# Exercise 2.1 – regular expressions

a)  All strings of lowercase letters that begin and end in a
    a([a-z]*a)?

b)  All strings of lowercase letters that either begin or end in a (or both)
    a[a-z]* | [a-z]*a

c)  All strings of digits that contain no leading zeroes
    nonzero = 1 | 2 | … | 9
    digit = 0 | nonzero
    answer = 0 | nonzero digit*

d)  All strings of digits that represent even numbers
    even = 0 | 2 | 4 | 6 | 8
    answer = even | [1-9] [0-9]* even

e)  All strings of digits such that all the 2's occur before all the 9's
    dignot9 = 0 | 1 | … | 8
    dignot2 = 0 | 1 | 3 | 4 | … | 9
    answer = dignot9* dignot2*

f)  All strings of a's and b's that contain no three consecutive b's
    (a | ba | bba)* (**e** | b | bb)
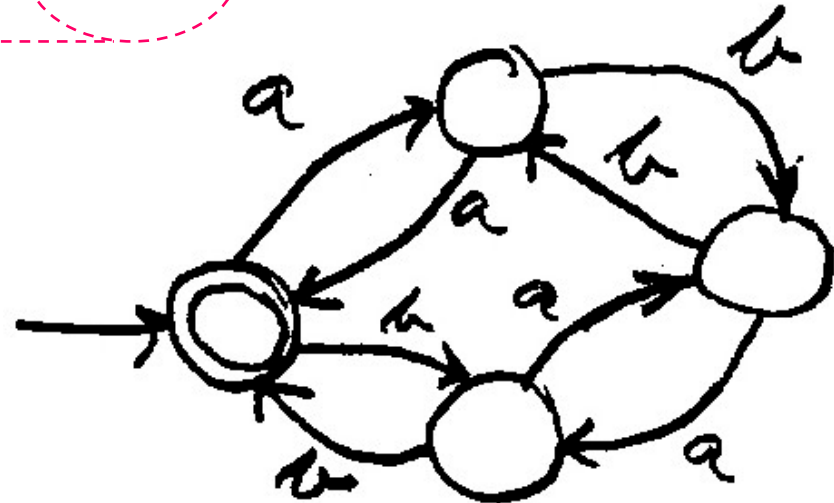
# Exercise 2.1 – regular expressions

g)  All strings of a's and b's that contain an odd number of a's and an odd number of b's (or both)

  b*ab*(ab*ab*)* | a*ba*(ba*ba*)*

h)  All strings of a's and b's that contain an even number of a's and an even number of b's

  (aa | bb)* ( (ab | ba) (aa | bb)*  (ab | ba) (aa | bb)* )*

i)  All strings that contain exectly as many a's and b's

  impossible – requires counting of arbitrary many a's