Exercises: Regular Expressions

The **hard deadline** for this quiz is **Wed 5 Jun 2013 8:59 PM PDT (UTC -0700)**.

To specify an array or sequence of values in an answer, you must separate the values by a single space character (with no punctuation and with no leading or trailing whitespace). For example, if the question asks for the first ten powers of two (starting at 1), the only accepted answer is:

1 2 4 8 16 32 64 128 256 512

If you wish to discuss a particular question and answer in the forums, please post the entire question and answer, including the seed (which is used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

☐ **In accordance with the Coursera Honor Code, I (Atul Gupta) certify that the answers here are my own work.**

Question 1

(seed = 269457)
Consider the NFA for the regular expression

```
( ( A | ( C * B ) ) * B )
```

with match transitions

```
 0     1     2     3     4     5     6     7     8     9     10    11    12    13
(()   (()   (A)---->(|)   (()   (C)---->(*)   (B)---->())   ())   (*)   (B)---->())   ( )
```

and epsilon transitions

```
0->1
1->10
1->4
1->2
3->9
4->5
5->6
6->7
6->5
8->9
9->10
10->11
10->1
12->13
```

Give the set of states (in ascending order) that the NFA could be in after reading
the following sequence of 6 characters:

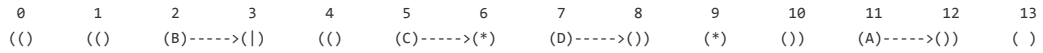
```
A B A C C C
```

Question 2

(seed = 262747)
Compute the NFA that corresponds to the following regular expression using
the NFA construction algorithm described in lecture and in the textbook:

```
    ( ( B | ( C * D ) * ) A )
```

Here are the match transitions:



Which of the following are edges in the epsilon-transition digraph?

- [ ] 8->9
- [ ] 1->5
- [ ] 10->4
- [ ] 6->5
- [ ] 5->7
- [ ] 9->4
- [ ] 1->4

- [ ] **In accordance with the Coursera Honor Code, I (Atul Gupta) certify that the answers here are my own work.**

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You cannot submit your work until you agree to the Honor Code. Thanks!