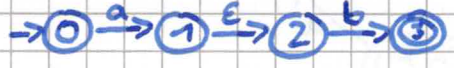
Assignment 4 of CoCo

Farin Lippmann

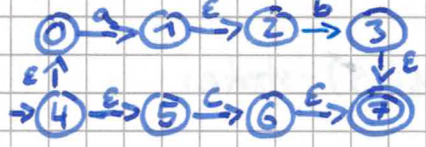
4.1

Step 1 - Construct 1-symbol-recognizers.

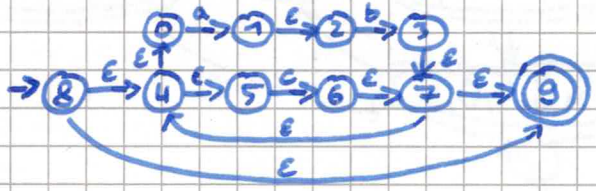
Step 2 - Construct „a b"



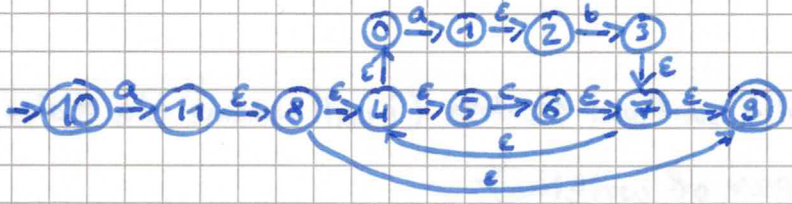
Step 3 - Construct „c | a b"



Step 4 - Construct „(c | ab)*"



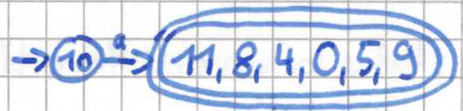
Step 5 - Construct „a(c | ab)*"



4.2

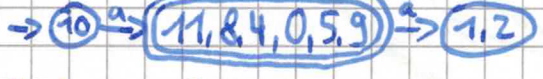
1-Starting state (with ε-closure): 

2- ε-closure of reachable states with an „a":



3- do same for all other letters → no results

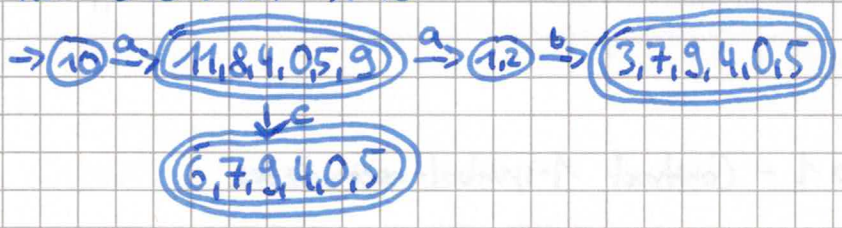
4- now do the same for the new state for „a":



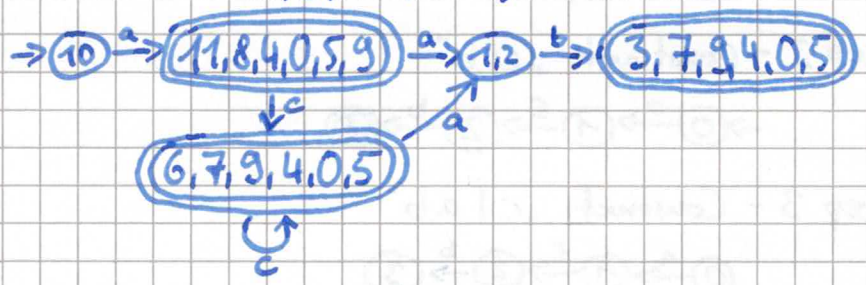
and for „c":

(nothing new for „b")

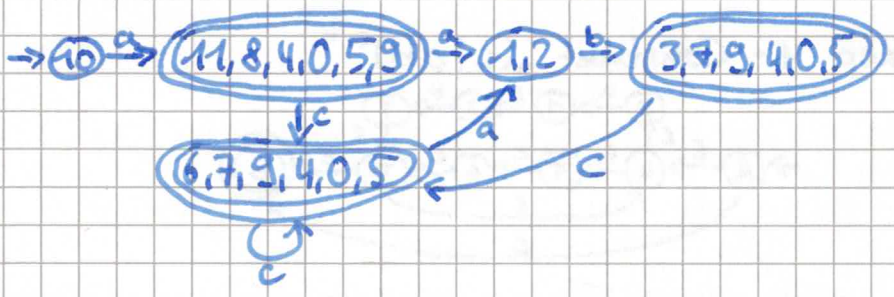
5- now the (1,2) - state:



6- now the (6,7,9,4,0,5) - state:



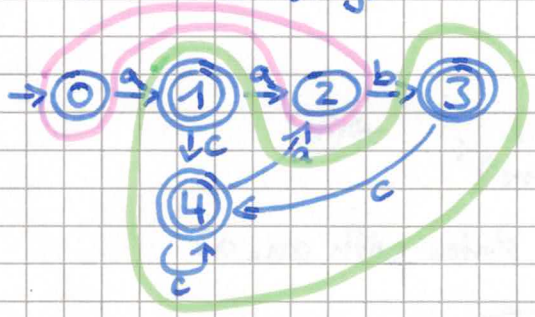
7- now the (3,7,9,4,0,5) - state:



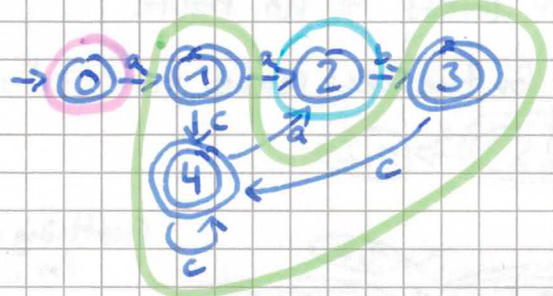
8- no more new states to check, we are done!

4.3

1- Split on final states (i will rename the states for ease of writing):



2- Split first group, the states behave differently for "a" and "b":



3- No more splits neccessary, all groups are homogeneous with respect to their behaviour on all possible symbols: