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Exercises for Section 3.3
Exercise 3.3.2: Describe the languages denoted by the following regular expressions:

a) a (a | b)* a
b) ((ε | a) b*)*
c) (a | b) * a (a l b) (a l b)
d) a* b a* b a* b a*

Exercise 3.3.4: Most languages are case sensitive, so keywords can be written only one way, and the regular expressions describing their lexeme is 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 case-insensitive language. Illustrate the idea by writing the expression for "select" in SQL.

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Exercises for Section 3.4
Exercise 3.4.1: Provide transition diagrams to recognize the same languages as each of the regular expressions in Exercise 3.3.2. a)-d)

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Exercises for Section 3.5
Exercise 3.5.2: Write a Lex program that copies a file, replacing each nonempty sequence of white space by a single blank.

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Exercises for Section 3.6
Exercise 3.6.3: For the NFA of Fig. 3.29, indicate all the paths labeled aabb.
Does the NFA accept aabb?

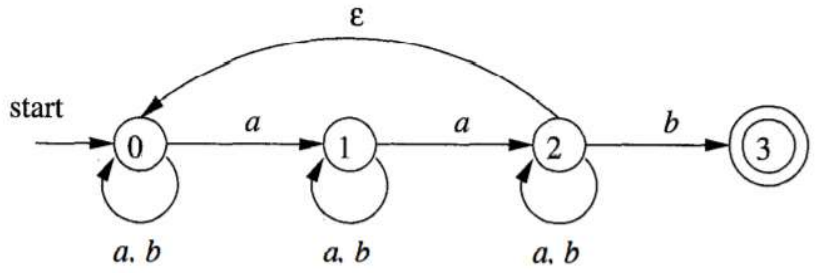

Figure 3.29: NFA for Exercise 3.6.3

Note: (0) -a-> (1) -a-> (2) -ε-> (0) -b-> (0) -b-> (0) is one of the paths

Exercise 3.6.5: Give the transition tables for the NFA of:

a) Exercise 3.6.3.