

# Práctica nº2

Juan José Rodríguez Hernández

31/10/2022

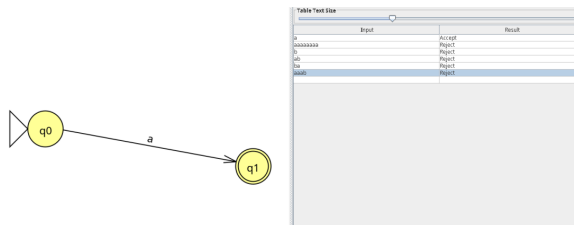
1 Consider the language over the alphabet  $\{a, b\}$  that only contains the string  $a$ .

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

El autómata es una 5-tupla  $(K, \Sigma, \delta, s, F)$ , donde:

- $K = \{q_0, q_1\}$
- $\Sigma = \{a, b\}$
- $s = q_0$
- $F = \{q_1\}$
- $\delta(q_0, a) = q_1$

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



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

```
{
  "name" : "ejercicio1",
  "representation" : {
    "K" : ["q0", "q1"],
    "A" : ["a", "b"],
    "s" : "q0",
```

```

        "F" : ["q1"],
        "t" : ["q0", "a", "q1"]
    }
}
octave:1> finiteautomaton("ejercicio1", "a")
warning: strmatch is obsolete; use strncmp or strcmp instead

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

w = a

(q0, a) produces (q1, epsilon)

x in L(M)

ans = 1

octave:2> finiteautomaton("ejercicio1", "b")

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

w = b

(q0, b)

x not in L(M) (blocked computation)

ans = 0

octave:3> finiteautomaton("ejercicio1", "ab")

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

w = ab

(q0, ab) produces (q1, b)

x not in L(M) (blocked computation)

ans = 0

```