

CS-C2160 - Theory of Computation, Lecture, 11.1.2022-11.4.2022

This course space end date is set to 16.12.2022   [Search Courses: CS-C2160](#)

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## 8. Voluntary problem set: Regular expressions

These problems are completely **voluntary** (no bonus points given, either) that one may solve, for instance, before the exam to practise the constructions.

« 8.1 Regular expression for a language

Course overview

8.3 From regular expression to automaton »

Exercise description

My submissions **0 / 50**

### Regular expression for a language

Consider the language  $L = \{w \in \{0, 1\}^* \mid w \text{ contains the substring } 0110\}$ .

Give a regular expression that describes the language.

The syntax for regular expressions is:

- alphabet: a, b, ..., z, 0, 1, ..., 9
- parentheses: (, )
- union: | (the vertical stroke symbol)
- empty string: \_ (the underscore symbol) or  $\epsilon$  (the greek epsilon)
- empty set: @ (the 'at'-symbol) or  $\emptyset$  (AltGr + Shift + ö on some keyboards)
- Kleene star: \* (the asterisk symbol)

For example, the regular expression `_|aa(bc)*` describes the language  $\{\epsilon, aa, aabc, aabcbc, aabcbcbc, \dots\}$  over the alphabet  $\{a, b, c\}$ .

Your solution:

Submit!

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Earned points

**0 / 1**

Exercise info

**Exercise category**  
Voluntary exercises

**Your submissions**  
0 / 50

**Deadline**  
Sat, 31 Dec 2022 23:59:00 +0200

**Total number of submitters**  
20