

Theory of Automata – Fall 2020

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Section B

Example 1 (email validation):

| Type | S1 (μs) | S2 (μs) | S3 (μs) | S4 (μs) | S5 (μs) | S6 (μs) | S7 (μs) | S8 (μs) | S9 (μs) | S10 (μs) | Avg.(μs) |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| Without regex | 15.5 | 13.4 | 7.63 | 4.77 | 10.3 | 6.91 | 6.68 | 4.29 | 6.44 | 8.82 | 8.474 |
| With regex | 7.39 | 6.68 | 6.44 | 6.44 | 6.44 | 6.2 | 5.72 | 5.48 | 5.25 | 5.96 | 6.2 |

Example 2 (date validation):

| Type | S1 (μs) | S2 (μs) | S3 (μs) | S4 (μs) | S5 (μs) | S6 (μs) | S7 (μs) | S8 (μs) | S9 (μs) | S10 (μs) | Avg.(μs) |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| Without regex | 796 | 566 | 546 | 743 | 538 | 585 | 650 | 846 | 632 | 412 | 631.4 |
| With regex | 18.4 | 19.3 | 32.2 | 20.5 | 32.2 | 18.6 | 14.8 | 21 | 19.8 | 21.5 | 21.83 |

Conclusion:

Logic building is much harder using regular coding techniques but with Regular Expressions it becomes easy and is time saving as well (as you can see in the average times above). Another major plus point of using RE's is that code gets shorter, you don't have to use loops, checks and all. Just one line of RE would do.