Interview Questions: Regular Expressions

3/3 points earned (100%)

Excellent!

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1 / 1 points

1.

Challenging REs. Construct a regular expression for each of the following languages over the binary alphabet or prove that no such regular expression is possible:

- All strings except 11 or 111.
- Strings with 1 in every odd-number bit position.
- Strings with an equal number of 0s and 1s.
- Strings with at least two 0s and at most one 1.
- Strings that when interpreted as a binary integer are a multiple of 3.
- Strings with no two consecutive 1s.
- Strings that are palindromes (same forwards and backwards).
- Strings with an equal number of substrings of the form 01 and 10.

a

Thank you for your response.

1 / 1 points

2.

Exponential-size DFA. Design a regular expressions of length n such that any DFA that recognizes the same language has an exponential number of states.

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Thank you for your response.

Hint: n^{th}-to-the-last bit equals 0.

1 / 1 points

3.

Extensions to NFA. Add to NFA.java the ability to handle multiway or, wildcard, and the + closure operator.

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Thank you for your response.