

# Actividades Práctica 2

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

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

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

a) El AFD que nos piden sería el siguiente:

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

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

JFLAP : (DFA\_ACTIVIDAD1.jff)

File Input Test View Convert Help

Editor Simulate: aabab Simulate: abbab Multiple Run

```
graph LR; start(( )) --> q0((q0)); q0 -- a --> q1(((q1))); q0 -- b --> q2((q2)); q1 -- a --> q2; q1 -- b --> q2; q2 -- a --> q2; q2 -- b --> q2;
```

Table Text Size

Input	Result
abbbbba	Reject
baba	Reject
a	Accept
ababab	Reject
bab	Reject
aaaba	Reject

Load Inputs Run Inputs Clear Enter Lambda View Trace

1 2 3 4 pcmanfm-qt - 2 windo... Gummi - 2 windows Octave jfsobrinor26@miPC: ~... JFLAP : (DFA\_ACTIVIDAD1.jff) capturas en ubuntu - ... 10:46

## 2. Finite automaton in Octave:

- a. Open the Octave `finiteautomata.m` script and test it with the given example (see script help) in the GitHub repository.
- b. Specify in `finiteautomata.json` the automaton created in Activity 1 and test it with the script!

```
"name" : "a",  
"representation" : {  
  "K" : ["q0", "q1", "q2"],  
  "A" : ["a", "b"],  
  "s" : "q0",  
  "F" : ["q1"],  
  "t" : ["q0", "a", "q1"],  
        ["q0", "b", "q2"],  
        ["q1", "a", "q2"],
```

```
    ["q1", "b", "q2"],  
    ["q2", "a", "q2"],  
    ["q2", "b", "q2"]]  
}
```