Práctica 2
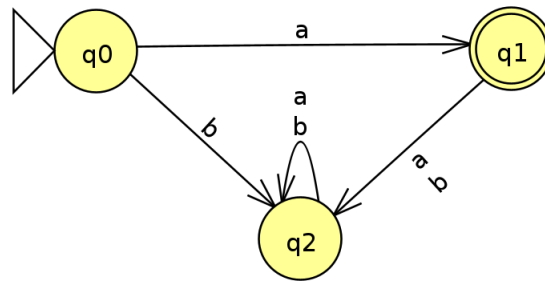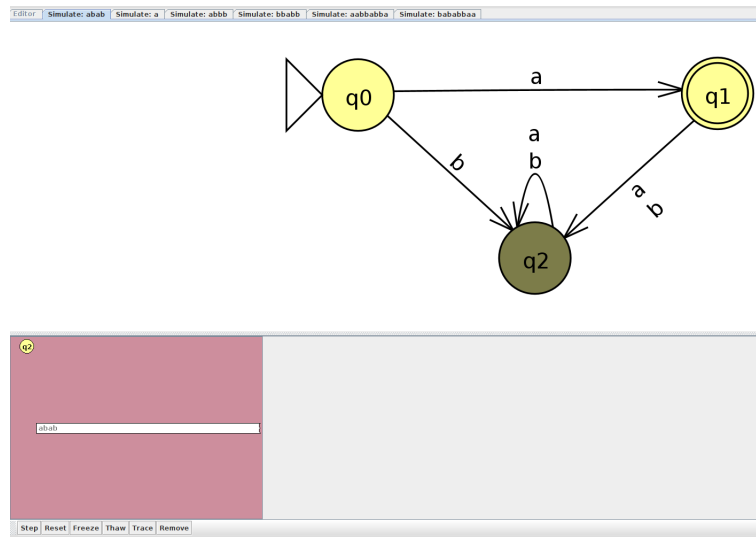
Jorge Barceló Orellana

Ejercicio 1

Consider the language over the alphabet {a, b} that only contains the string a.

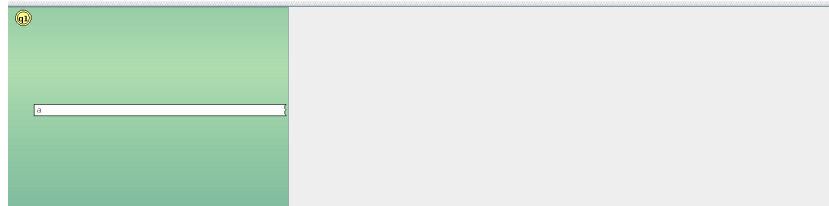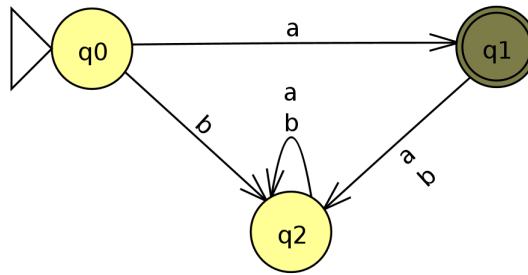1. Build a DFA that recognizes this language and rejects all those strings that do not belong to the language.

$$M = (\{q_0, q_1, q_2\}, \{a, b\}, \delta, q_0, \{q_2\})$$ (1)

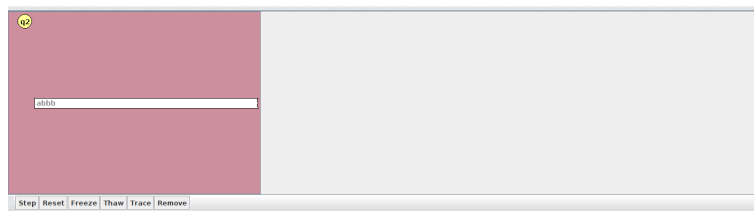| $\delta(q, \sigma)$	a	b
q_0	q_1	q_2
q_1	q_2	q_2
q_2	q_2	q_2

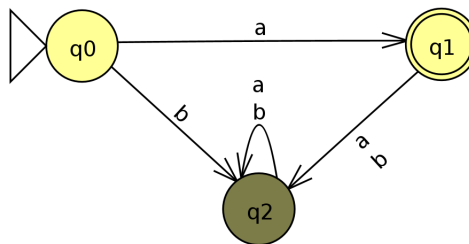*Prueba de la cadena "abab"*

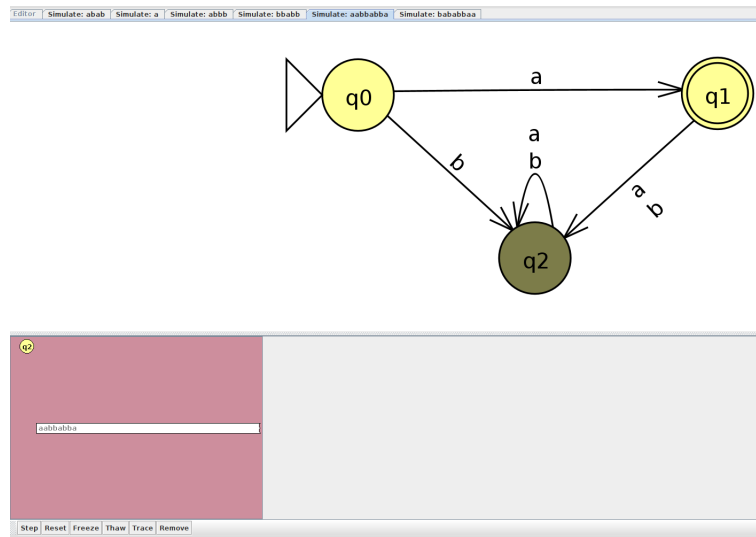2. Test the automaton that you have created by introducing 6 chains.

Prueba de la cadena "a"

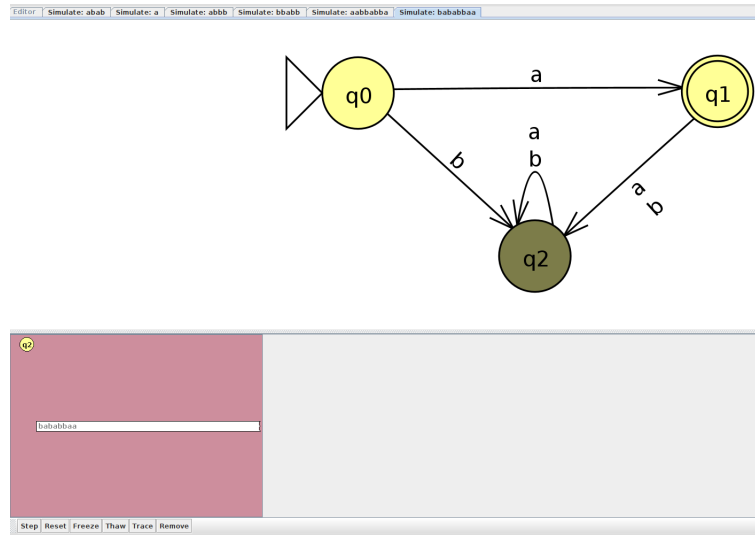Step Reset Freeze Thaw Trace Remove

Prueba de la cadena "abbb"

Prueba de la cadena "bbabb"

Prueba de la cadena "aabbabba"

Prueba de la cadena "bababbaa"

Ejercicio 2

Finite automaton in Octave:

1. Open the Octave finiteautomata.m script and test it with the given example (see script help) in the GitHub repository.

   Prueba con octave usando el script:

```
>> finiteautomata("aa*bb*", "ab")
warning: strmatch is obsolete; use strncmp or strcmp instead

M = ({q0, q1, q2}, {a, b}, q0, {q2}, {(q0, a, q1), (q1, a, q1), (q1, b, q2), (q2, b, q2)})

w = ab

(q0, ab) ⊢ (q1, b) ⊢ (q2, ε)

x ∈ 𝓛(M)
ans = 1
```

2. Specify in finiteautomata.json the automaton created in Activity 1 and test it with the script!

   Prueba con Octave utizando mi propio autómata en el script:

5

```
>> finiteautomata("automata_mio","a")

M = ({q0, q1, q2}, {a, b}, q0, {q2}, {(q0, a, q1), (q0, b, q2), (q1, a, q2), (q1, b, q2), (q2, a, q2),
q2)})

w = a

(q0, a) ⊢ (q1, ε)

x ∉ L(M)
ans = 0
```