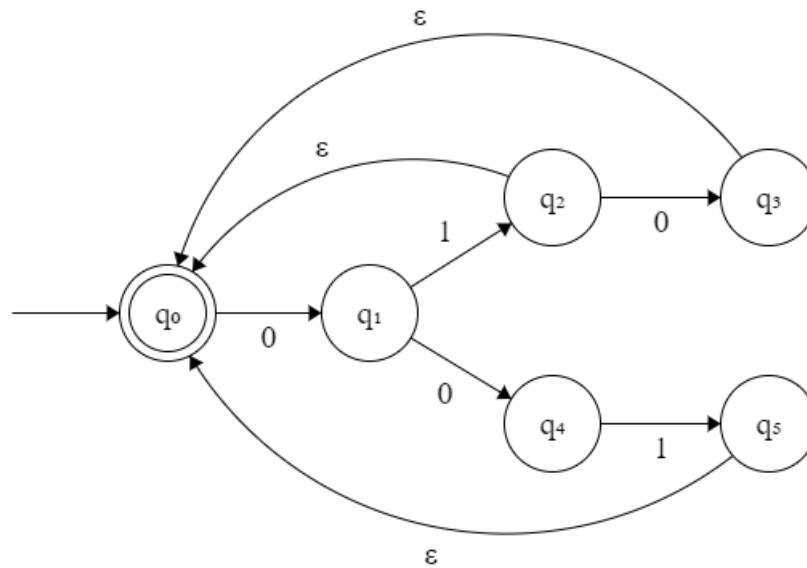


CMPS 130

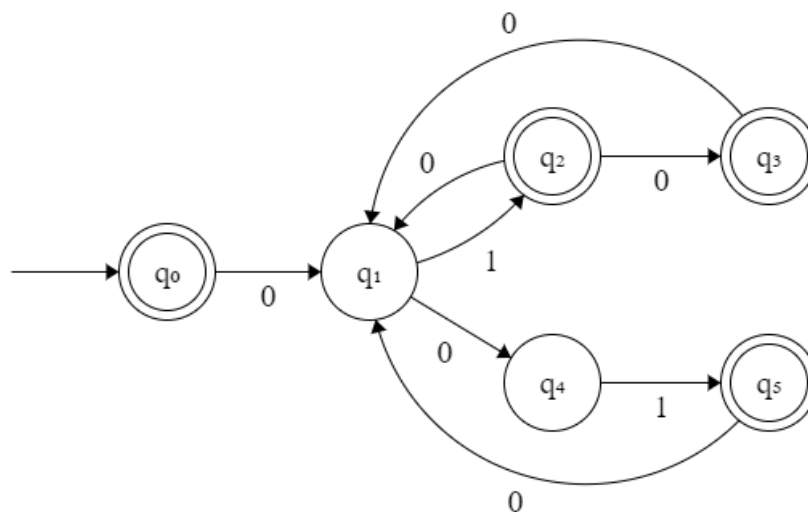
Homework 4

Textbook Exercises

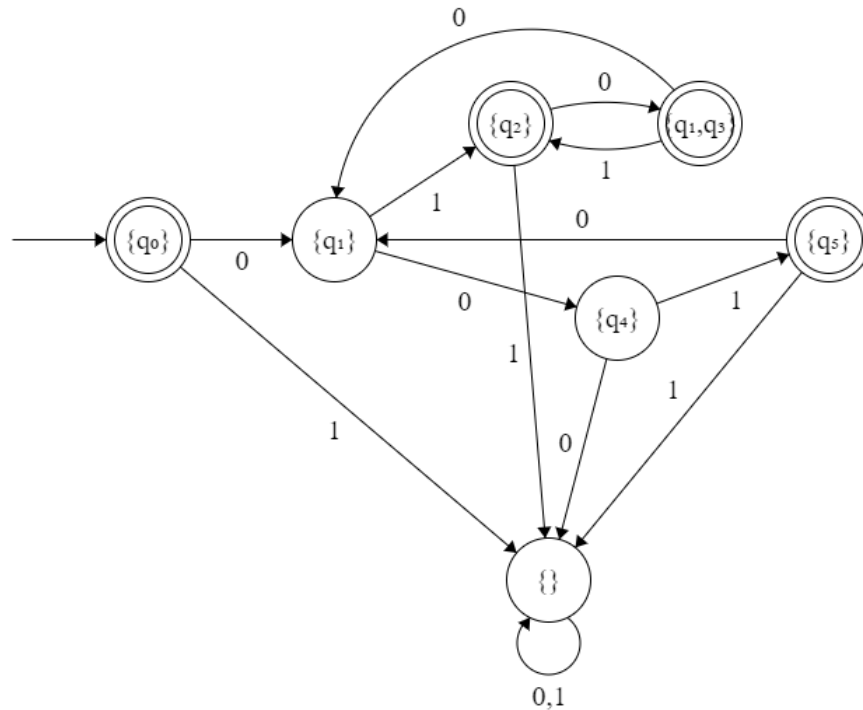
1.17 a. Here is an ε -NFA for $(01+001+010)^*$:



I converted this ε -NFA to an NFA:

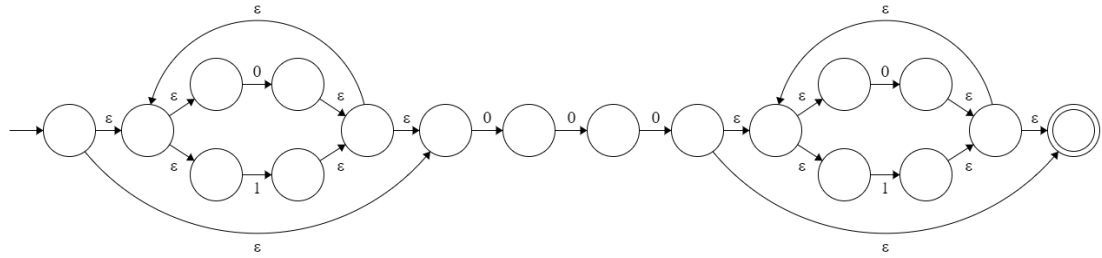


- b. Using the subset construction and only drawing reachable states, I get a DFA for $(01+001+010)^*$:

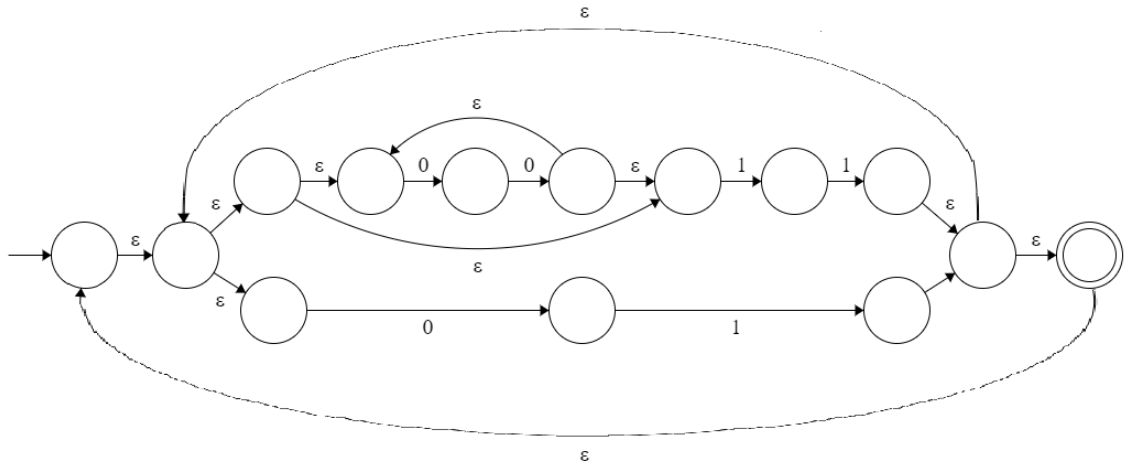


- 1.18a. $1(0+1)^*0$
 b. $0^*10^*10^*1(0+1)^*$
 c. $(0+1)^*0101(0+1)^*$
 d. $(0+1)(0+1)0(0+1)^*$
 e. $0((0+1)(0+1))^*+1(0+1)((0+1)(0+1))^*$
 f. $(10+0)^*1^*$
 g. $(0+1+\epsilon)(0+1+\epsilon)(0+1+\epsilon)(0+1+\epsilon)(0+1+\epsilon)$
 h. $\epsilon+1+11111^*+1^*0(0+1)^*$
 i. $(1(0+1))^*(1+\epsilon)$
 j. $000^*+1000^*+0100^*+0^*0010^*$
 k. $\epsilon+0$
 l. $1^*(01^*01^*)^*+0^*10^*10^*$
 m. \emptyset
 n. $(0+1)(0+1)^*$

1.19 a. $(0+1)^*000(0+1)^*$



b. $((00)^*(11))^*01)^*$



c. \emptyset^*

