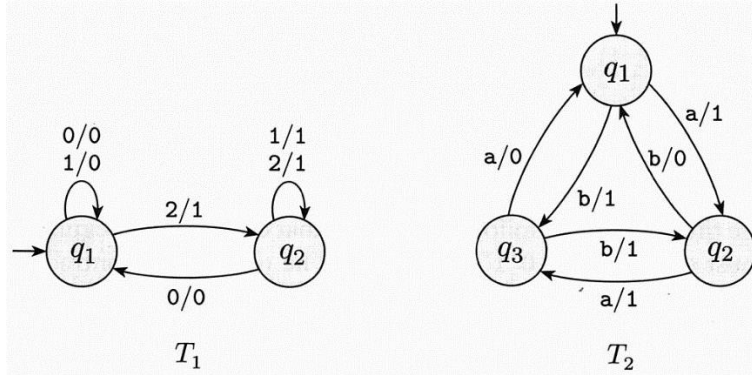


Theory of Computation, CSCI 438 spring 2022
Definition of Regular languages, pg. 40-44, Jan. 14

Exercise 1.24 a, b, f & g, 1.25 & 1.26 (page 87)

1.24 Given the two transducers T_1 and T_2



Give the sequence of states entered and the output produced in each of the following parts.

a. T_1 on input 001

b. T_1 on input 211

f. T_2 on input bbab

g. T_2 on input ϵ

1.25 Read the informal definition of the finite state transducer given in Exercise 1.24. Give a formal definition of this model, following the pattern in Definition 1.5 (page 35). Assume that an FST has an input alphabet Σ and an output alphabet Γ but not a set of accept states.

Include a formal definition of the computation of an FST.

1.26 Using the solution you gave to Exercise 1.25, give a formal description of the machines T1 and T2 depicted in Exercise 1.24.