

3.3.2

Describe the language denoted by the following regexs.

a) $a(a|b)^*a$: ~~Strings composed by a's and b's which needs to start and finish with a~~

↳ String composed by a's and b's which needs to start and not finish with a

b) $((\epsilon|a)b^*)^*$:

↳ Any String generated (composed by a's and b's)

c) $(a|b)^*a(a|b)(a|b)$:

with a**ob** Any String where the [-3] index is a,
and the last two a or b

3.3.5

Write reg. def for the following.

a) All strings of lowercase that contains -the five vowel in order-

~~several letters~~

~~consist of vowels~~

~~consists of~~

valid \rightarrow consonants* a (a|consonants)* e (e|consonants)* i (i|consonants)* o (o|consonants)* u (u|consonants)*

consonants = ["b", "c", "d", "f", "g", "h", "j", "k", "l", "m", "n", "p", "q", "r", "s", "t", "v", "w", "x", "y", "z"] \cup (u|consonants)*

b) All the strings of letters where -the letters are in ascending order-

↳ $a^*b^*c^*d^*e^*f^*g^*h^*i^*j^*k^*l^*m^*n^*o^*p^*q^*r^*s^*t^*u^*v^*w^*x^*y^*z^*$

3.3.6

Write character classes for the following sets of chars.

a) the first ten letters up to "j" in upper or lower case

→ [A-Ja-j]

b) The digits on hexadecimal numbers

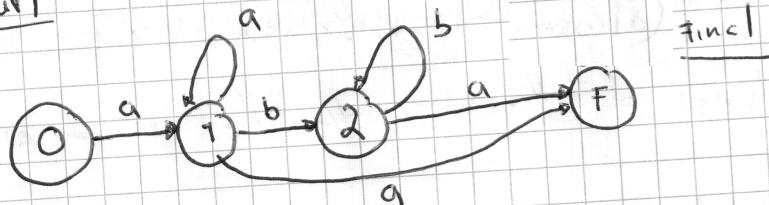
→ [0-9a-f] = =

3.4.7

Provide transitions diagrams to the exercise in 3.3.2

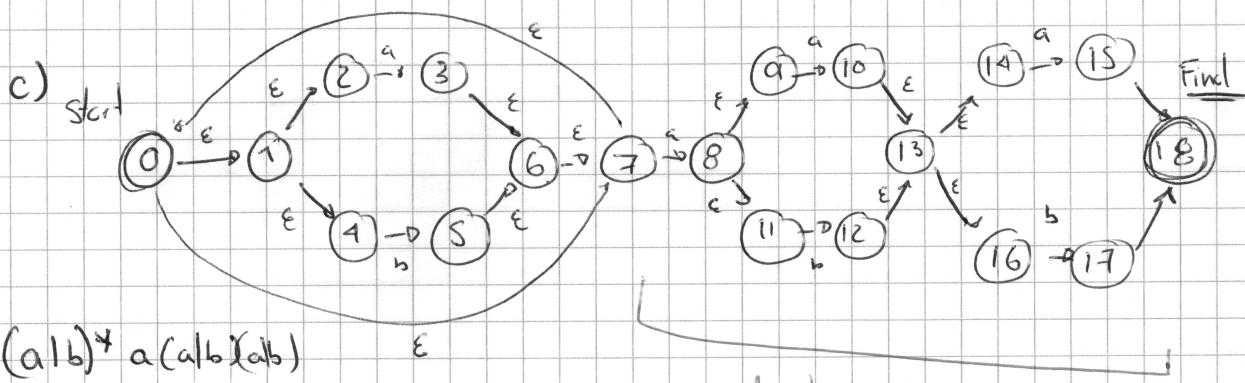
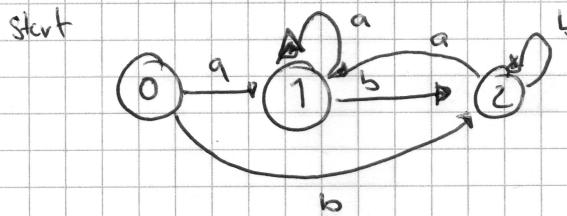
a) $a(a|b)^*a$

start



final

b) $((\epsilon|a)b^+)^*$ Final States $\{0, 1, 2\}$



Last 3 characters

$a(a|b)(a|b)$

3.4.2

a)

vowels = {a, e, i, o, u}

cons = {b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z}

