Konzepte konkreter und abstrakter Maschinen

Übungsblatt 0 19. September 2016

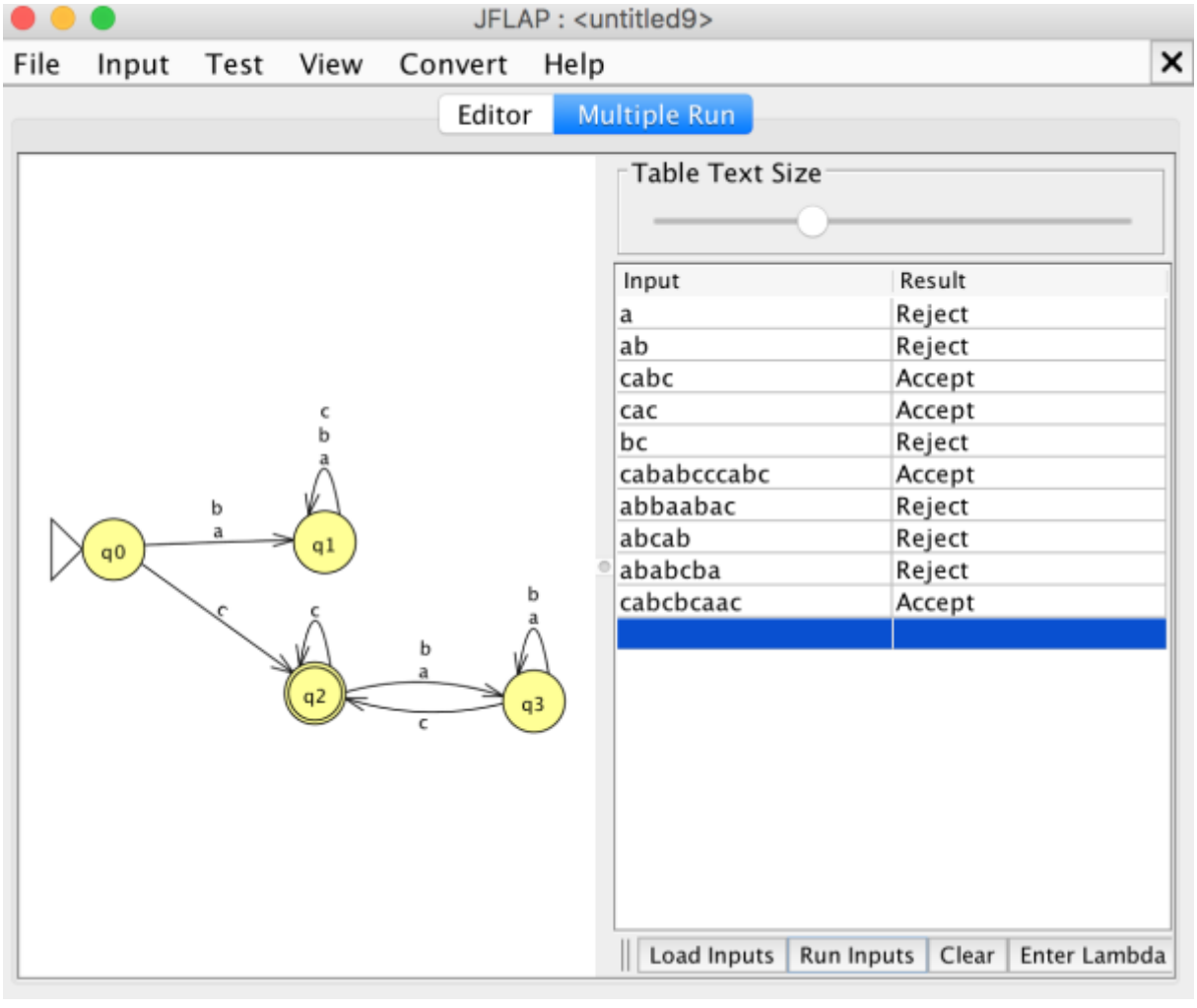
Aufgabe 3

Modul

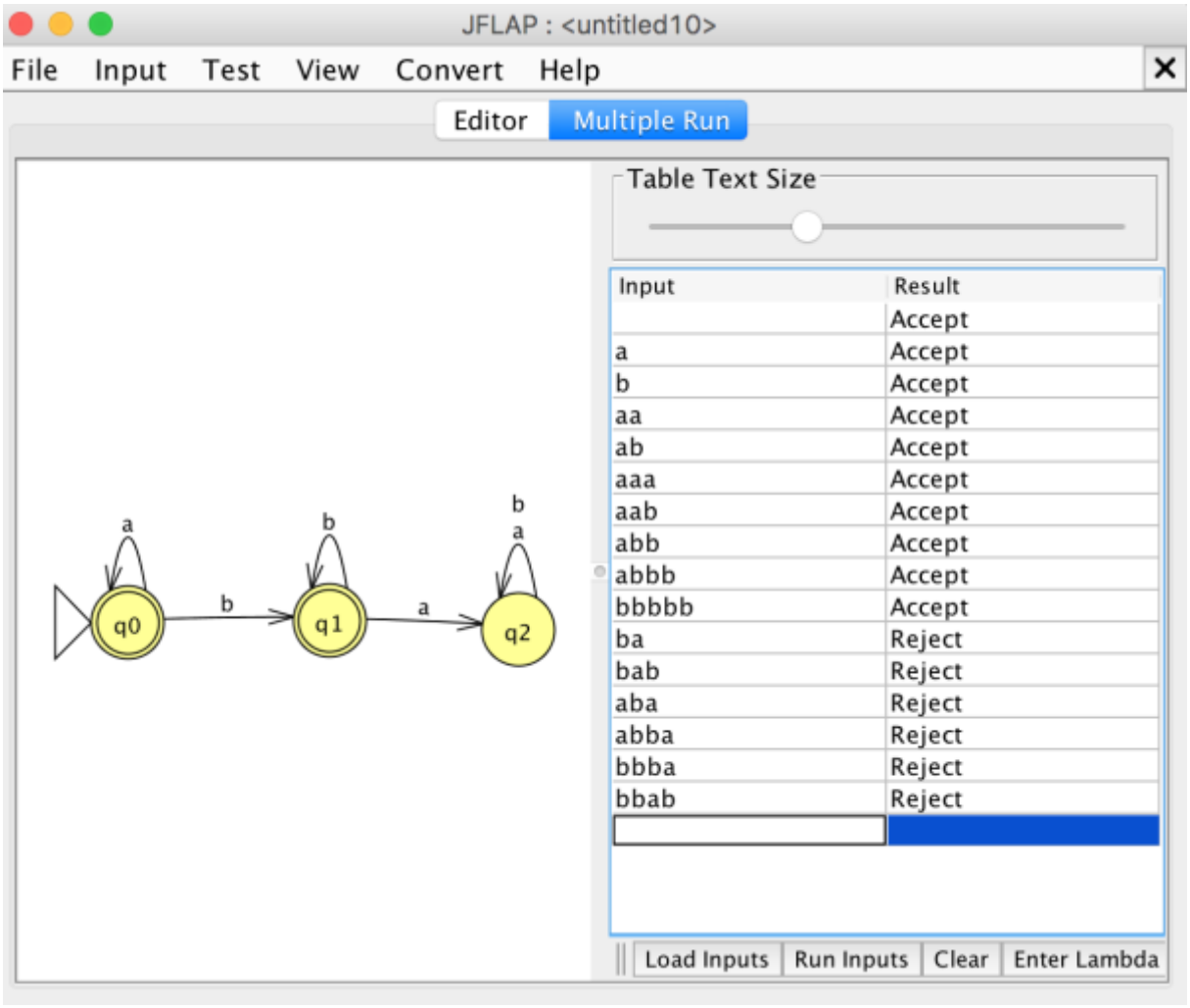
Consider the regular language L over the alphabet { a, b, c } comprised of all strings that begin and end with c. Let's construct a DFA M to recognize that language.

Some strings in the language include: c, cc, ccc, cac, cabc, cabcbabc

Some strings not in the language include: λ, a, ac, cb, ccca

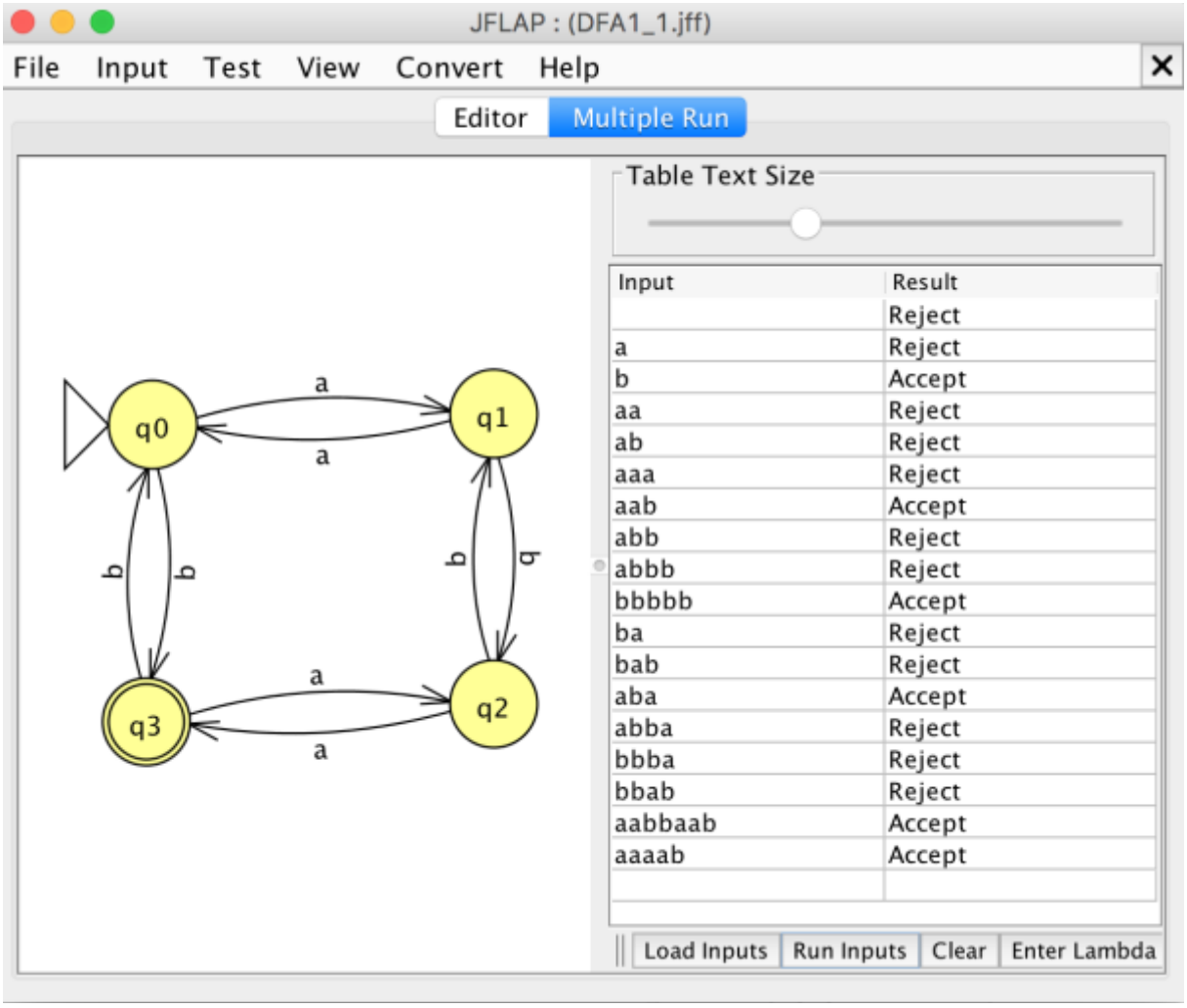


Create a DFA for the language
{ w | w is a string symbols from alphabet {a, b} in which a never follows b }.

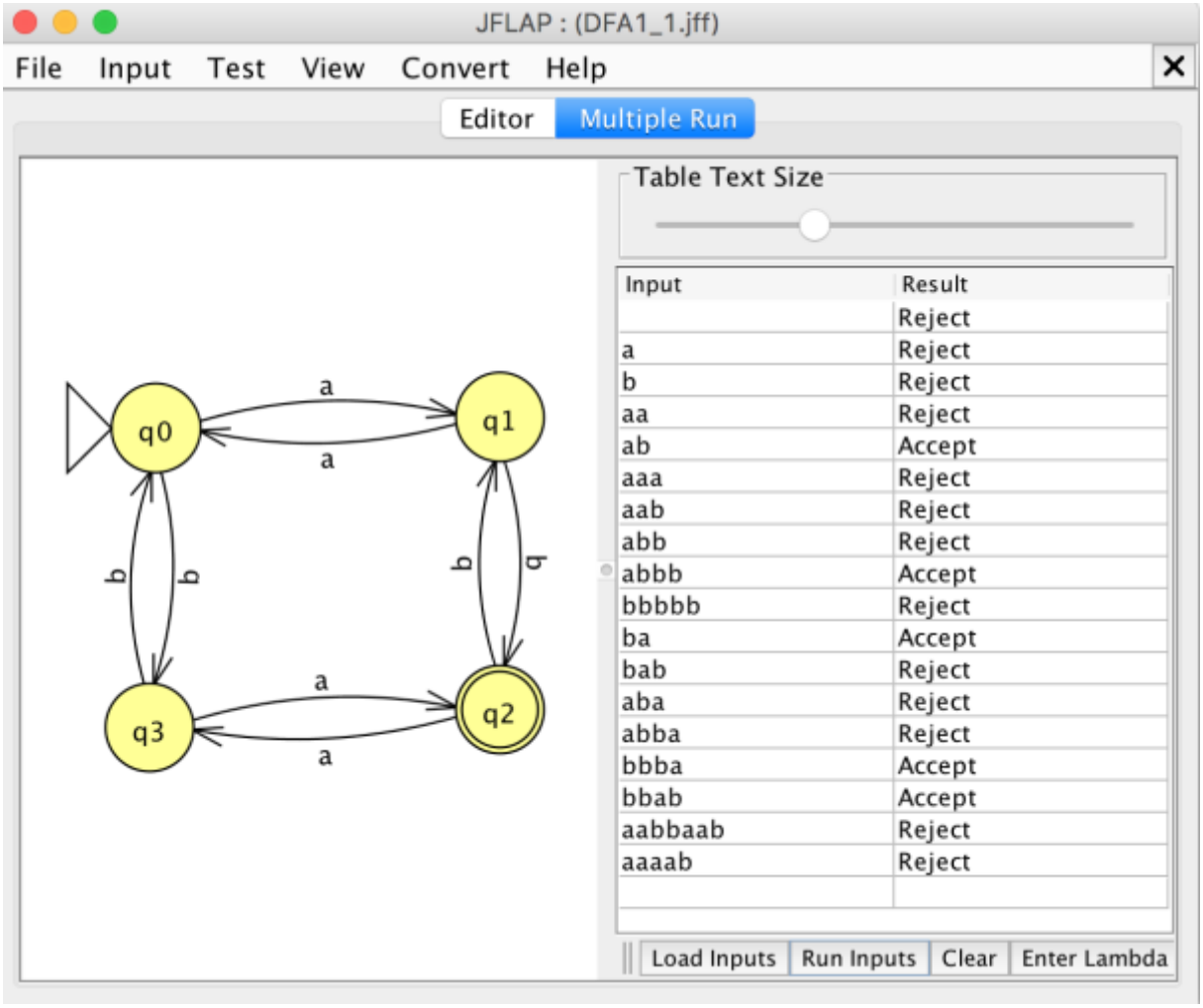

JFLAP : <untitled10>
File
Input
Test
View
Convert
Help
Editor
Multiple Run
Table Text Size
Input
Result
Accept
a
Accept
b
Accept
aa
Accept
ab
Accept
aaa
Accept
aab
Accept
abb
Accept
abbb
Accept
bbbbb
Accept
ba
Reject
bab
Reject
aba
Reject
abba
Reject
bbba
Reject
bbab
Reject
Load Inputs
Run Inputs
Clear
Enter Lambda
q0
q1
q2
a
b
b
a
b
a

Exercise 1

$$L = \{w \in \Sigma^* | w \text{ has an even number of } a\text{'s and an odd number of } b\text{'s}\}.$$

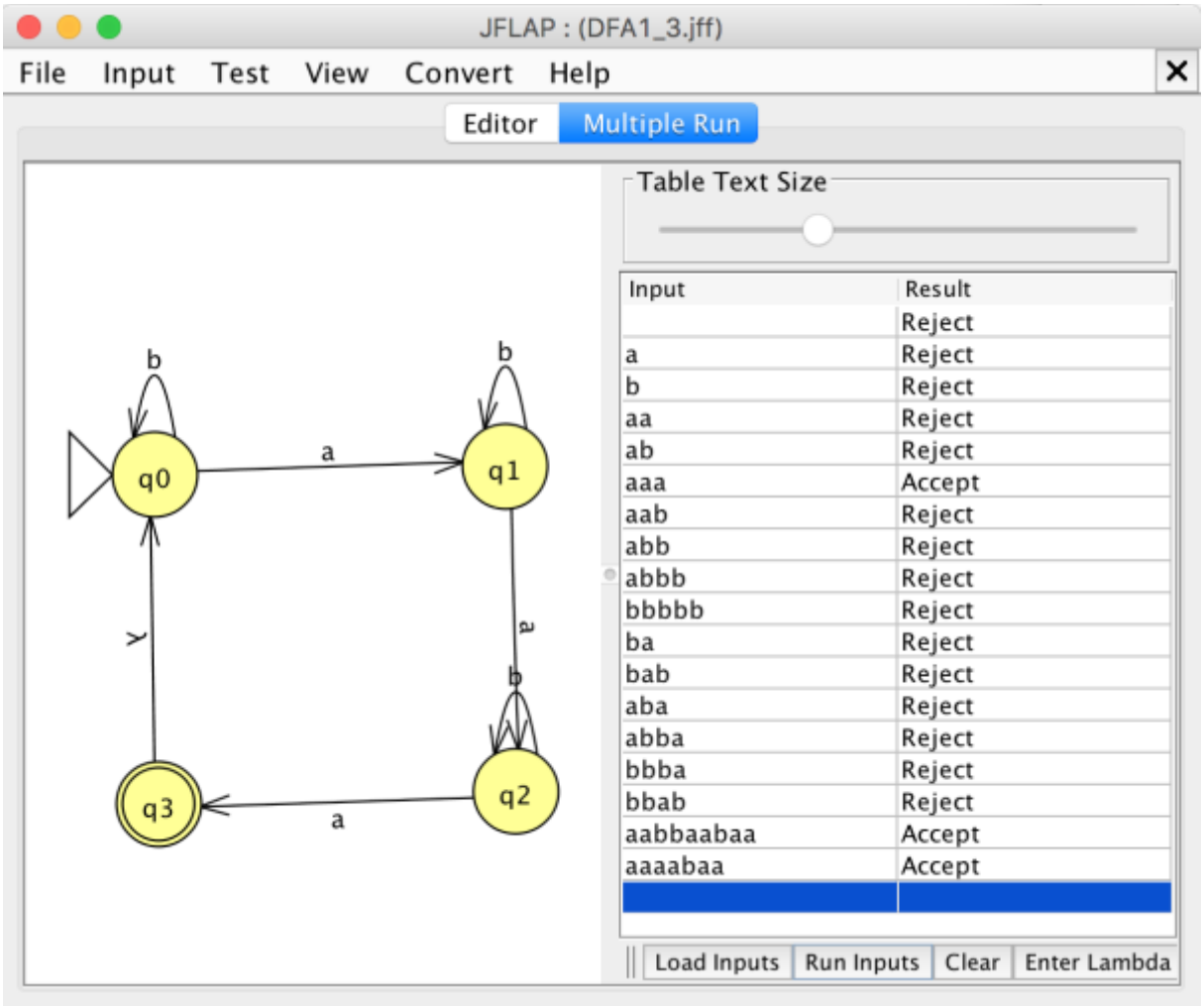


Repeat the above steps for the language
$L_1 = \{w \in \Sigma^* | w \text{ has an odd number of } a\text{'s and an odd number of } b\text{'s}\}$



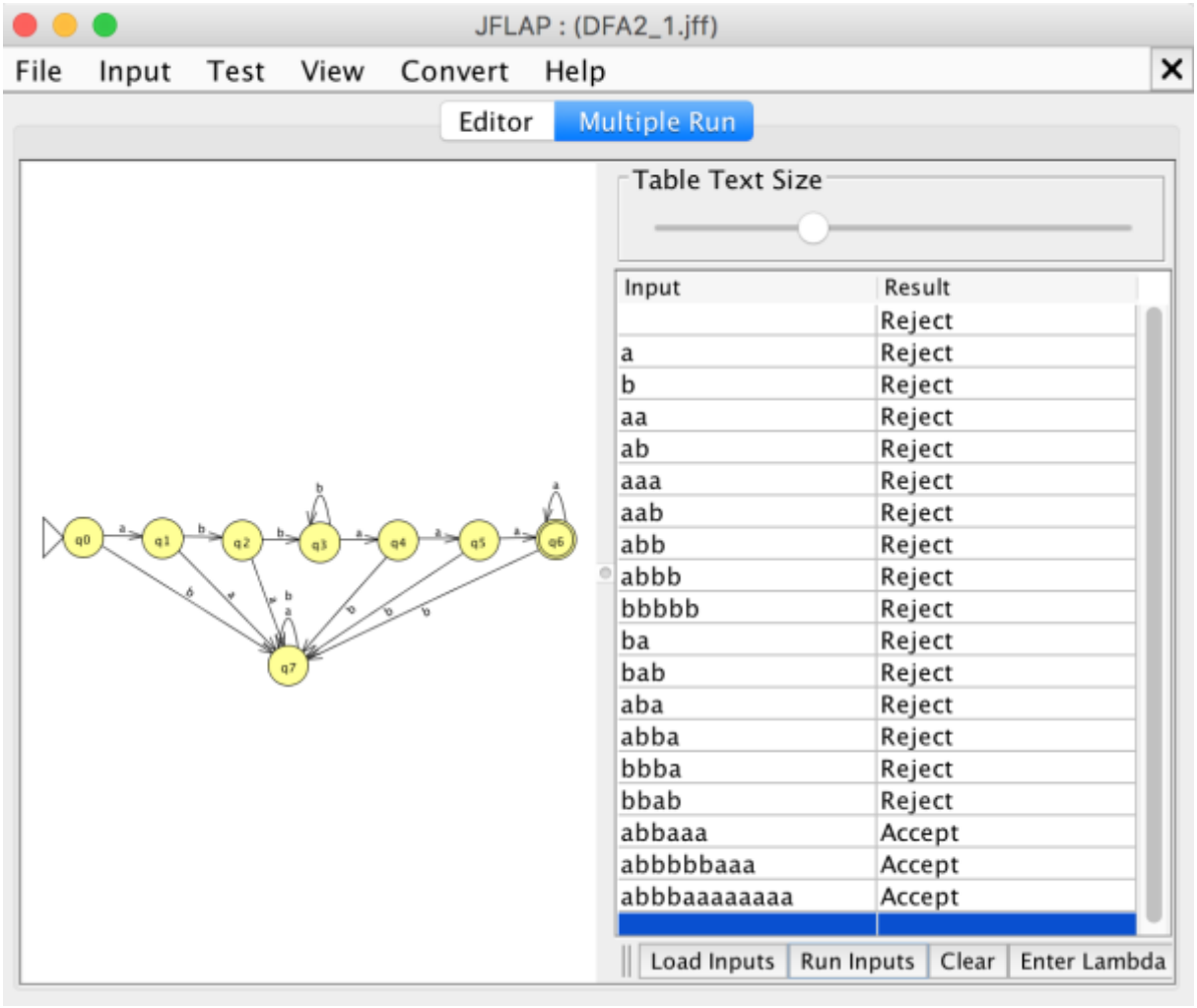
Repeat the above steps for the language

$L_2 = \{w \in \Sigma^* |$ The number of a's in w is a multiple of $3\}$



Exercise 2

Construct a DFA for $L = \{ab^n a^m : n \geq 2, m \geq 3\}$.



Exercise 3

Given the Alphabet {a,b,c} construct a DFA which accepts (a|b)*c