

Lab Two

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1 CRAFTING A COMPILER

1.1 EXERCISES 3.3 (REGULAR EXPRESSIONS AND DFAS)

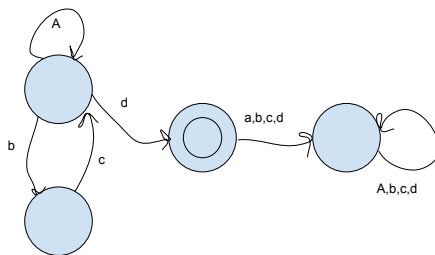
Write regular expressions that define the strings recognized by the DFAs in Figure 3.33 on page 107.

1. $ab * a | ba * a$
 2. $a | (ab * cda) *$
 3. $(ab * c) |$
- (1.1)

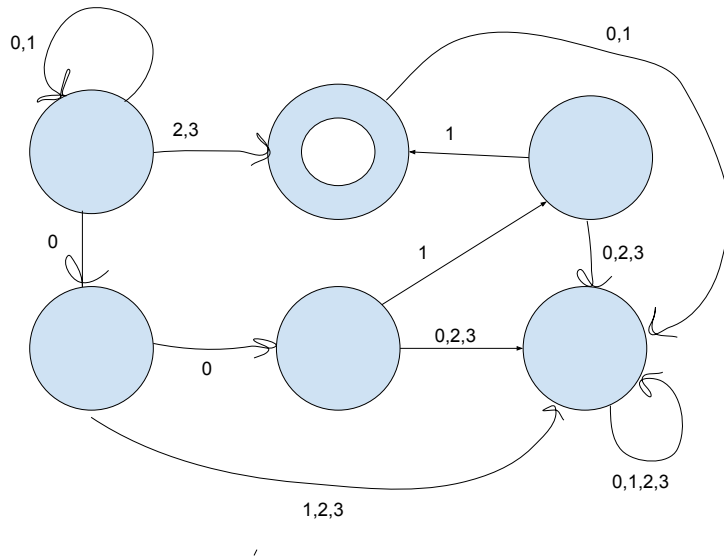
1.2 EXERCISE 3.4 (REGULAR EXPRESSIONS AND DFAS)

Write DFAs that recognize the tokens defined by the following regular expressions:

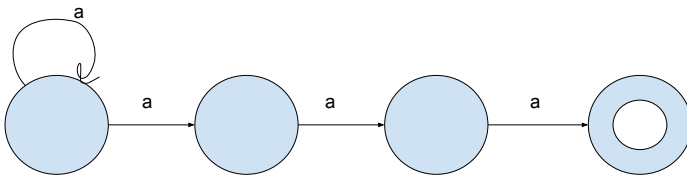
- (a) $(a | (bc) * d) +$



(b) $((0 \mid 1)^*(2 \mid 3)^+ \mid 0011)$



(c) $(a \text{ Not}(a))^*aaa$



2 DRAGON

2.1 EXERCISE 3.3.4 (CASE INSENSITIVITY IN REGULAR EXPRESSIONS)

Most languages are case sensitive, so keywords can be written only one way, and the regular expressions describing their lexemes are very simple. However, some languages, like SQL, are case insensitive, so a keyword can be written either in lowercase or in uppercase, or in any mixture of cases. Thus, the SQL keyword SELECT can also be written select, Select, or sELEcT, for instance. Show how to write a regular expression for a keyword in a caseinsensitive language. Illustrate the idea by writing the expression for "select" in SQL.

$$(S|s), (E|e), (L|l), (E|e), (C|c), (T|t) \tag{2.1}$$