Islamic University – Gaza
Engineering Faculty
Department of Computer Engineering
ECOM 5060: Compiler Design Discussion

Chapter 3

Lexical Analysis

(Section 3.4)

Eng. Eman R. Habib

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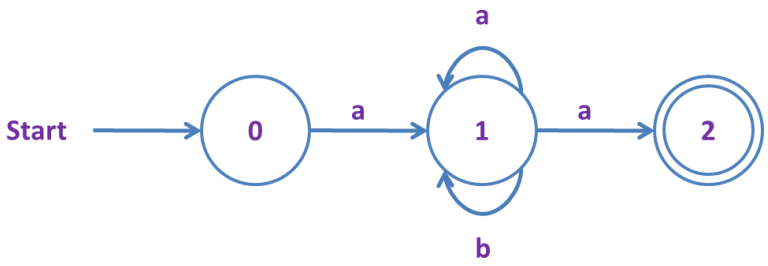
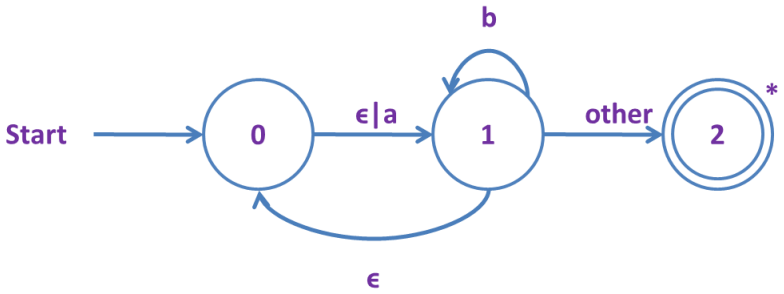
Exercises 3.4.1: provide transition diagrams to recognize the same languages as each of the regular expressions in Exercises 3.3.2:

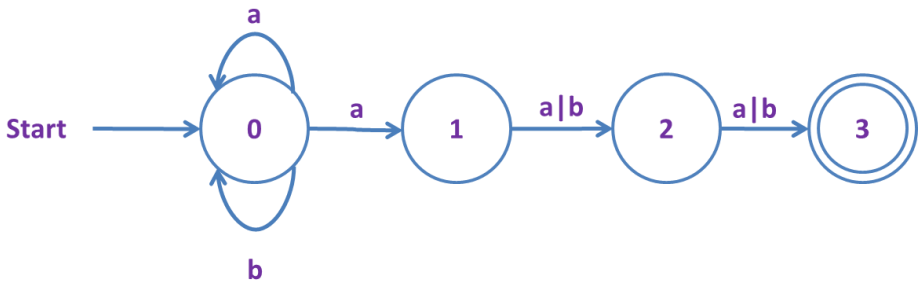
a) a(a|b)*a



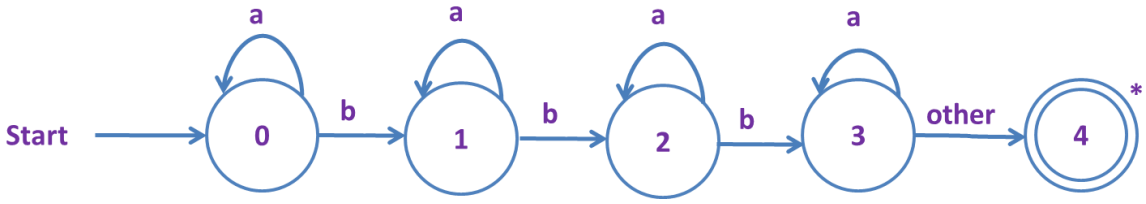
b) ((∈|a)b*)*



c) (a|b)*a(a|b)(a|b)



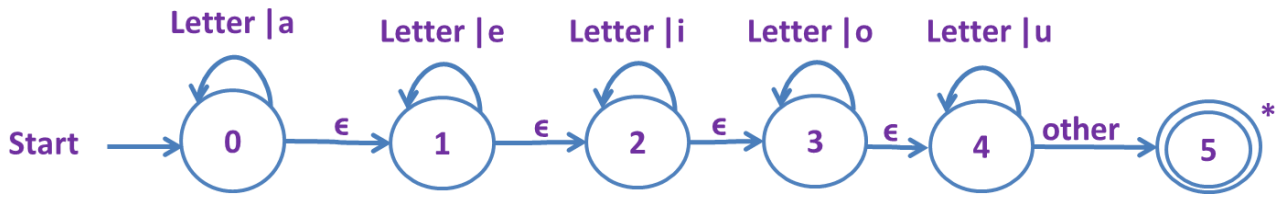
d) a*ba*ba*ba*



Exercises 3.4.2: provide transition diagrams to recognize the same languages as each of the regular expressions in Exercises 3.3.4:

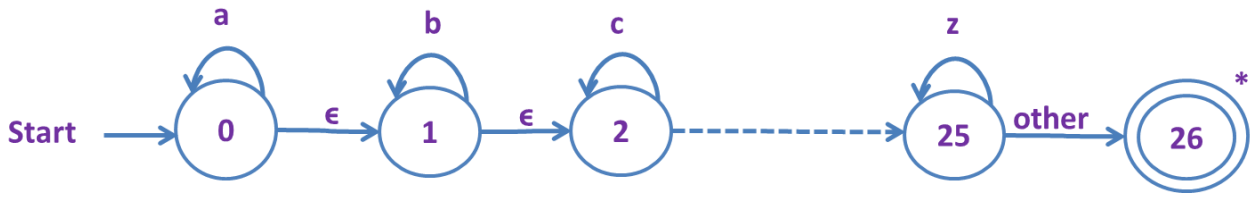
a) All strings of lowercase letters that contain the five vowels (a, e, i, o, or u) in order.

Letter → [b-d f-h j-n p-t v-z]
String → (Letter|a)* (Letter|e)* (Letter|i)* (Letter|o)* (Letter|u)*



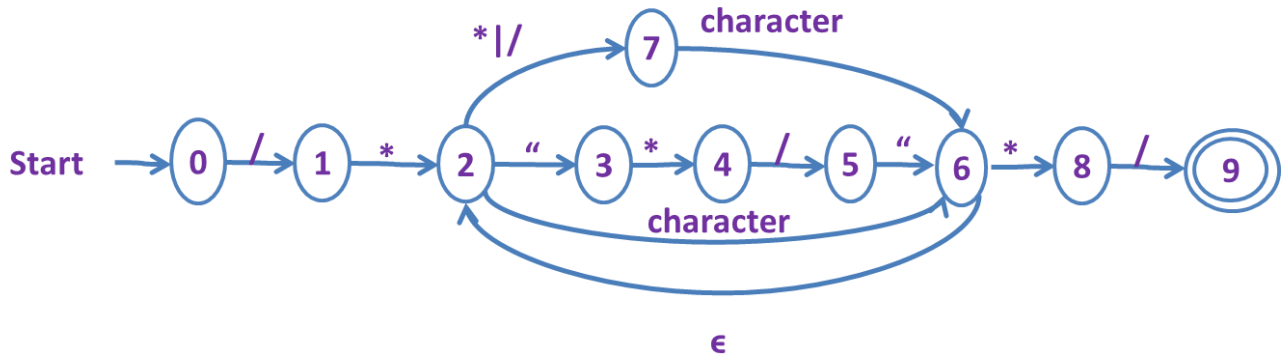
b) All strings of lowercase letters in which the letters in are in ascending lexicographic order.

String → a*b*c*d*……z*



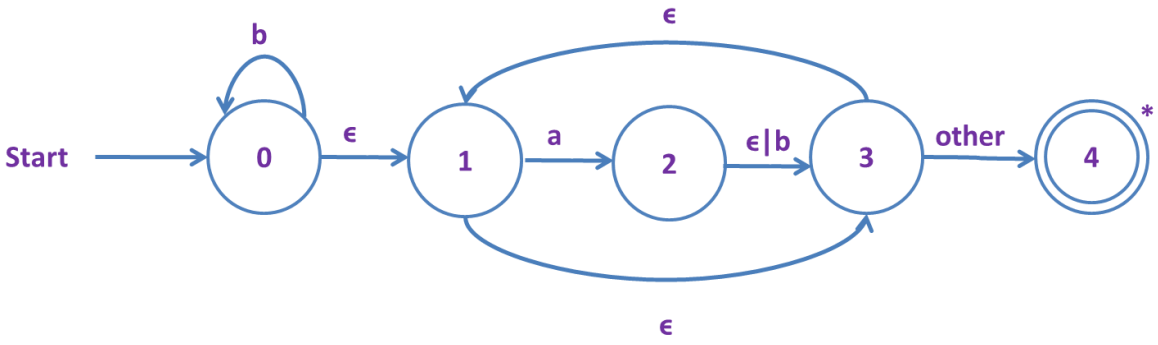
c) Comments, consisting of a string surrounded by /* and */, without an intervening */, unless it is inside double-qoutes(“)

Character → [a-zA-Z0-9]
Comment → /* (Character|“*/”|(*|/) Character)* */



h) All strings of a's and b's that do not contain the substring abb.

b* (a (∈|b))*



i) All strings of a's and b's that do not contain the subsequence abb.

b* a*(∈|b) a*