test class Blatt_2_RegexTest 25ms
    ✓ testZeitpunkt 25ms

Tests passed: 1 of 1 test - 25ms
> Task :compileJava UP-TO-DATE
> Task :processResources NO-SOURCE
> Task :classes UP-TO-DATE
> Task :compileTestJava UP-TO-DATE
> Task :processTestResources NO-SOURCE
> Task :testClasses UP-TO-DATE
> Task :test

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BUILD SUCCESSFUL in 871ms
3 actionable tasks: 1 executed, 2 up-to-date
15:58:52: Execution finished ':test --tests "Blatt_2_RegexTest.testZeitpunkt"'.
```