Exercise 2.1

We did the tutorial, but are so kind to upload only the pdf without all the .jff files ;)

Exercise 2.2

(a) This is the graphical representation of $M = \langle \{ q_0, q_1, q_2, q_3 \}, \{ a, b \}, \delta, \ q_0, \{ q_2 \} \rangle$.

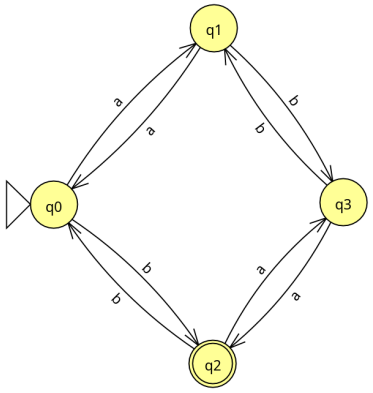

Figure 1: Graphical representation of M

(b) For the sequence "abbab", we visit the following states:

$$q_0 \to q_1 \to q_3 \to q_1 \to q_0 \to q_2$$

As you can see, we end up at q_3 which isn't our final state (q_2).

(c)

Exercise 2.3

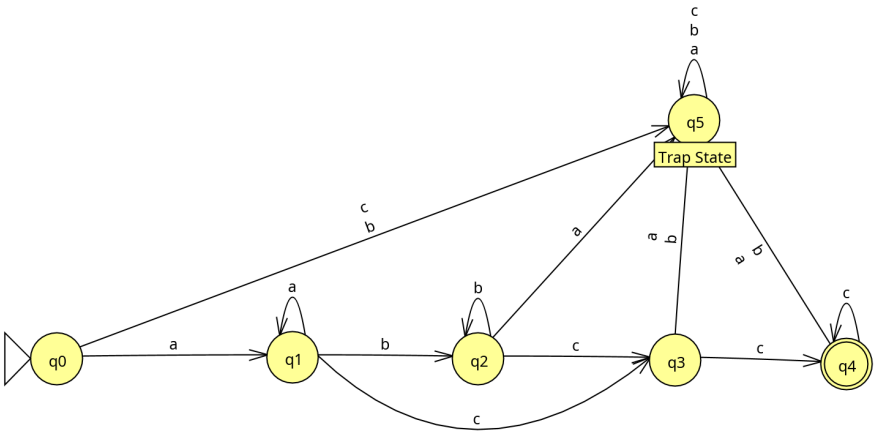

Figure 2: The DFA for the language $L = \{\, a^x b^y c^z \mid x \geq 1,\ y \geq 0,\ z \geq 2 \,\}$

Exercise 2.4

(a) Yes, because if we follow the states given by the word 0101010 we end up at q_2, which is a final state of the NFA.

(b) This is the DFA equivalent to the NFA on the Exercise sheet.

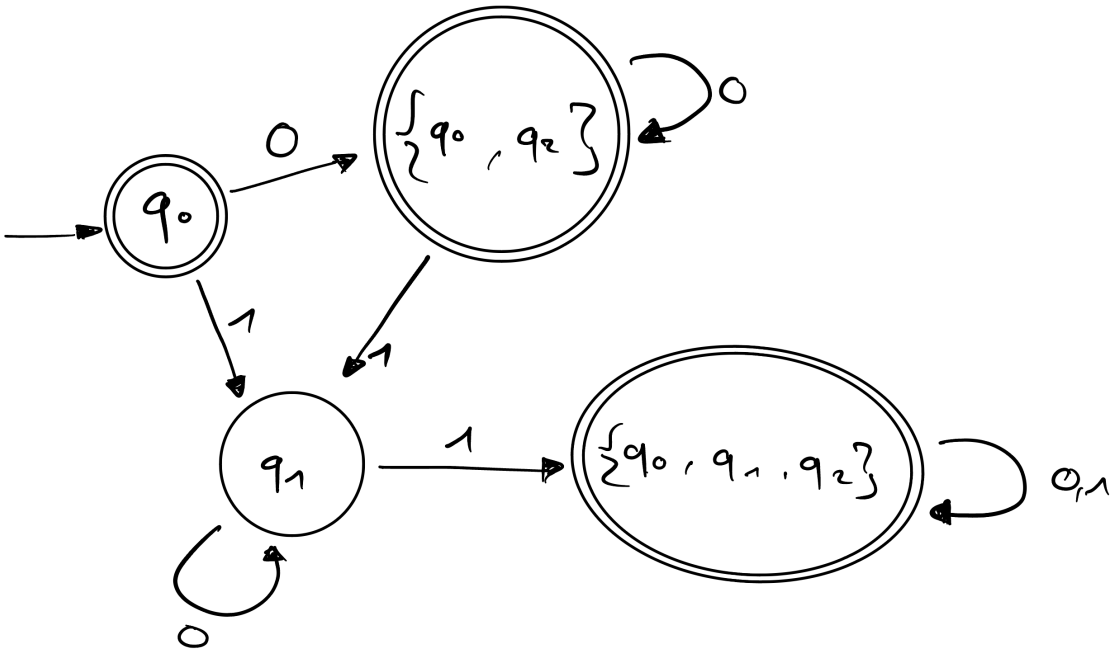

Figure 3: DFA