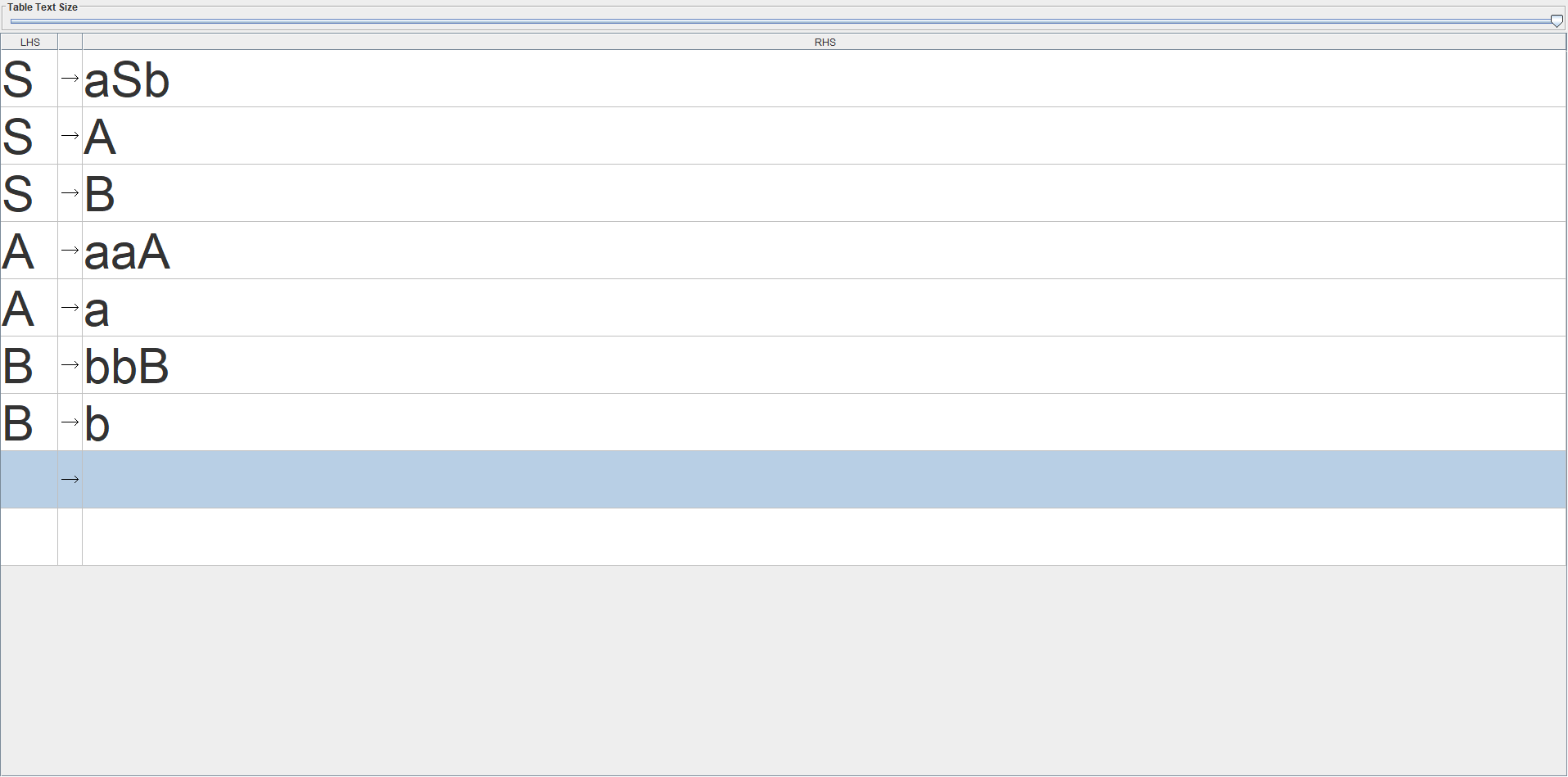
1. الف) گرامر اول :

S->aSb|A|B

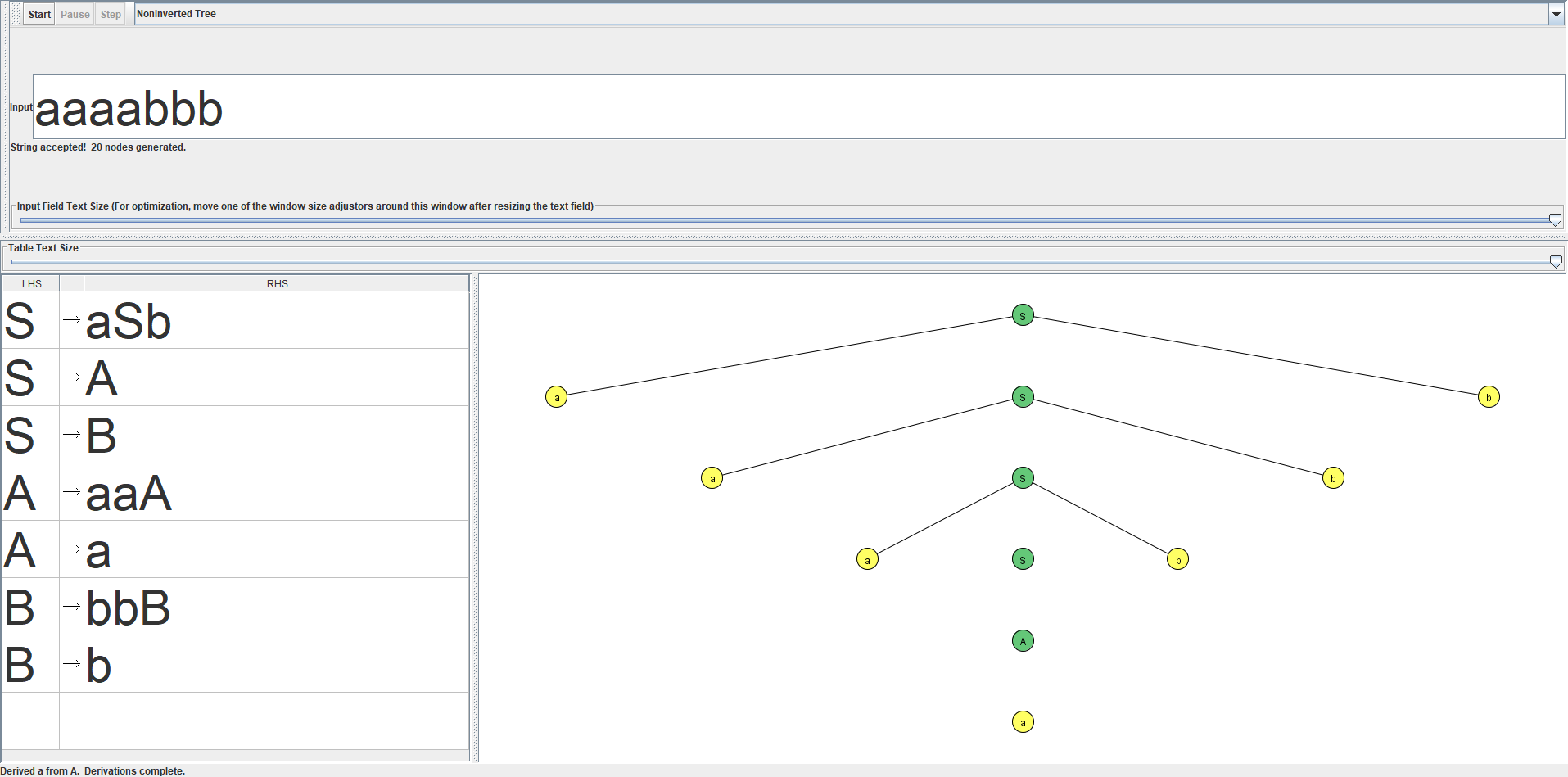
A->aaA|a

B->bbB|b

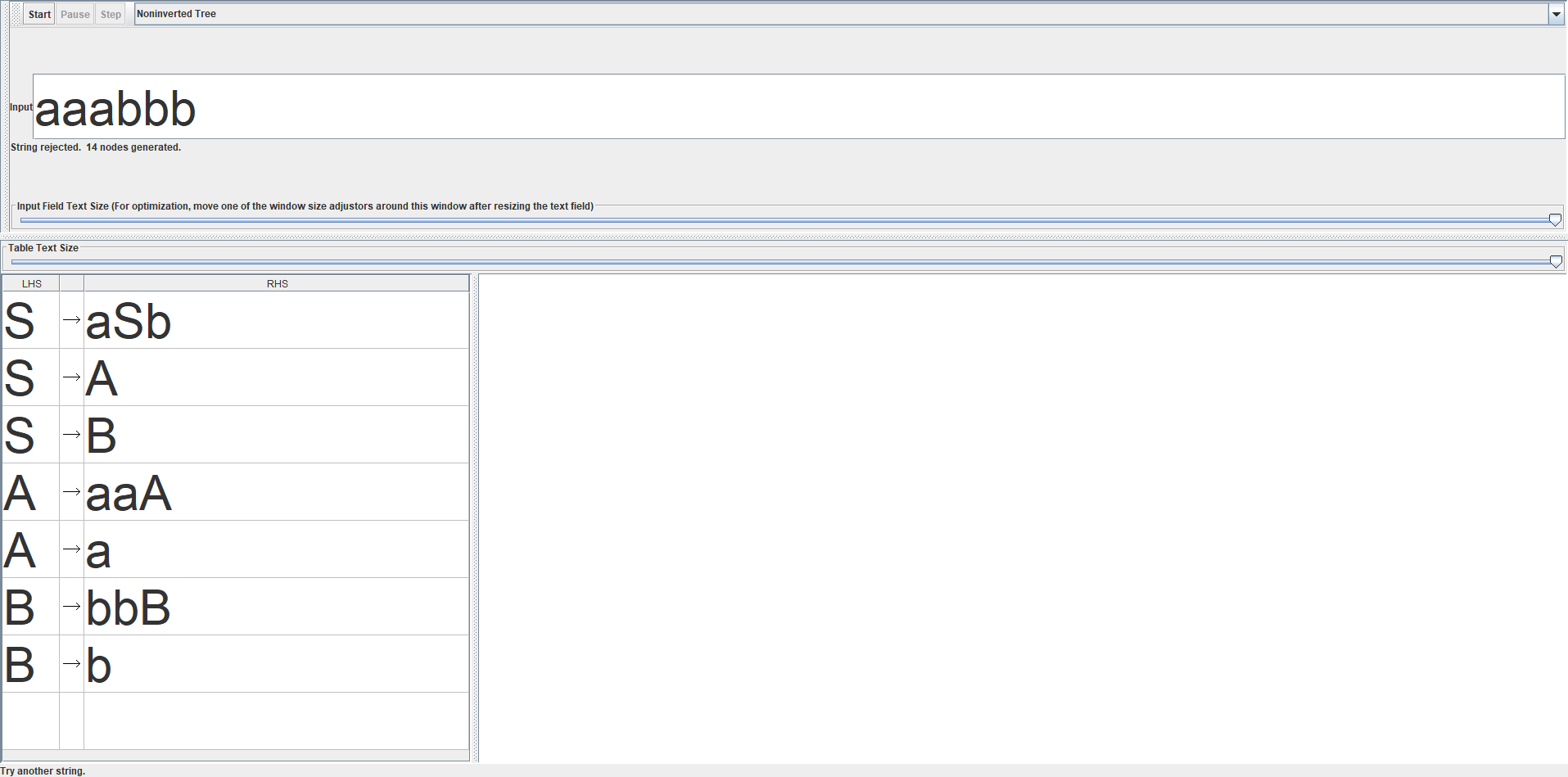


رشته های ورودی :

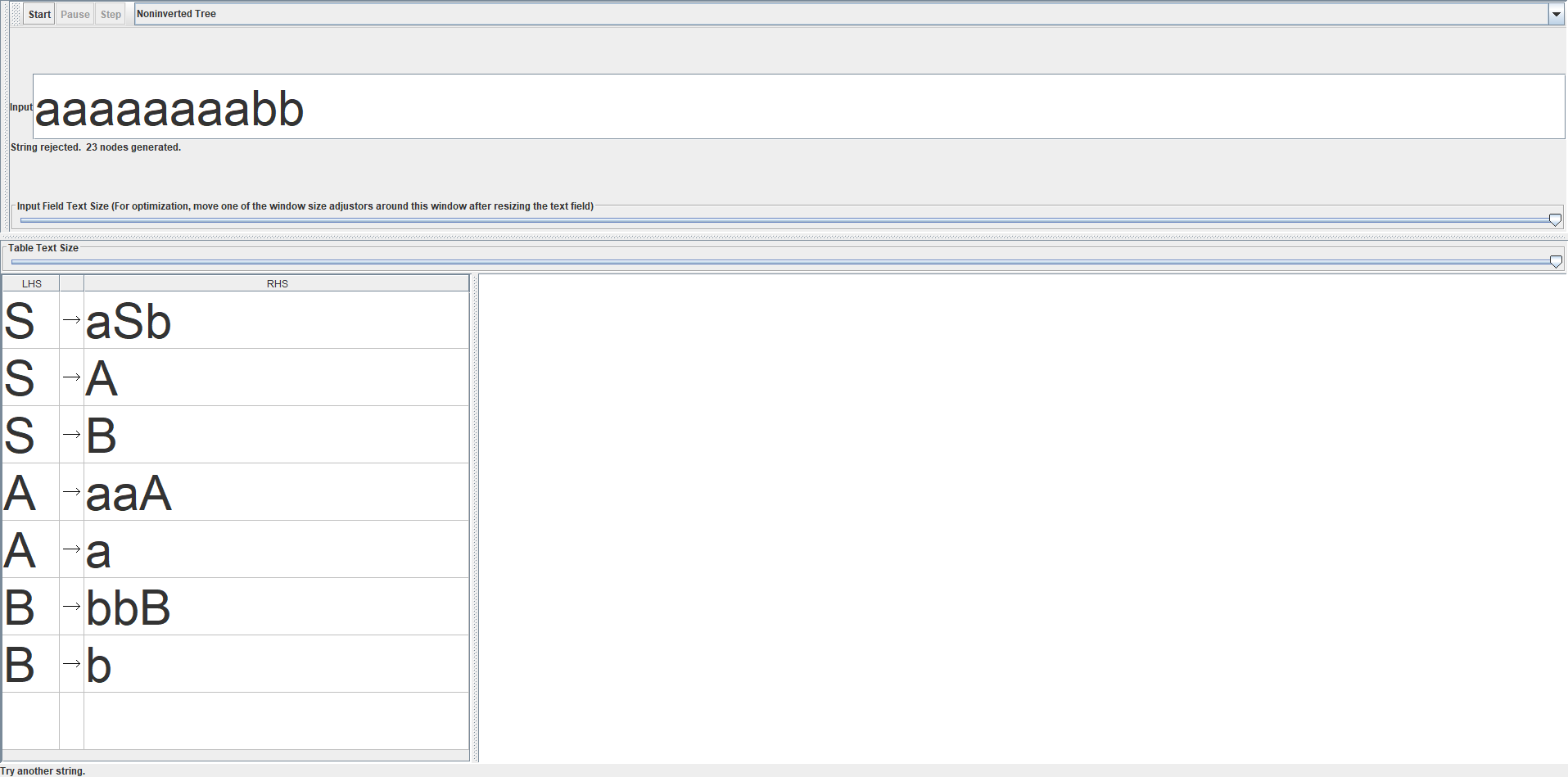
1.aaaabbb accepted



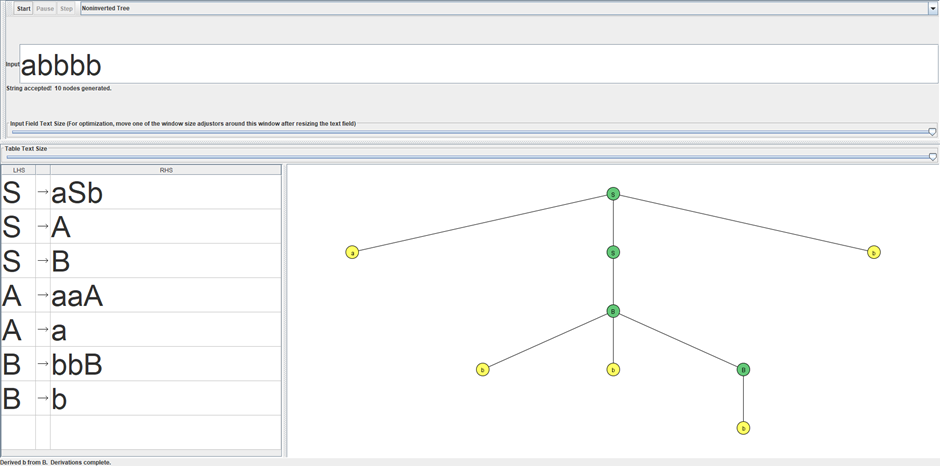
2.aaabbb not accepted



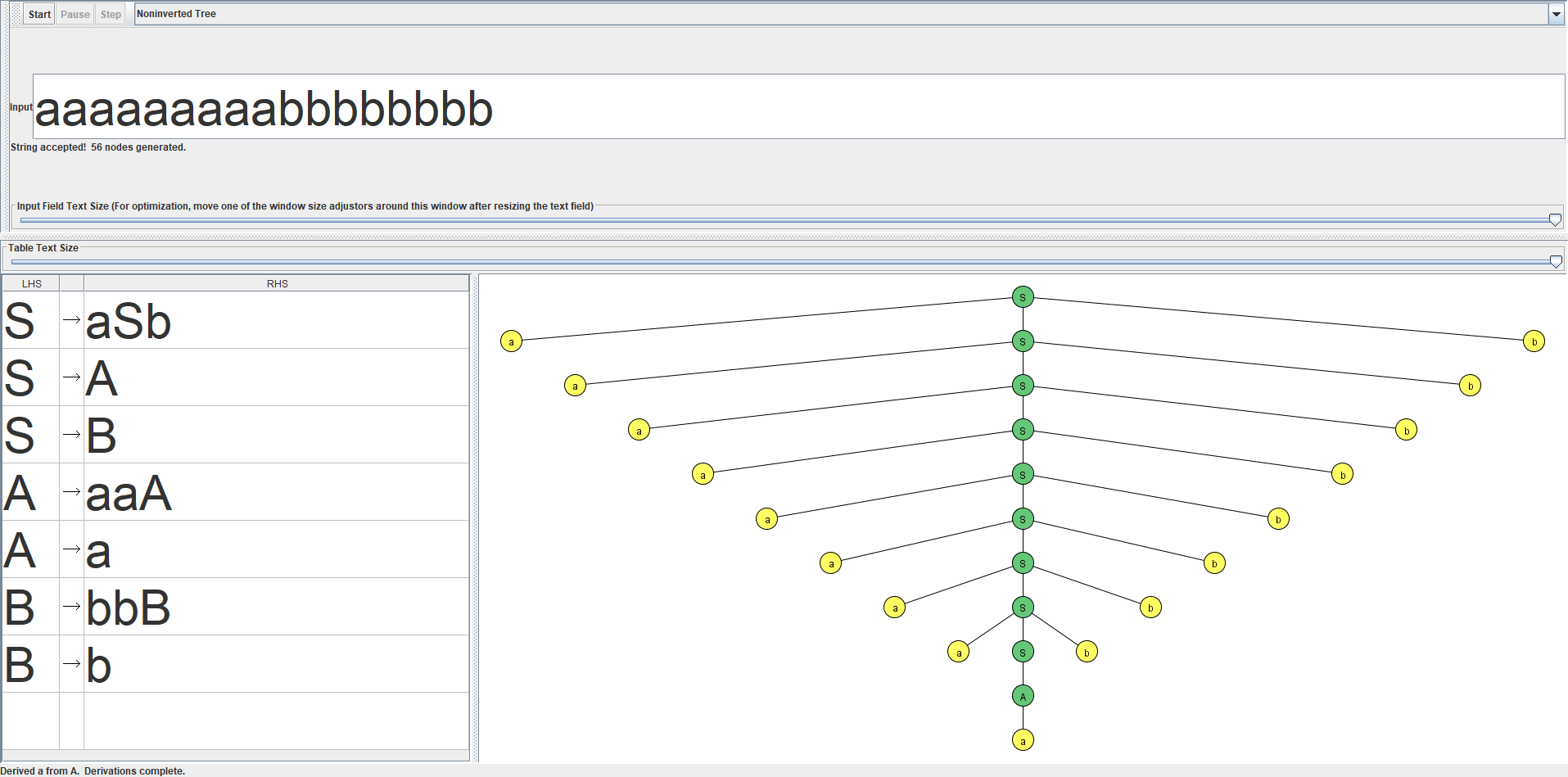
3.aaaaaaaabb not acceptad



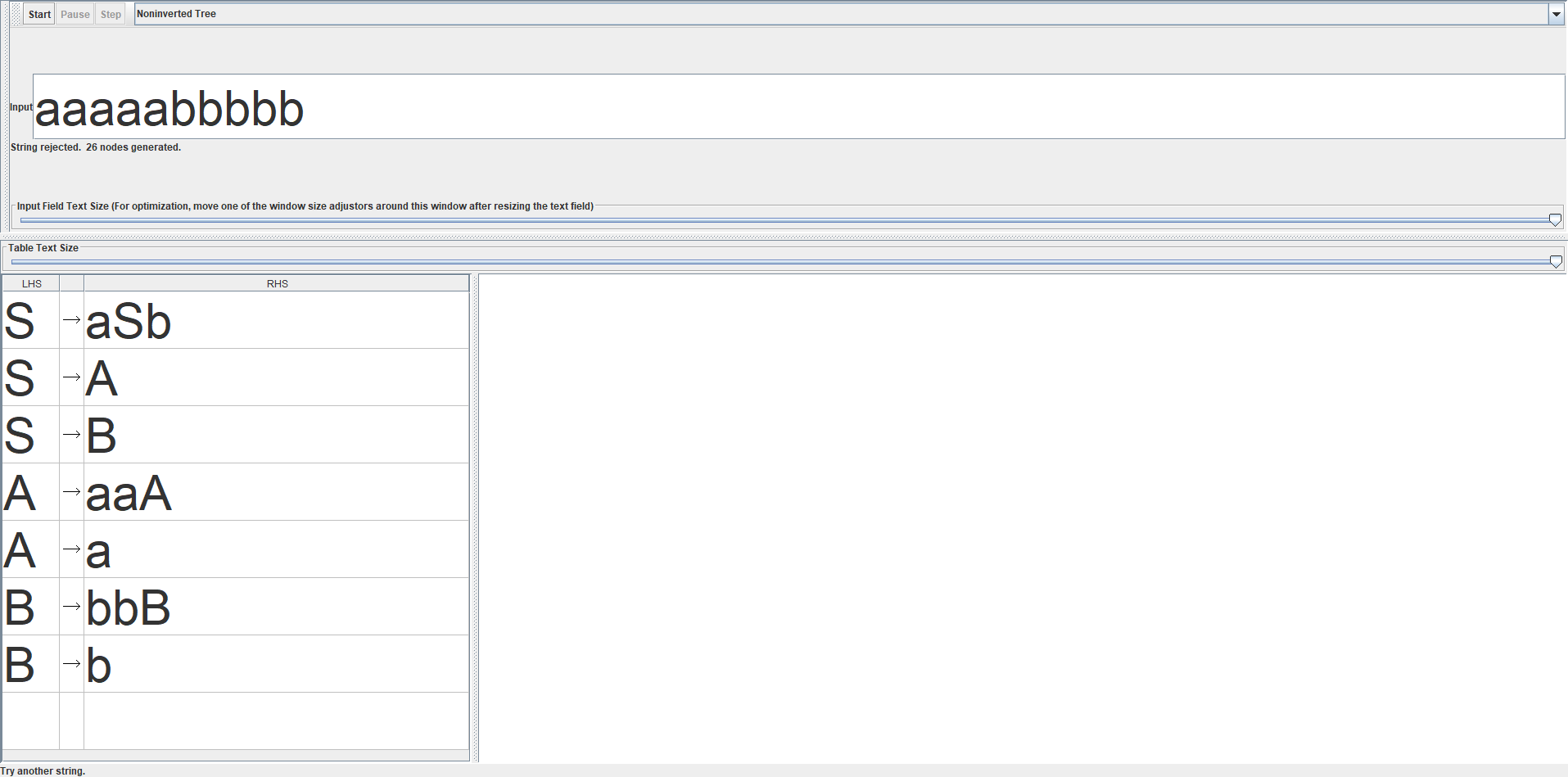
4.abbbb acceptad



5. aaaaaaaaabbbbbbbb acccepted



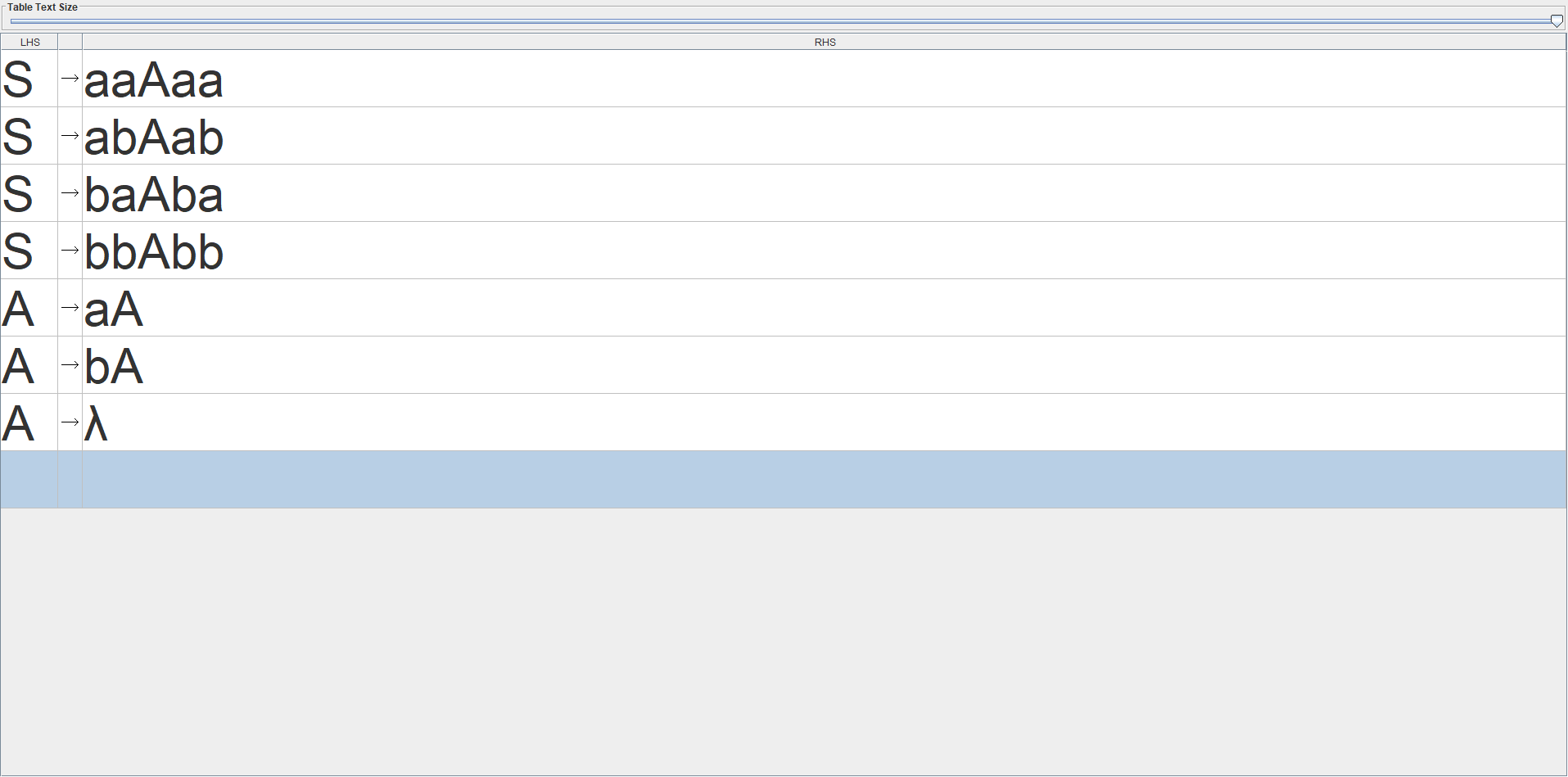
6. aaaaabbbbb not accepted



گرامر دوم :

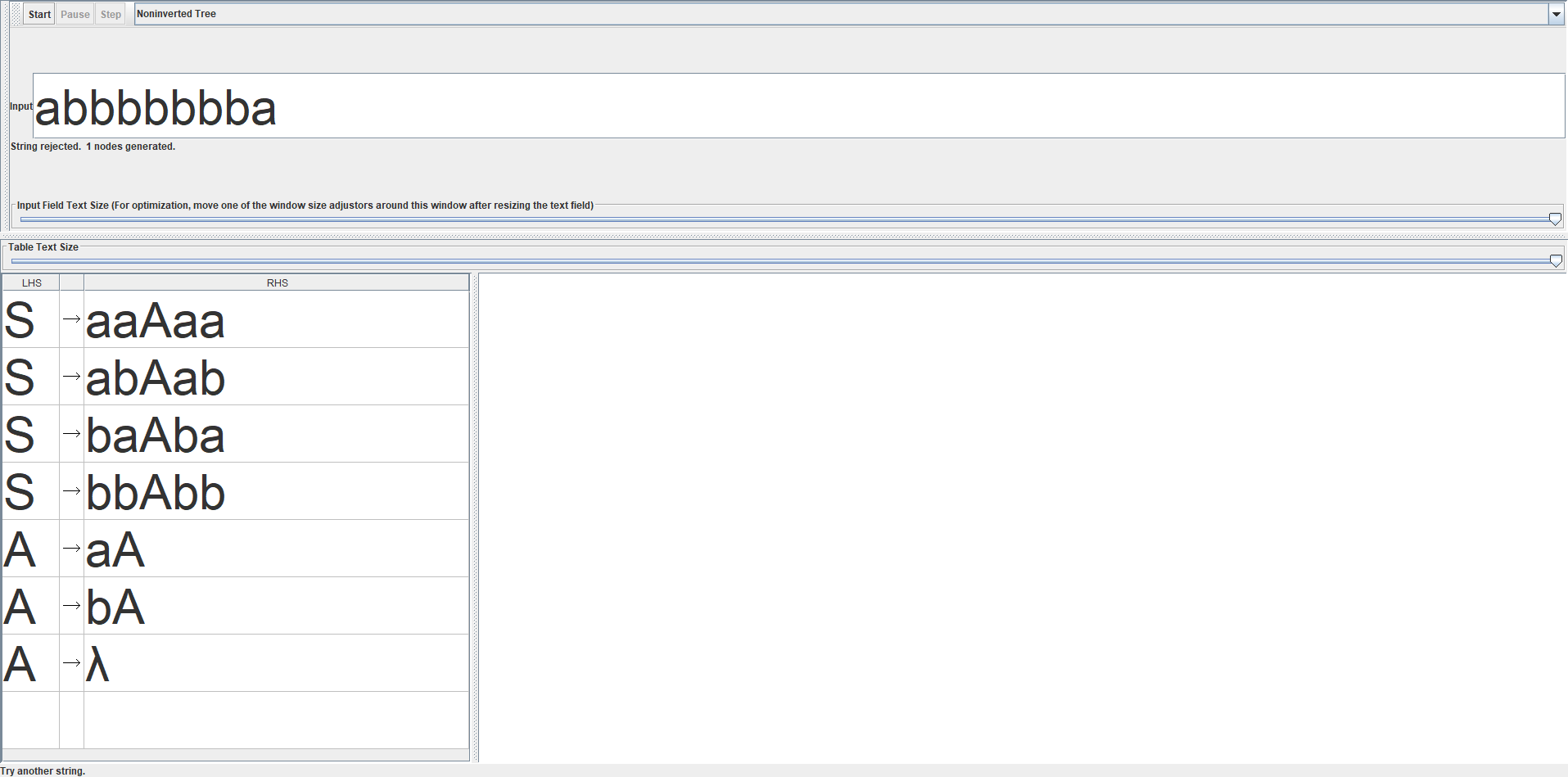
S->aaAaa|abAab|baAba|bbAbb

A->aA|bA|λ

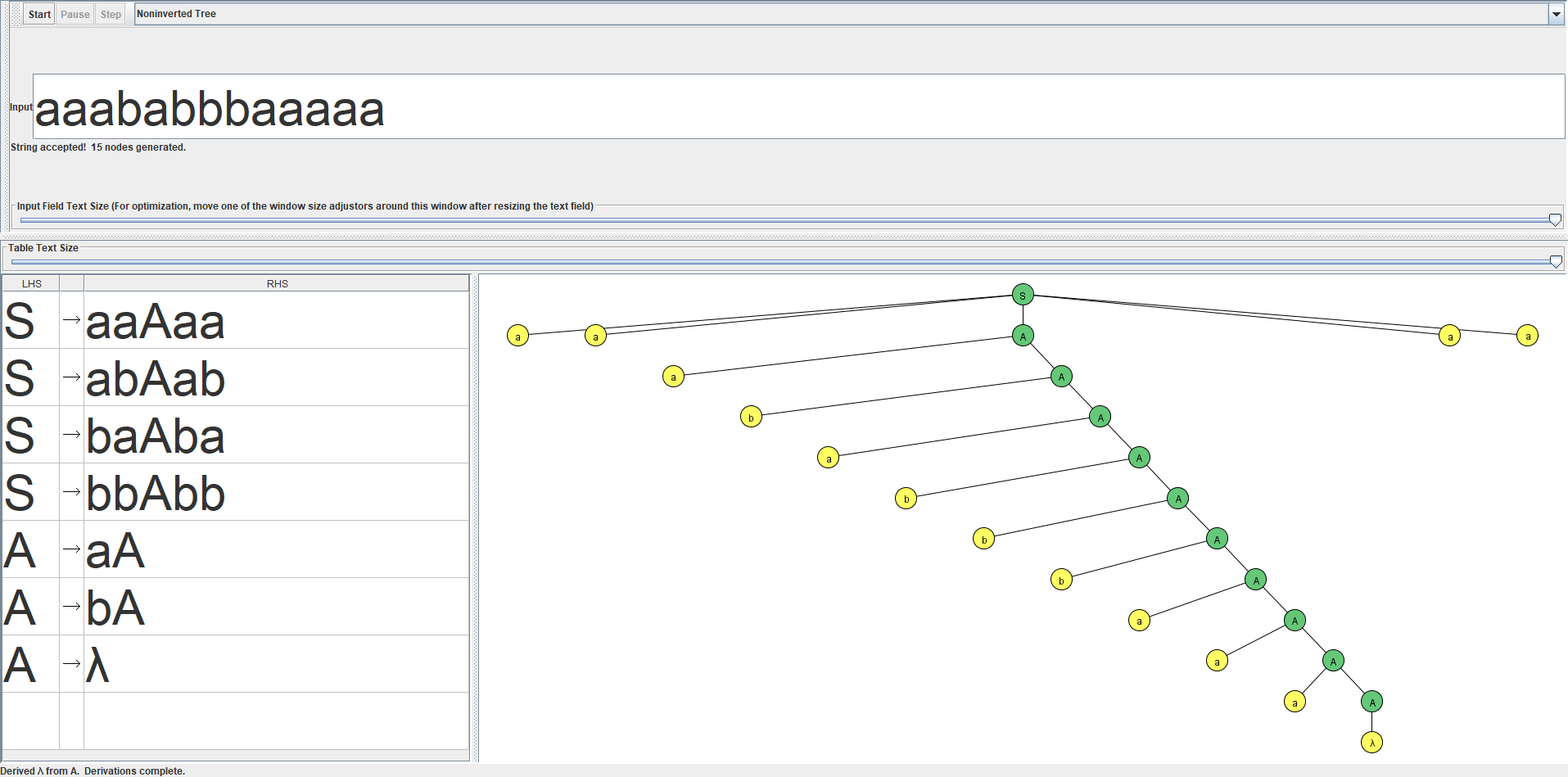


رشته های ورودی :

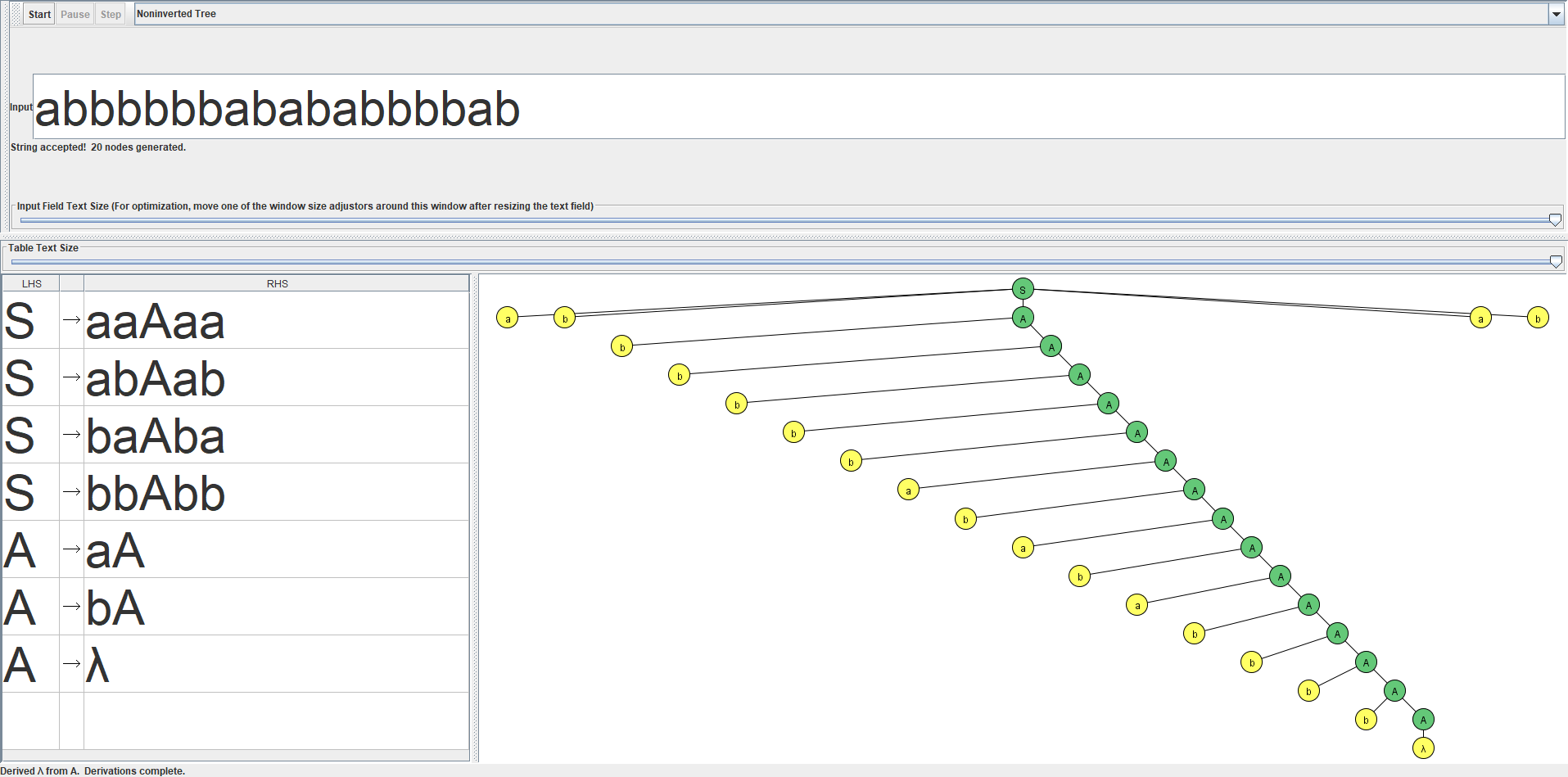
1. abbbbbbba not accepted



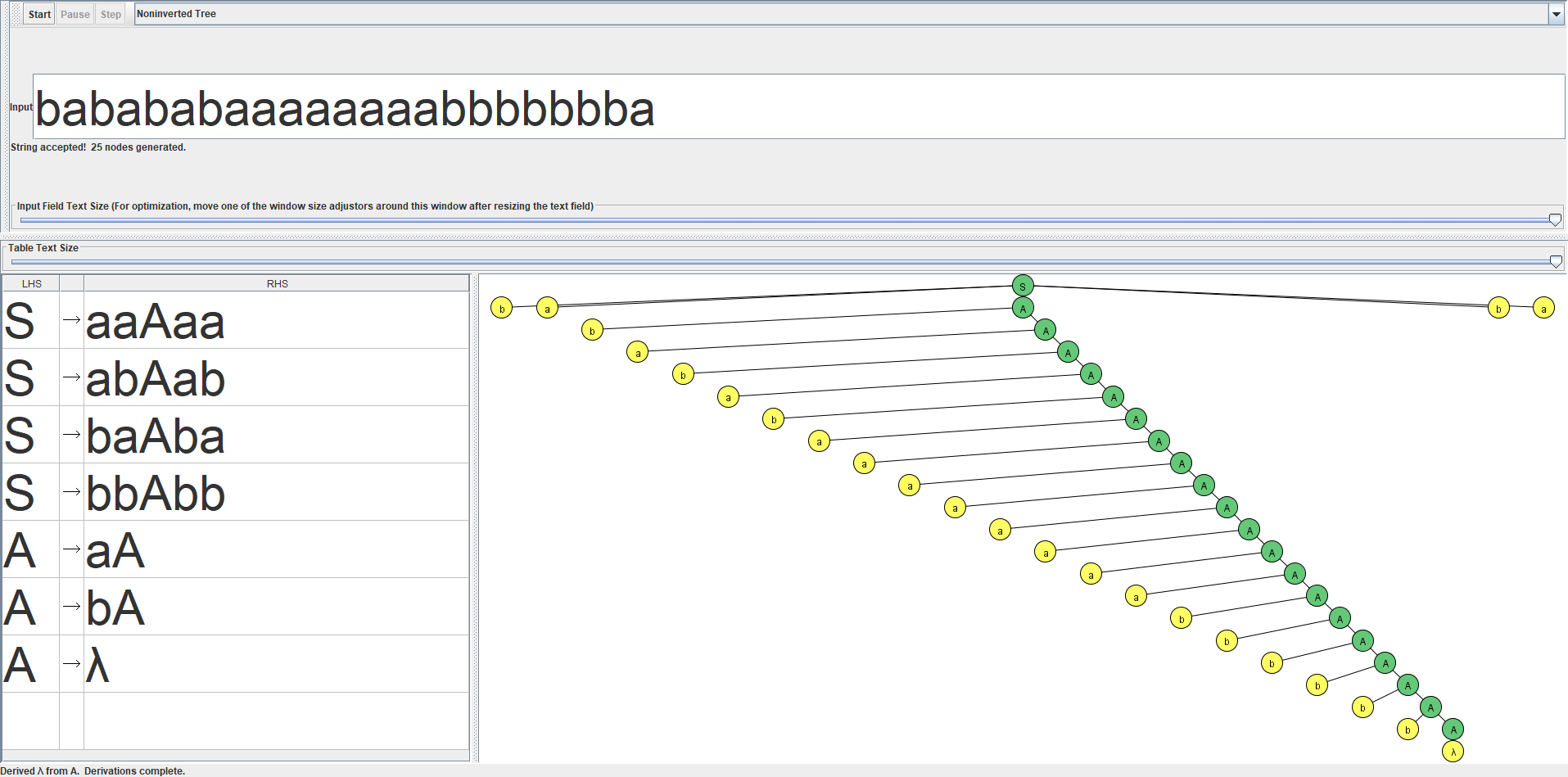
2. aaababbbaaaaa accepted



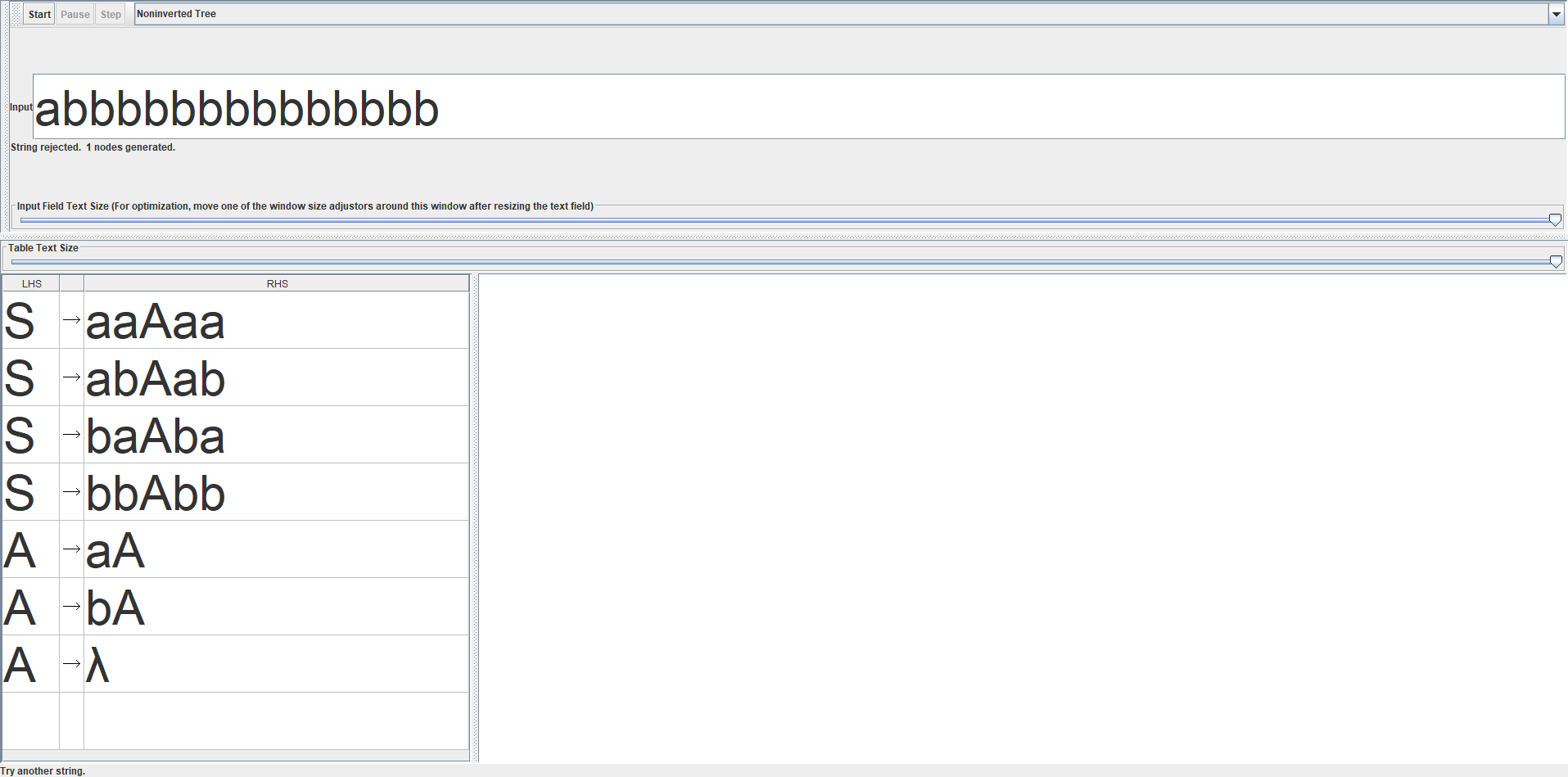
3.abbbbbbabababbbbab accepted



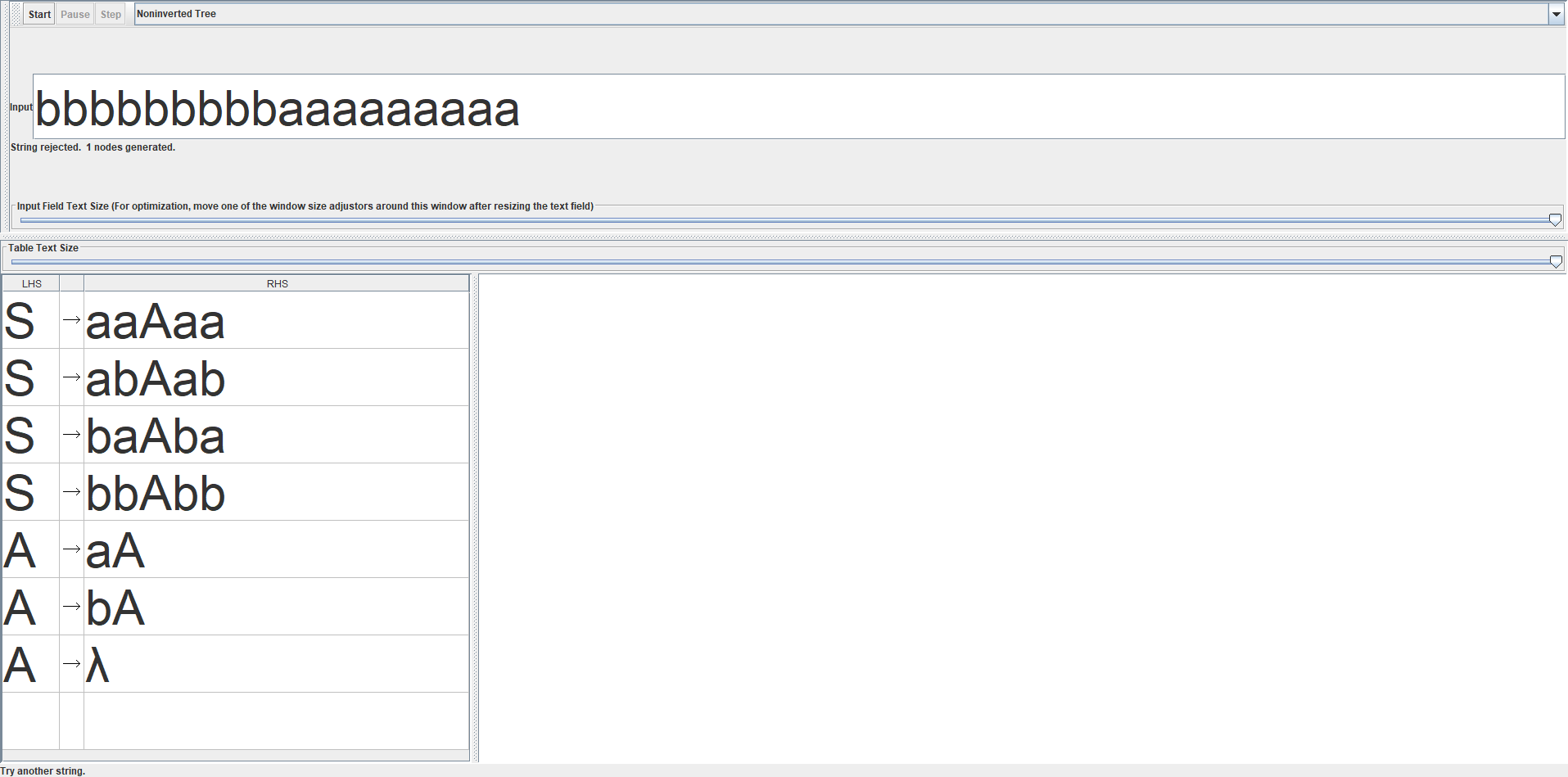
4.babababaaaaaaaabbbbbbba accepted



5.abbbbbbbbbbbbbb not accepted



6. bbbbbbbbbaaaaaaaaa not accepted



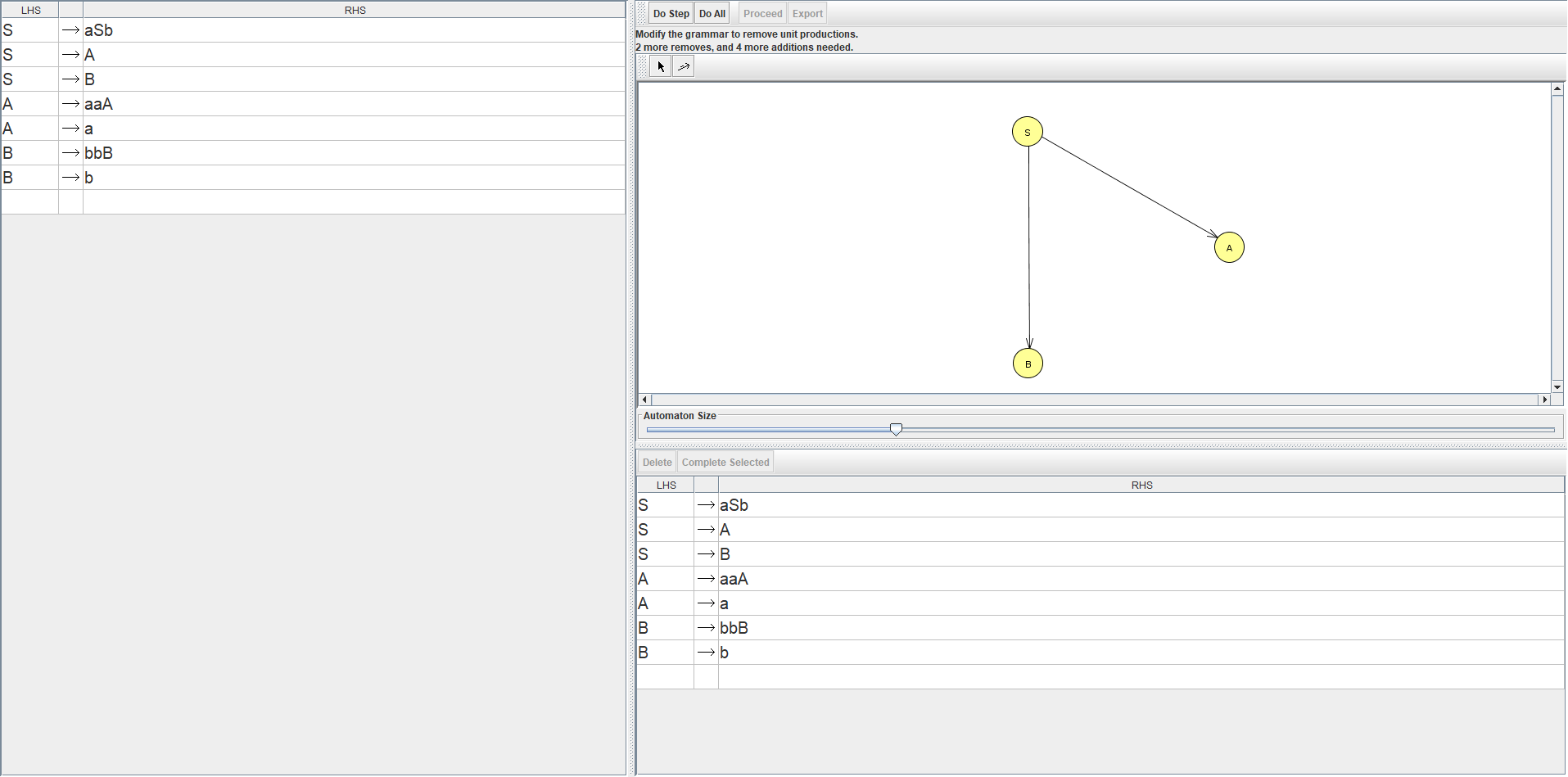
ب) گرامر اول :

حذف قانون لامبدا :

S->aSb|A|B

A->aaA|a

B->bbB|b

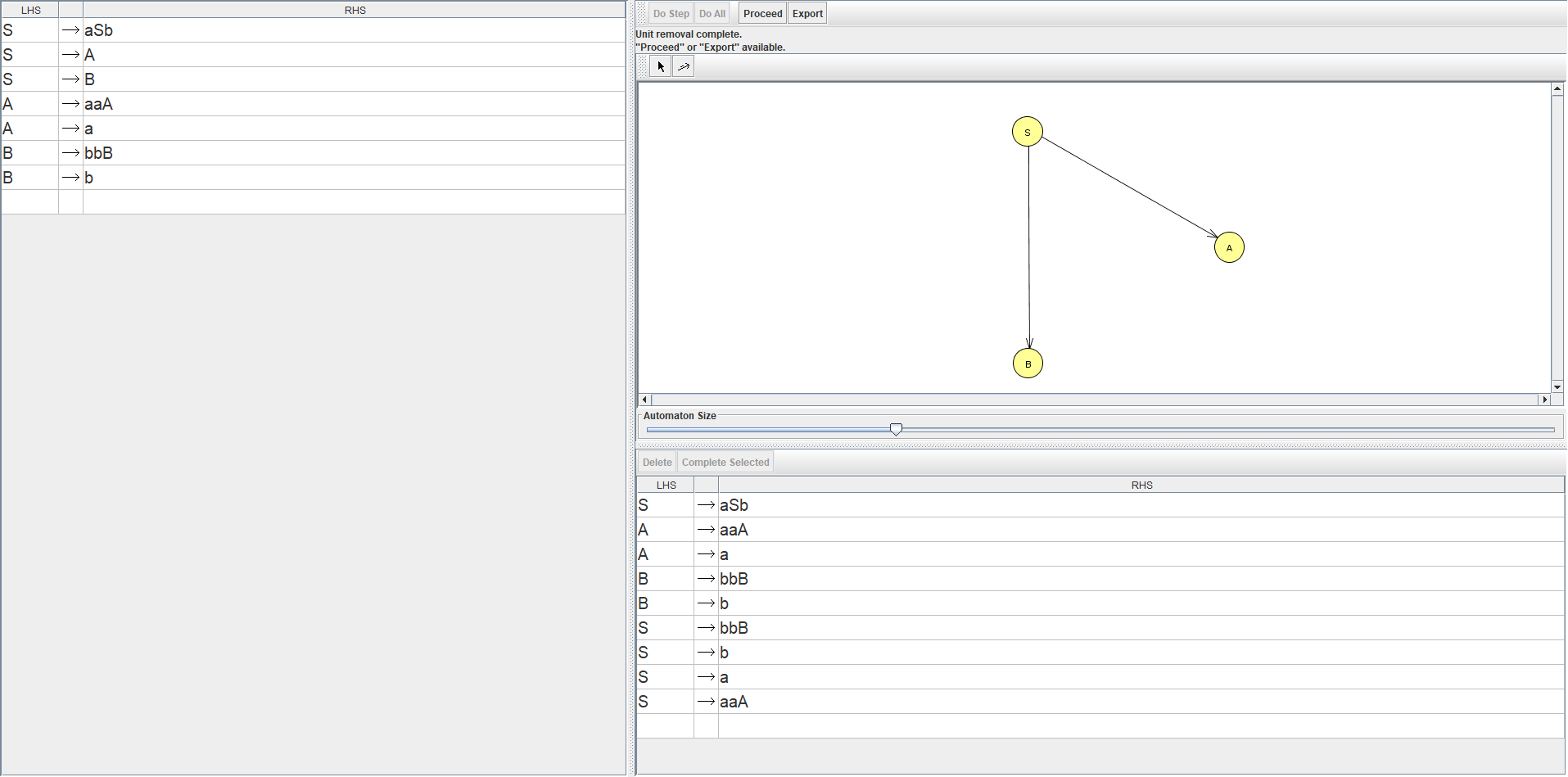


حذف قانون واحد :

S->aSb|aaA|bbB

A->aaA|a

B->bbB|b



حذف متغییربلااستفاده : متغییر بااستفاده ای وجود ندارد .

S->aSb|aaA|bbB

A->aaA|a

B->bbB|b

تبدیل به فرم نرمال چامسکی :

S->A(as)B(b)|A(aa)A|B(bb)B

A->A(aa)A|a

B->B(bb)B|b

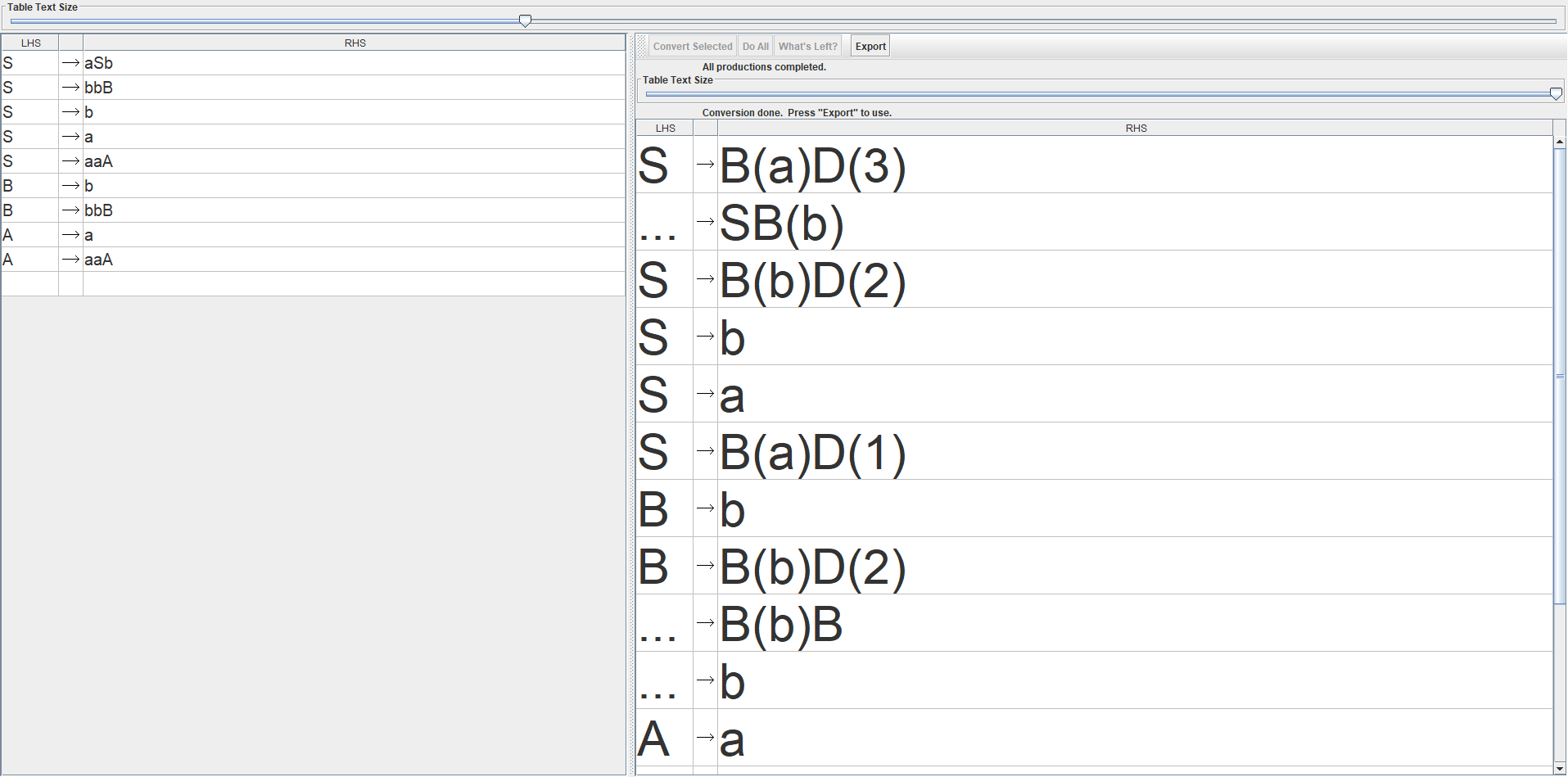
A(as)->A(a)S

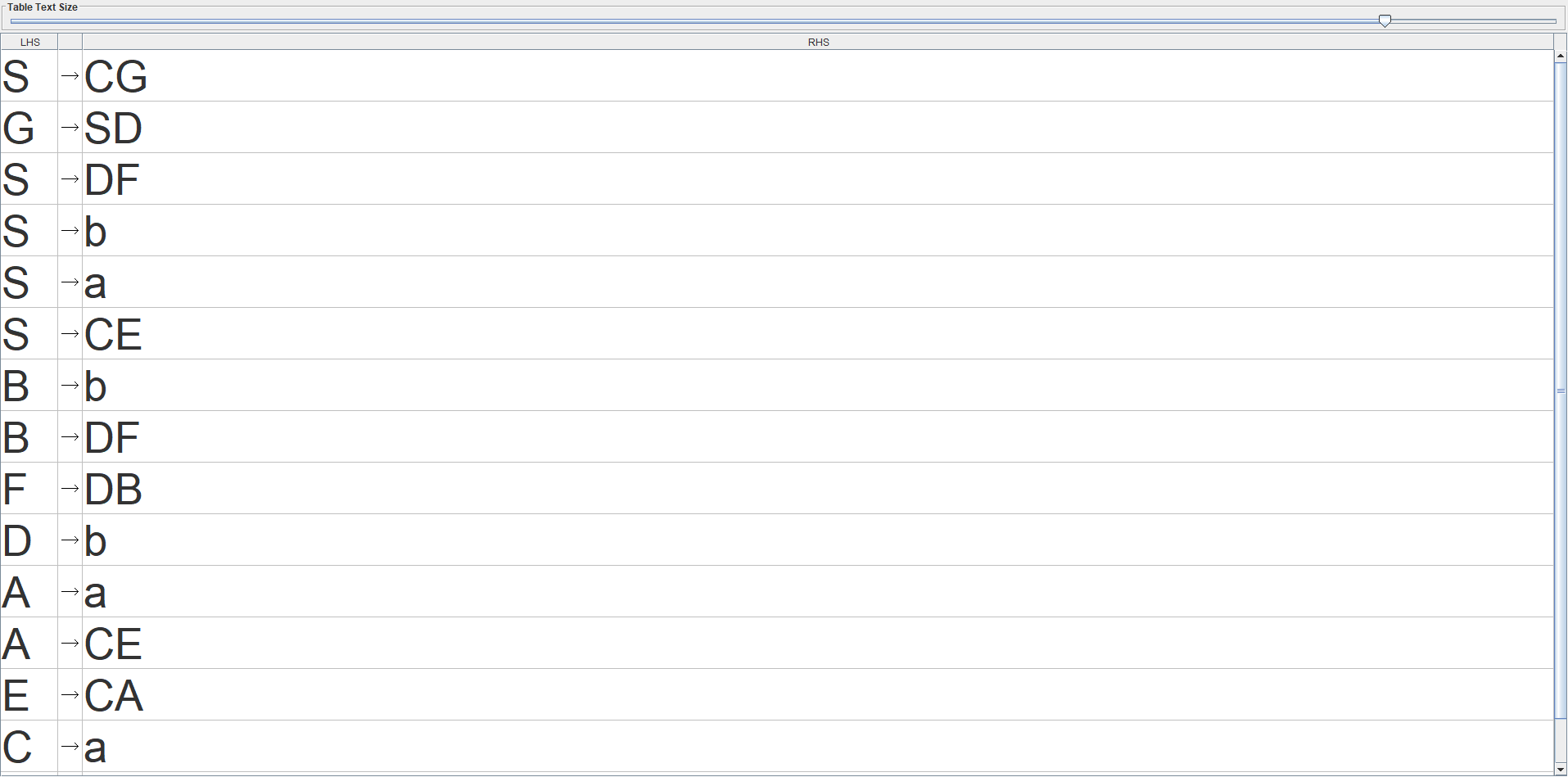
A(aa)->A(a)A(a)

B(bb)->B(b)B(b)

A(a)->a

B(b)->b



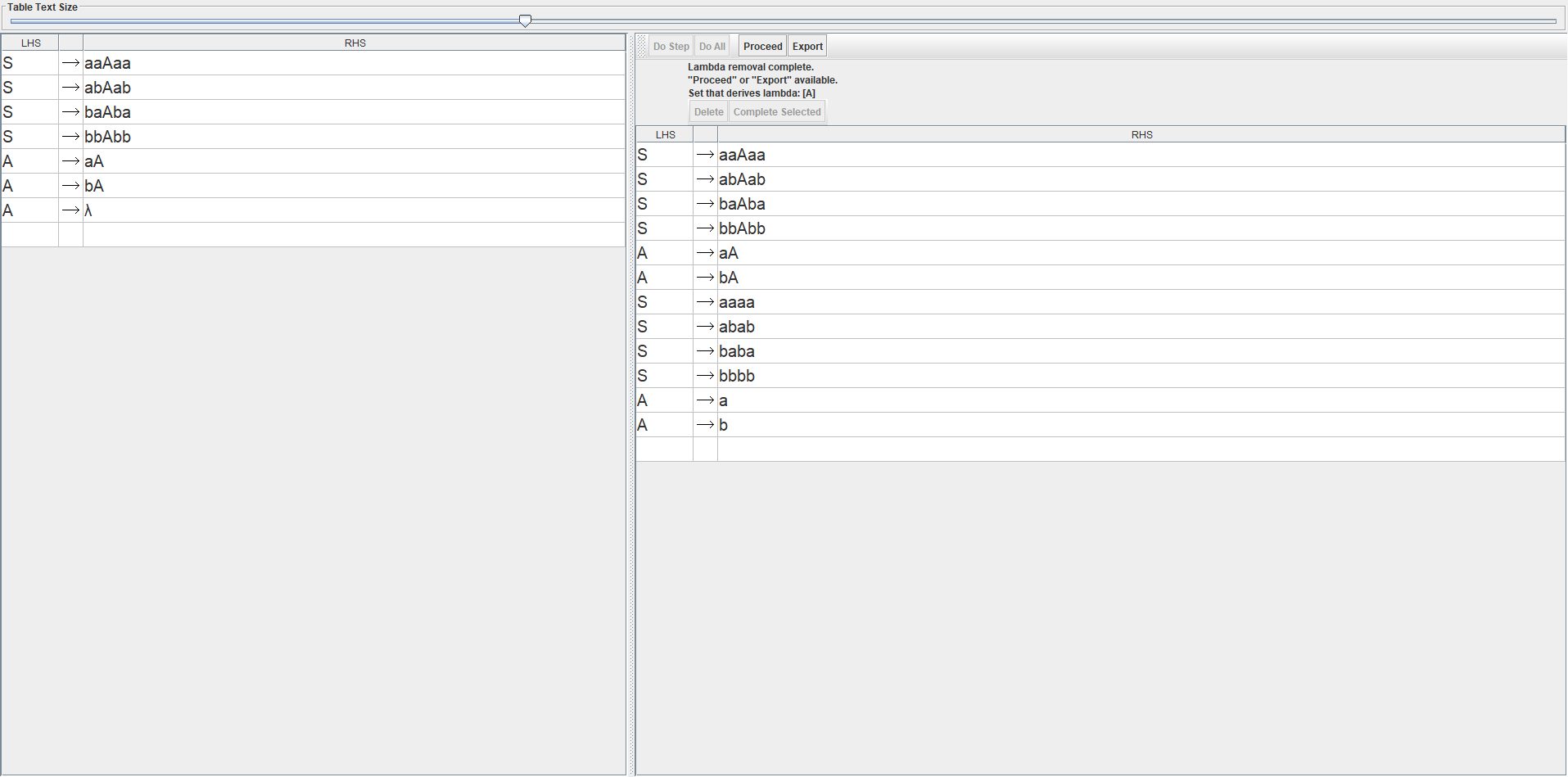


گرامر دوم :

حذف قانون لامبدا :

S->aaAaa|abAab|baAba|bbAbb|aaaa|abab|baba|bbbb

A->aA|bA|a|b



حذف قانون واحد : قانون واحد وجود ندارد .

S->aaAaa|abAab|baAba|bbAbb|aaaa|abab|baba|bbbb

A->aA|bA|a|b

حذف متغییر بلا استفاده : متغییر بلااستفاده وجود ندارد .

S->aaAaa|abAab|baAba|bbAbb|aaaa|abab|baba|bbbb

A->aA|bA|a|b

تبدیل به فرم نرمال چامسکی :

S->A(aaA)A(aa)|A(abA)A(ab)|A(baA)A(ba)|A(bbA)A(bb)|A(aa)A(aa)|A(ab)A(ab)|A(ba)A(ba)

S->A(bb)A(bb)

A->A(a)A|A(b)A|a|b

A(aaA)->A(aa)A

A(abA)->A(ab)A

A(baA)->A(ba)A

A(bbA)->A(bb)A

A(aa)->A(a)A(a)

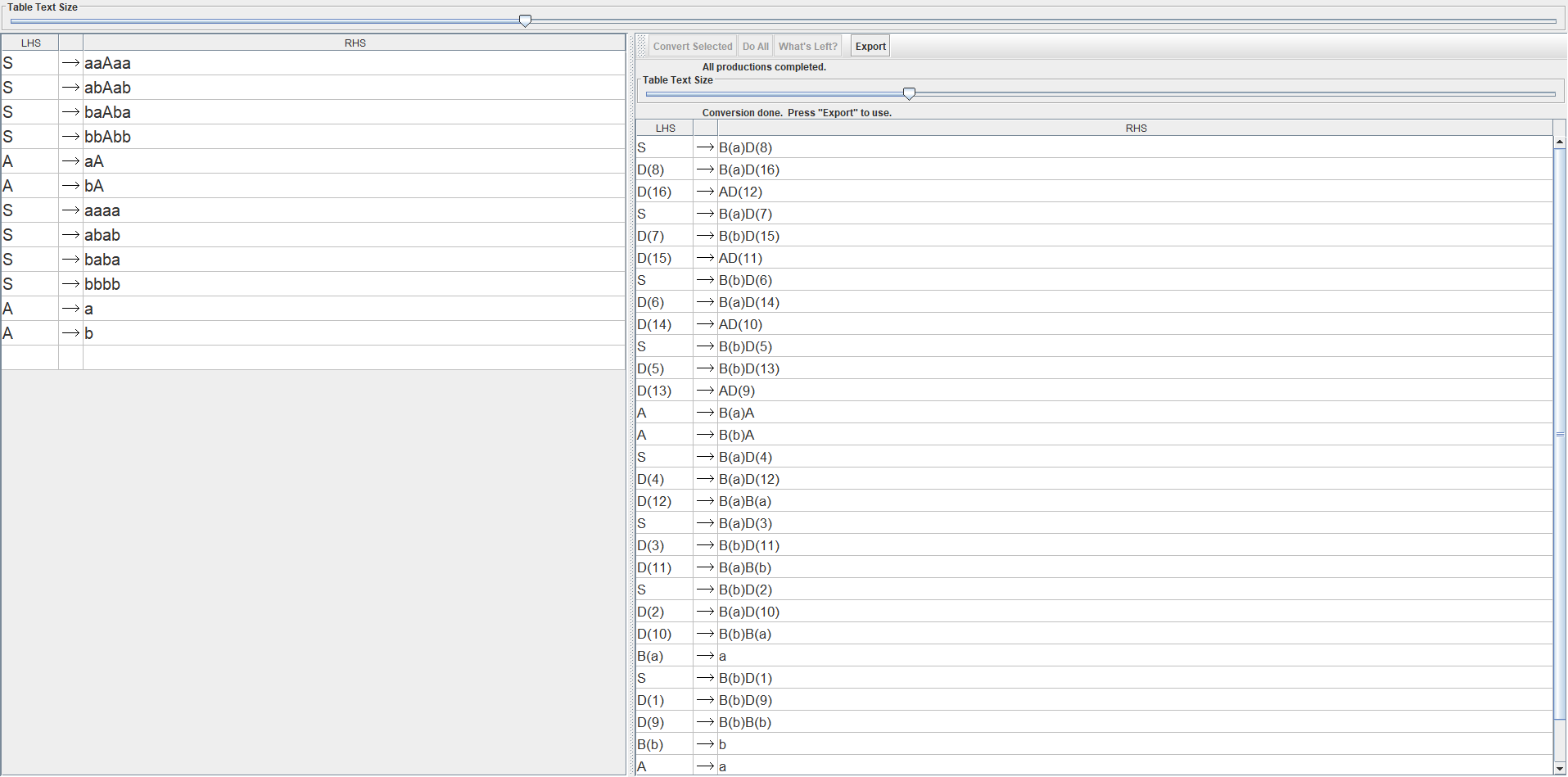
A(ab)->A(a)A(b)

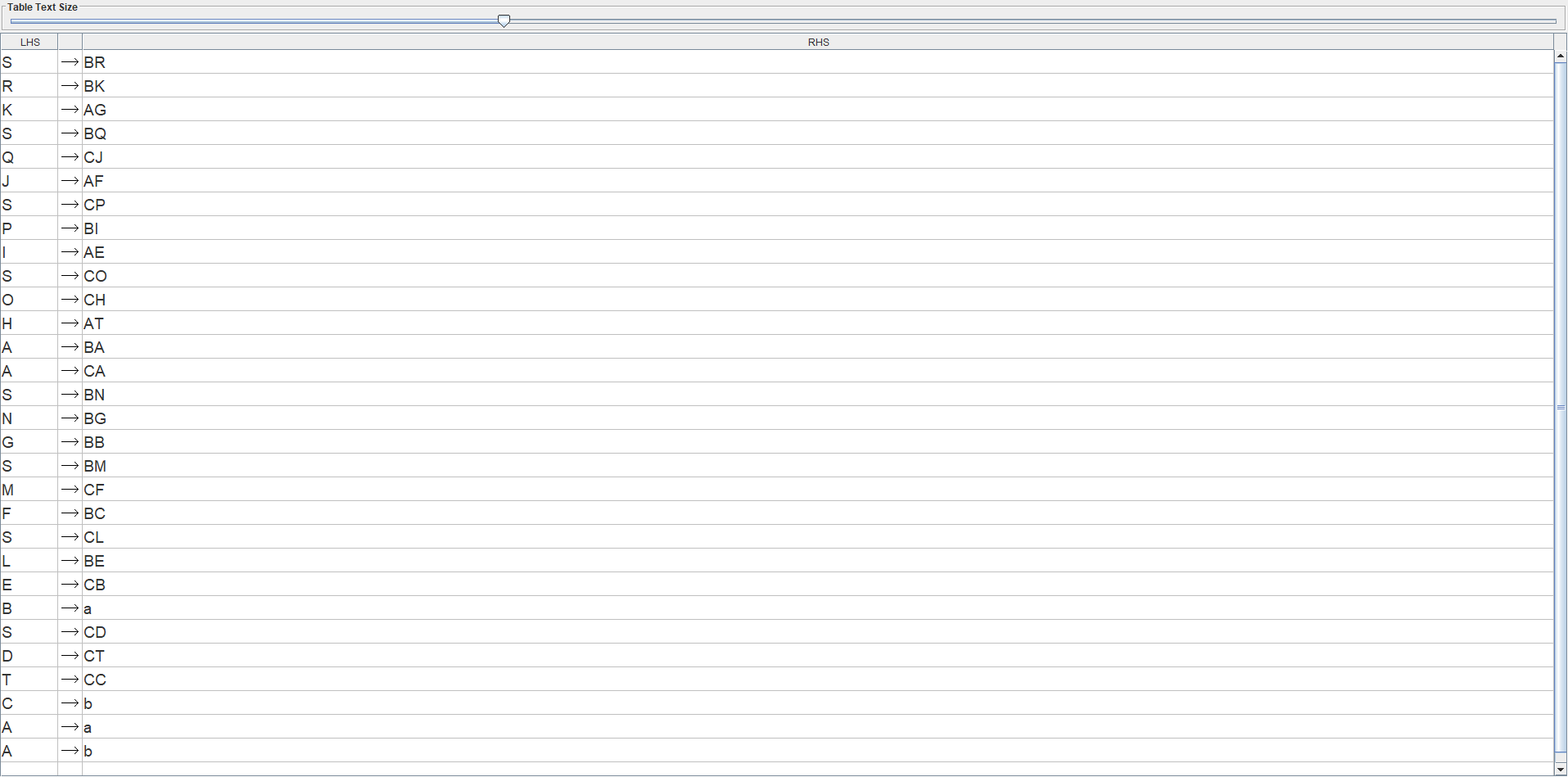
A(ba)->A(b)A(a)

A(bb)->A(b)A(b)

A(a)->a

A(b)->b

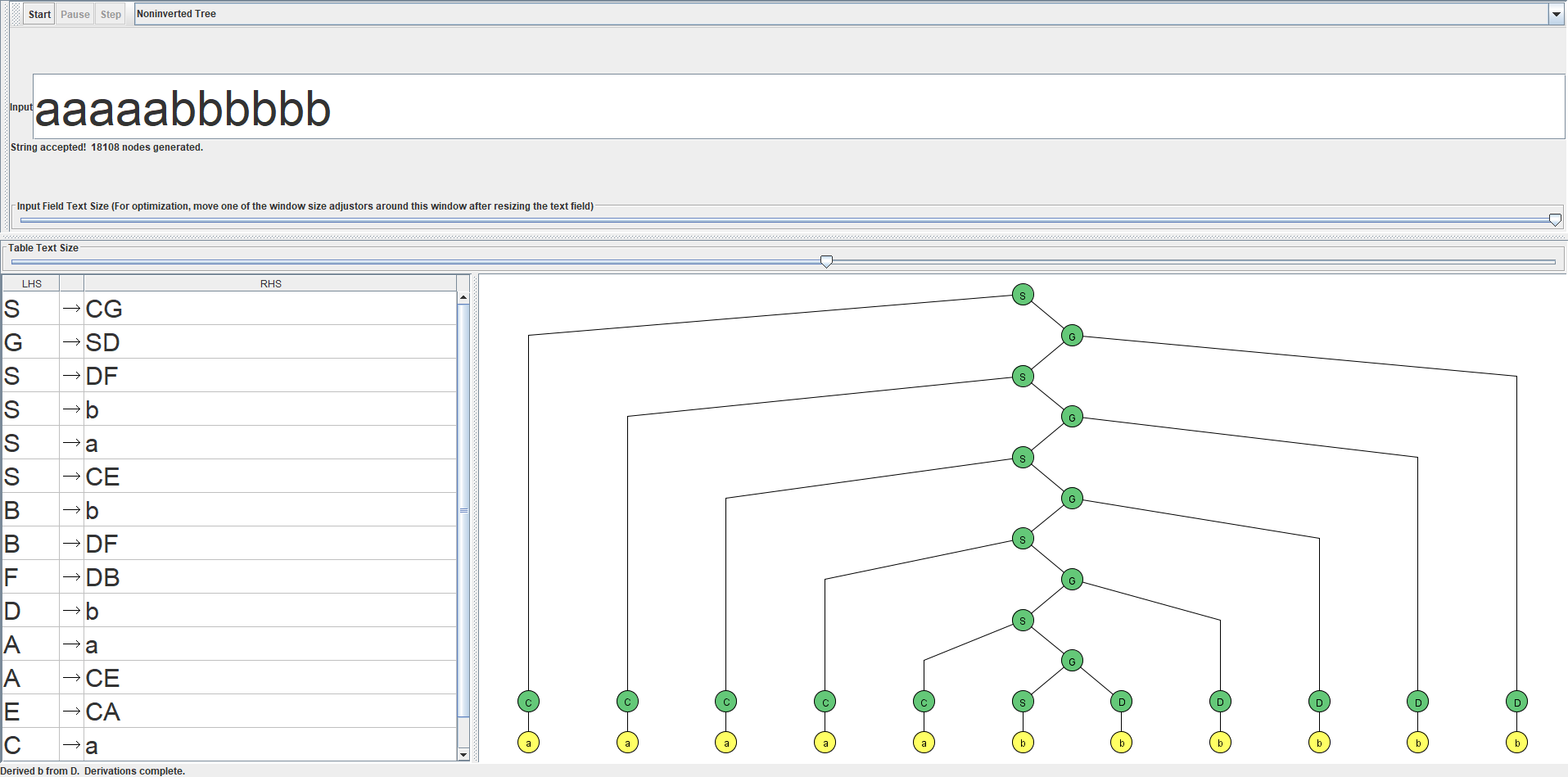




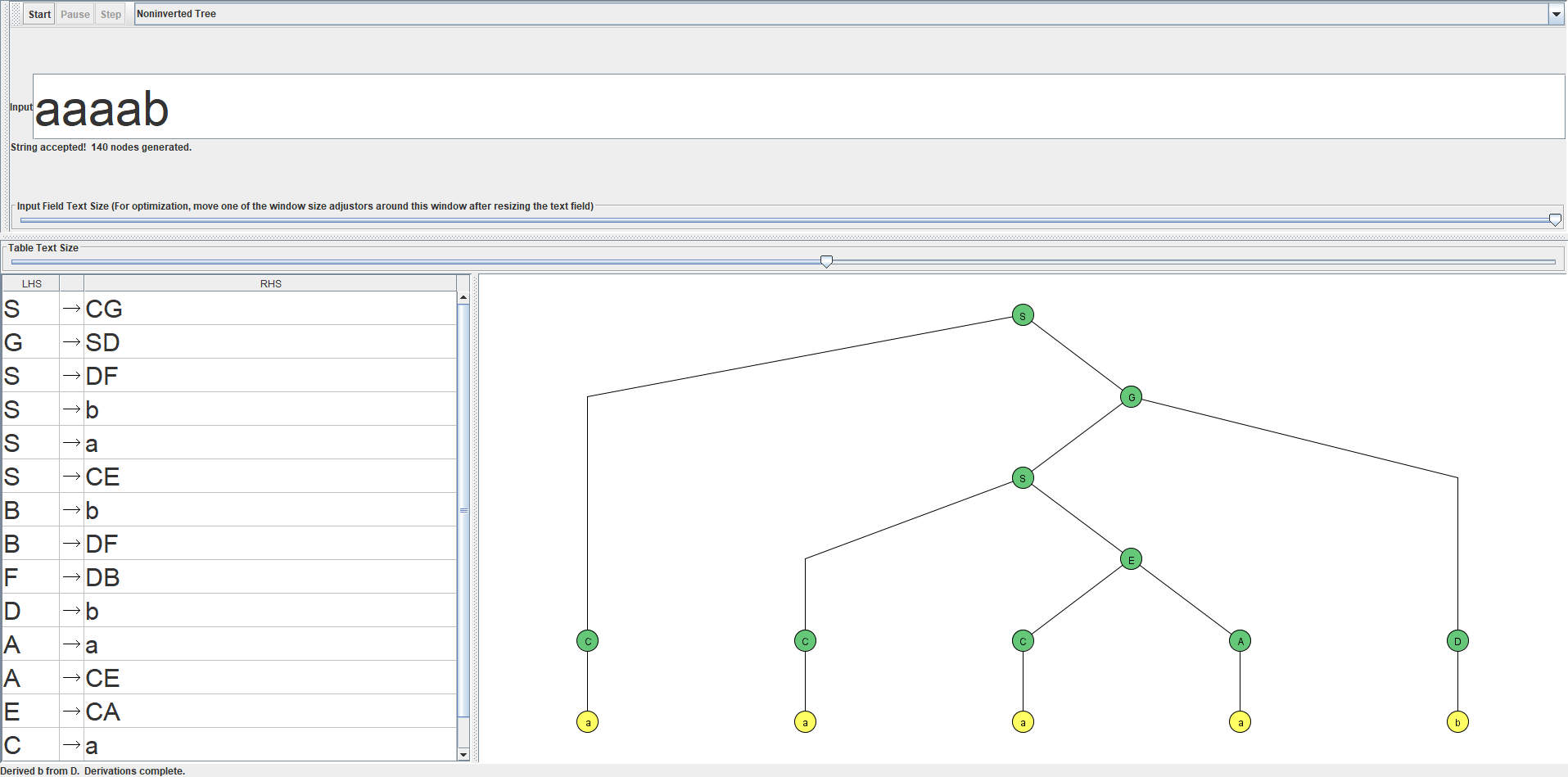
ج) گرامر اول :

رشته های ورودی :

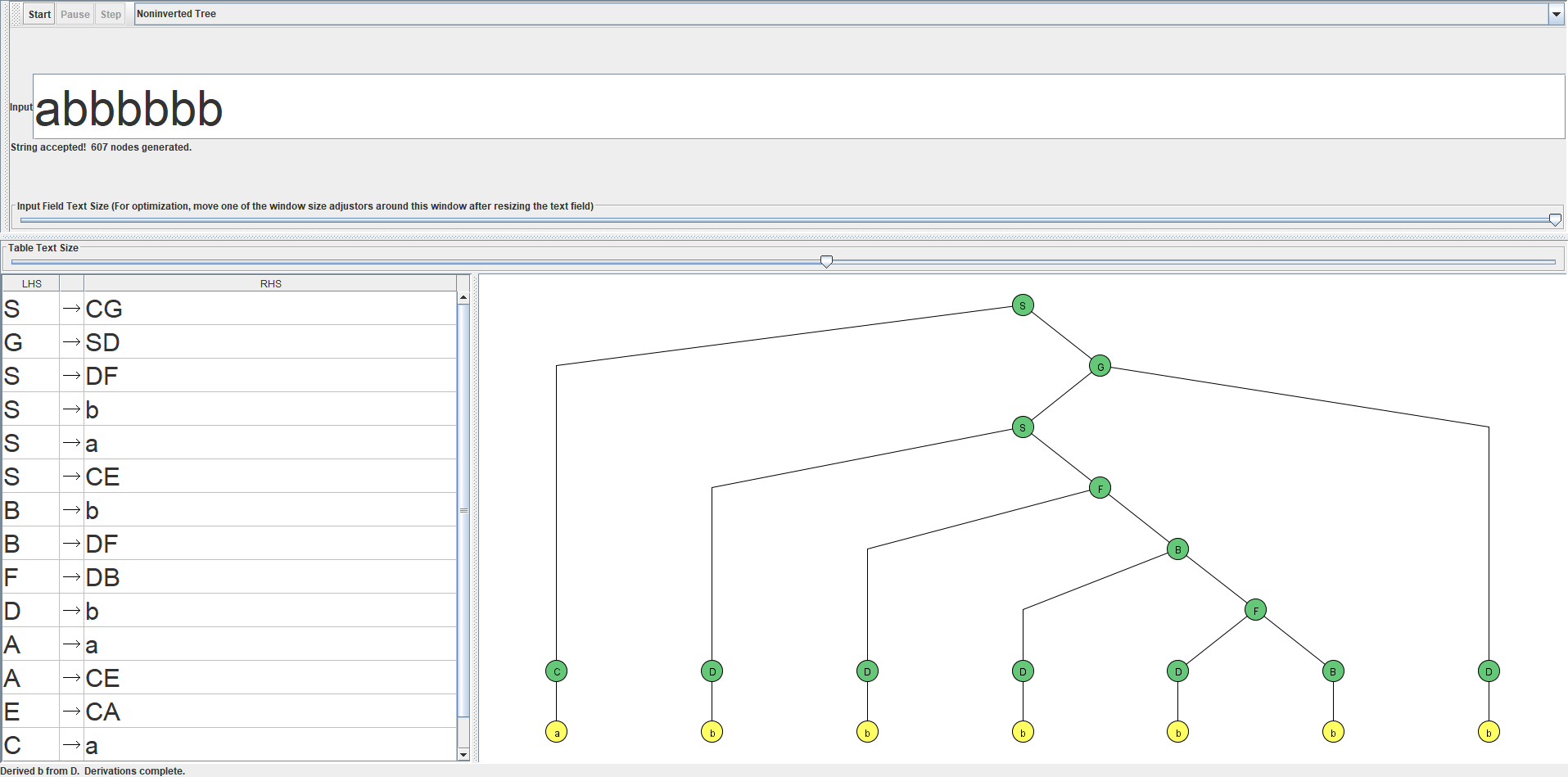
1.aaaaabbbbbb accepted



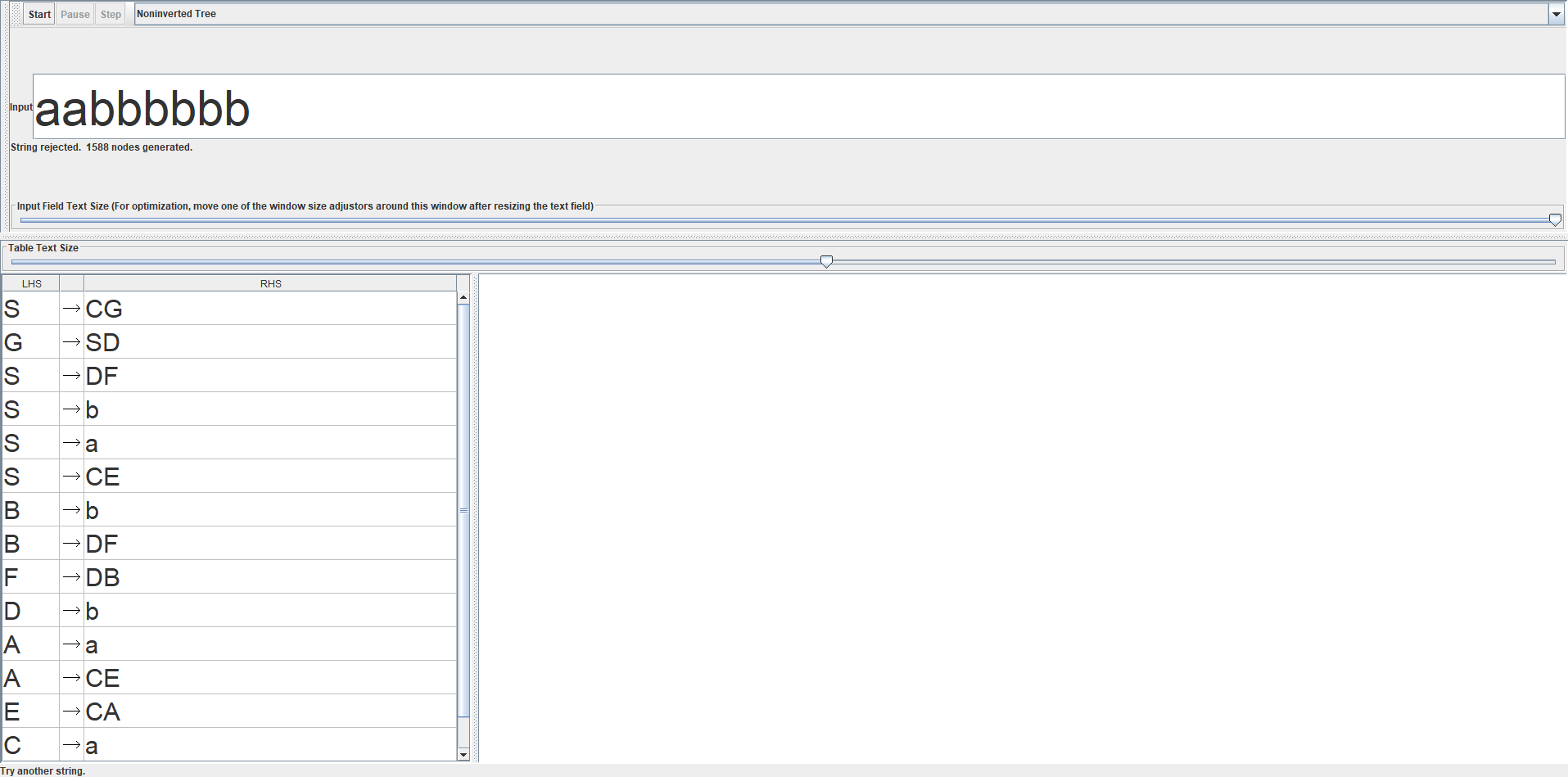
2. aaaab accepted



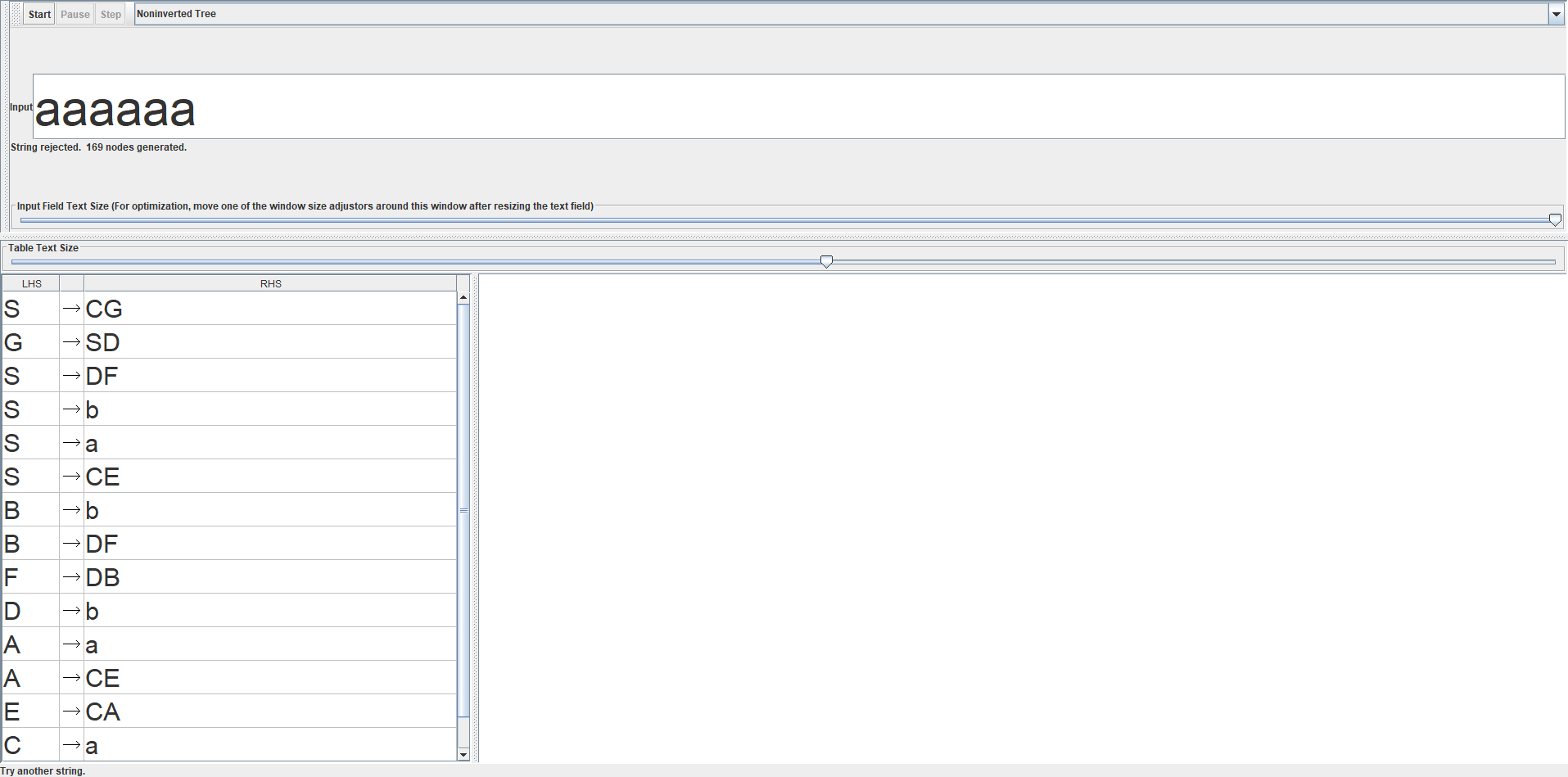
3.abbbbbb accepted



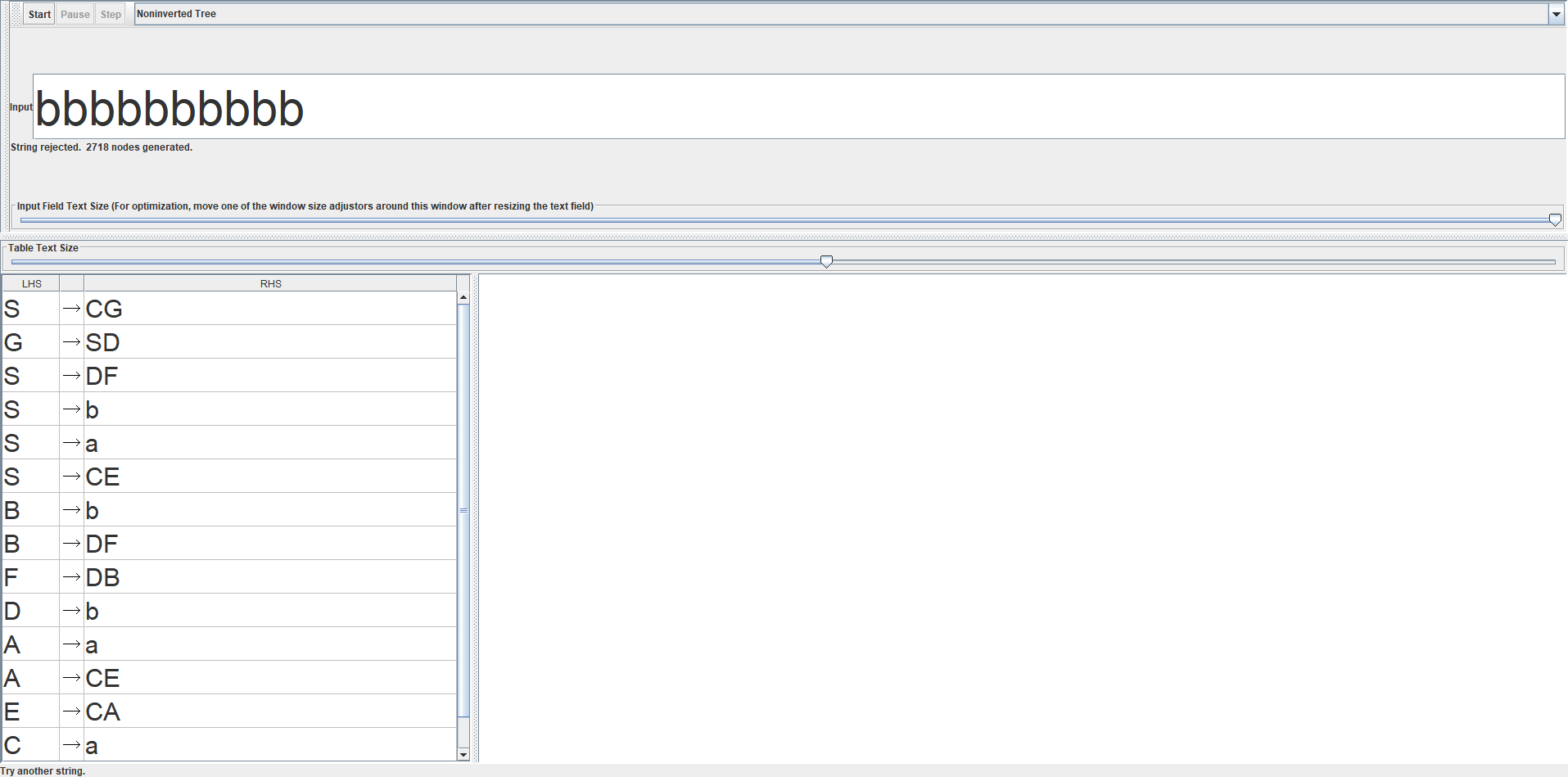
4. aabbbbbb not accepted



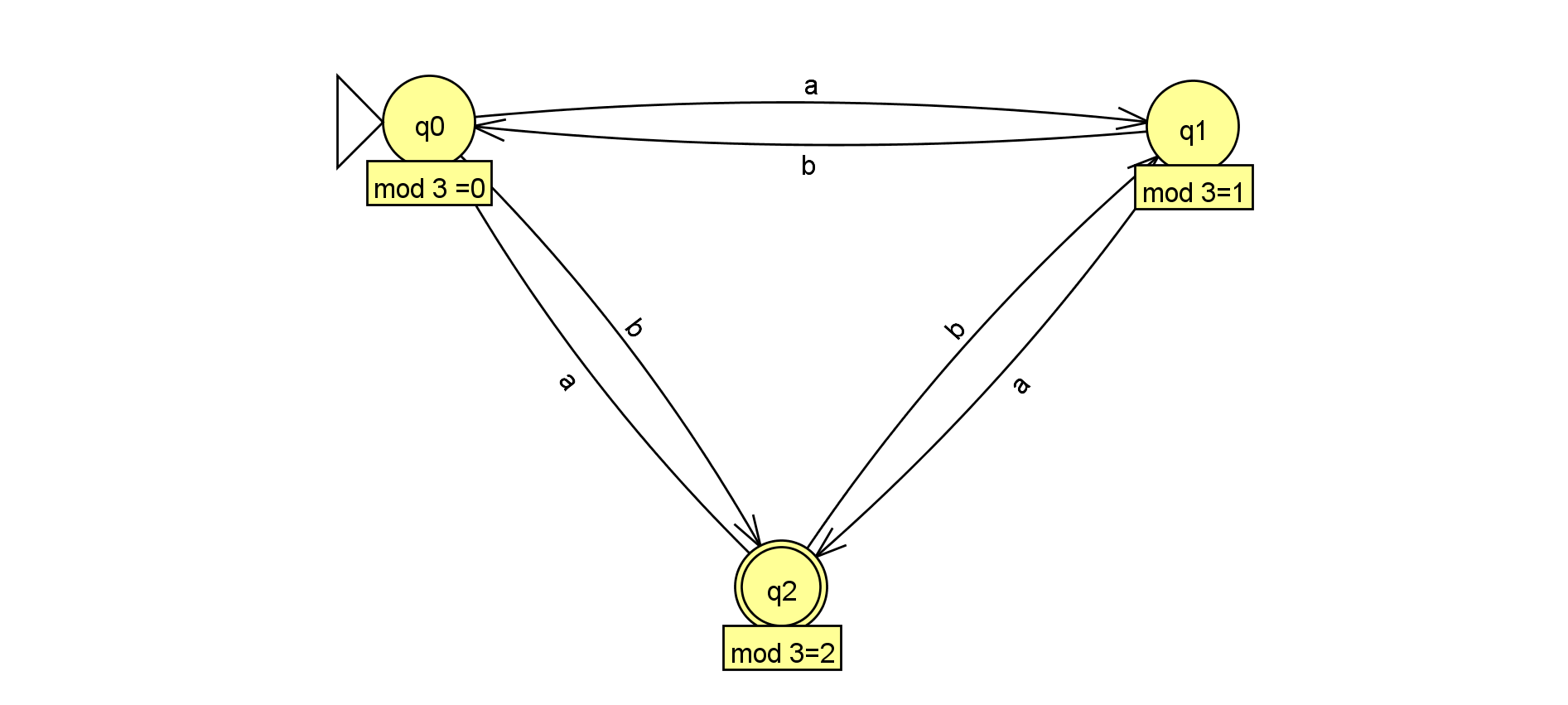
5. aaaaaa not accepted



6. bbbbbbbbbb

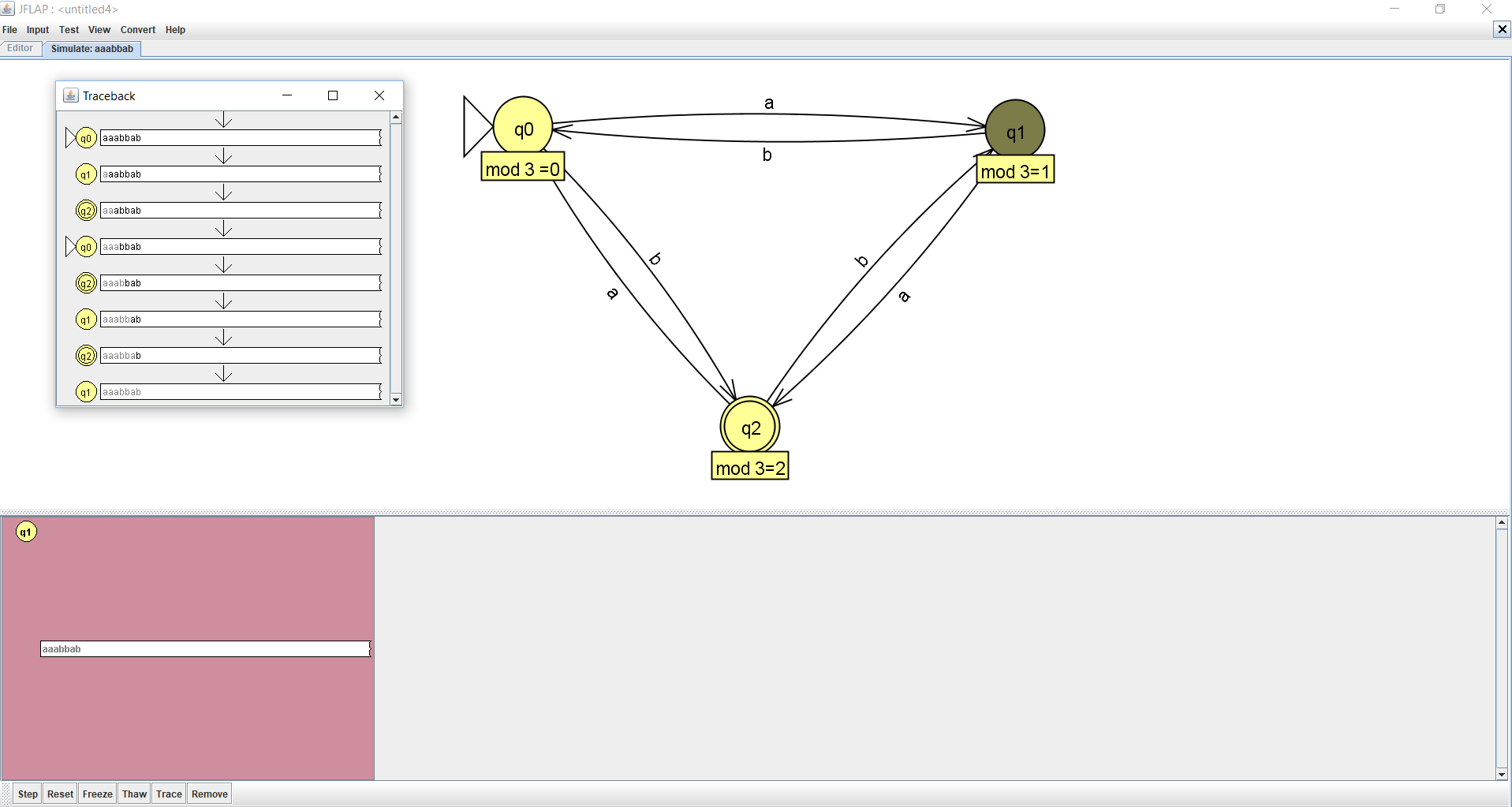


1. DFA زبان :

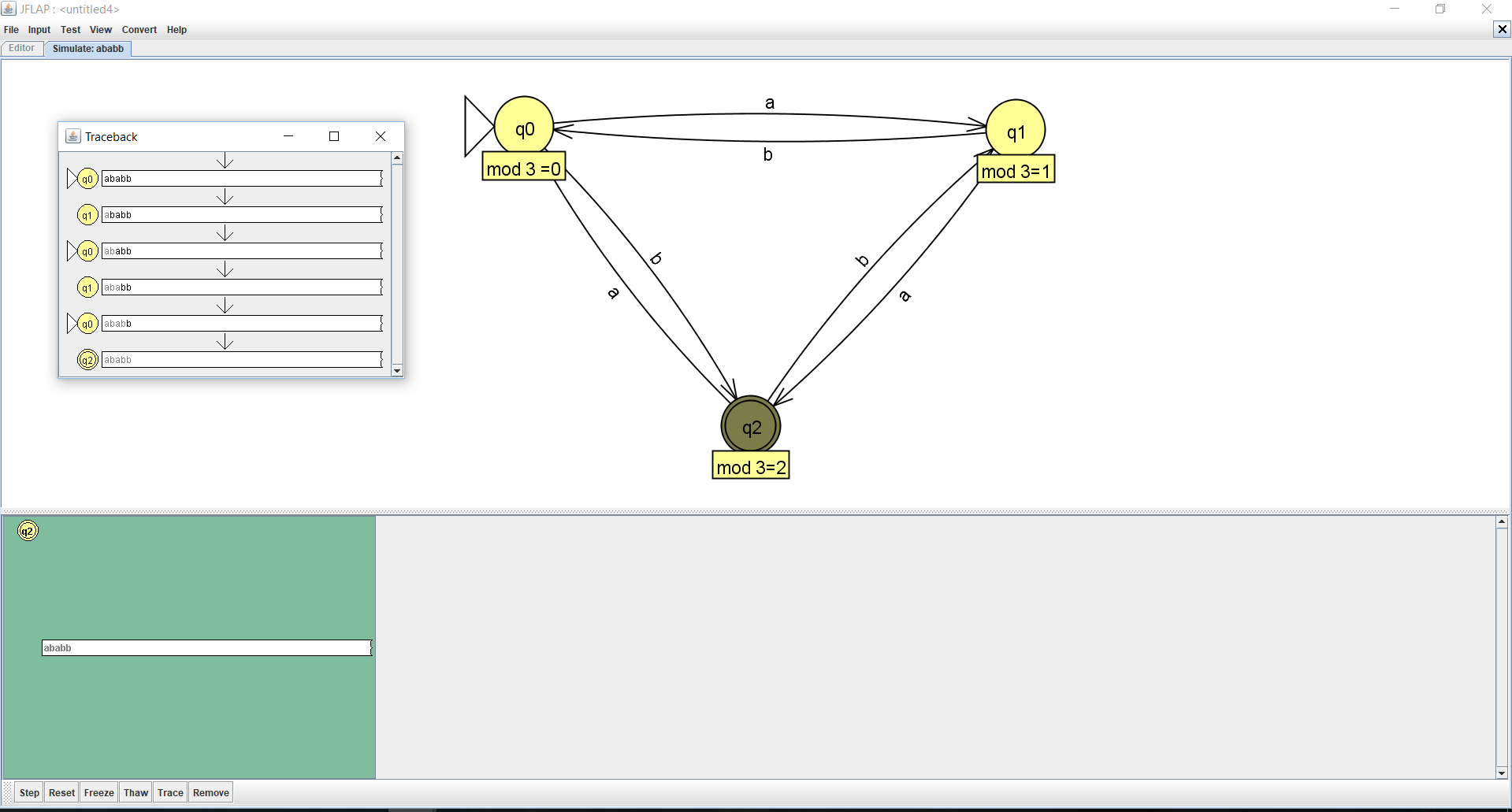


رشته های ورودی :

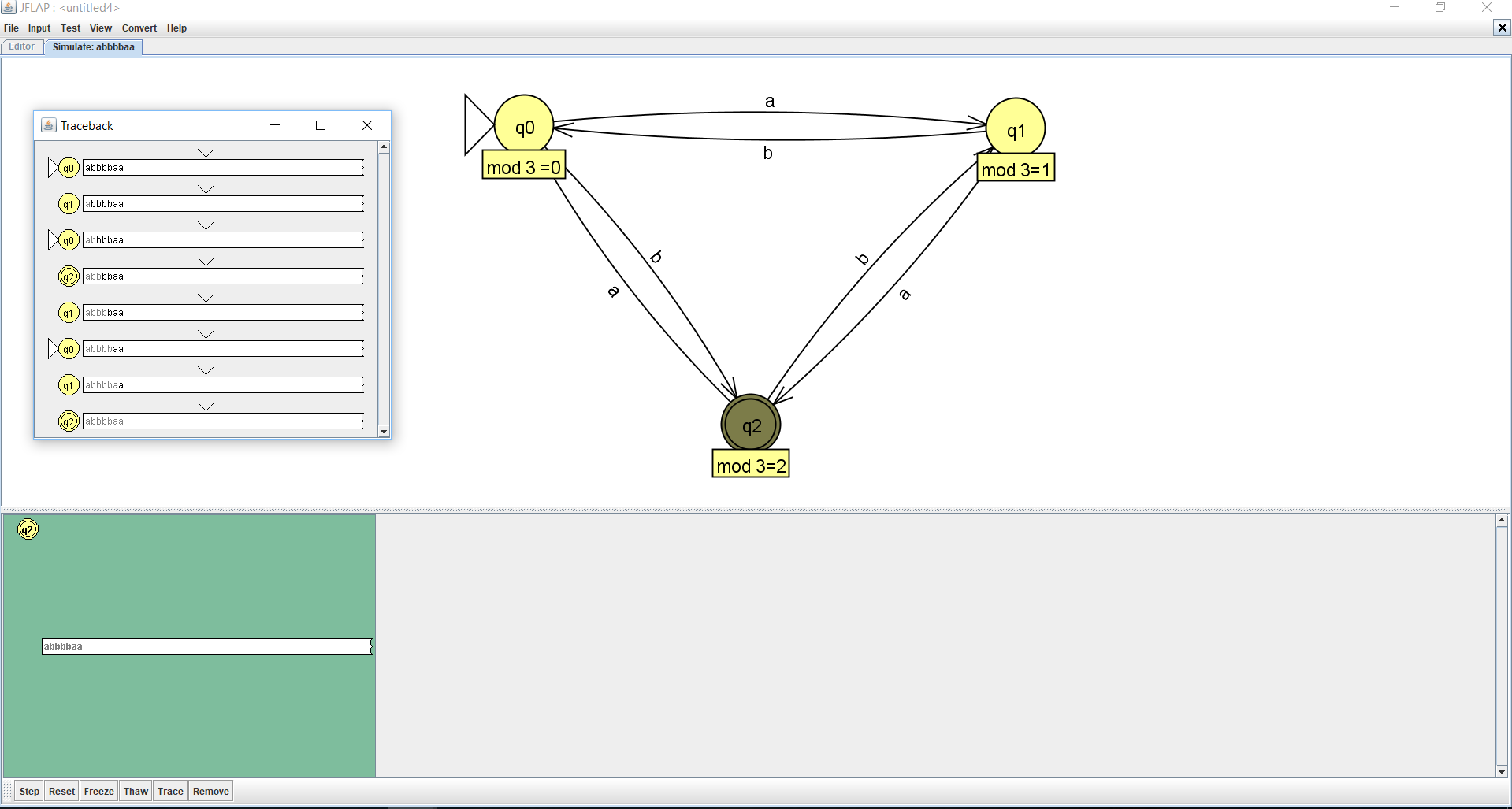
1.aaabbab not accepted



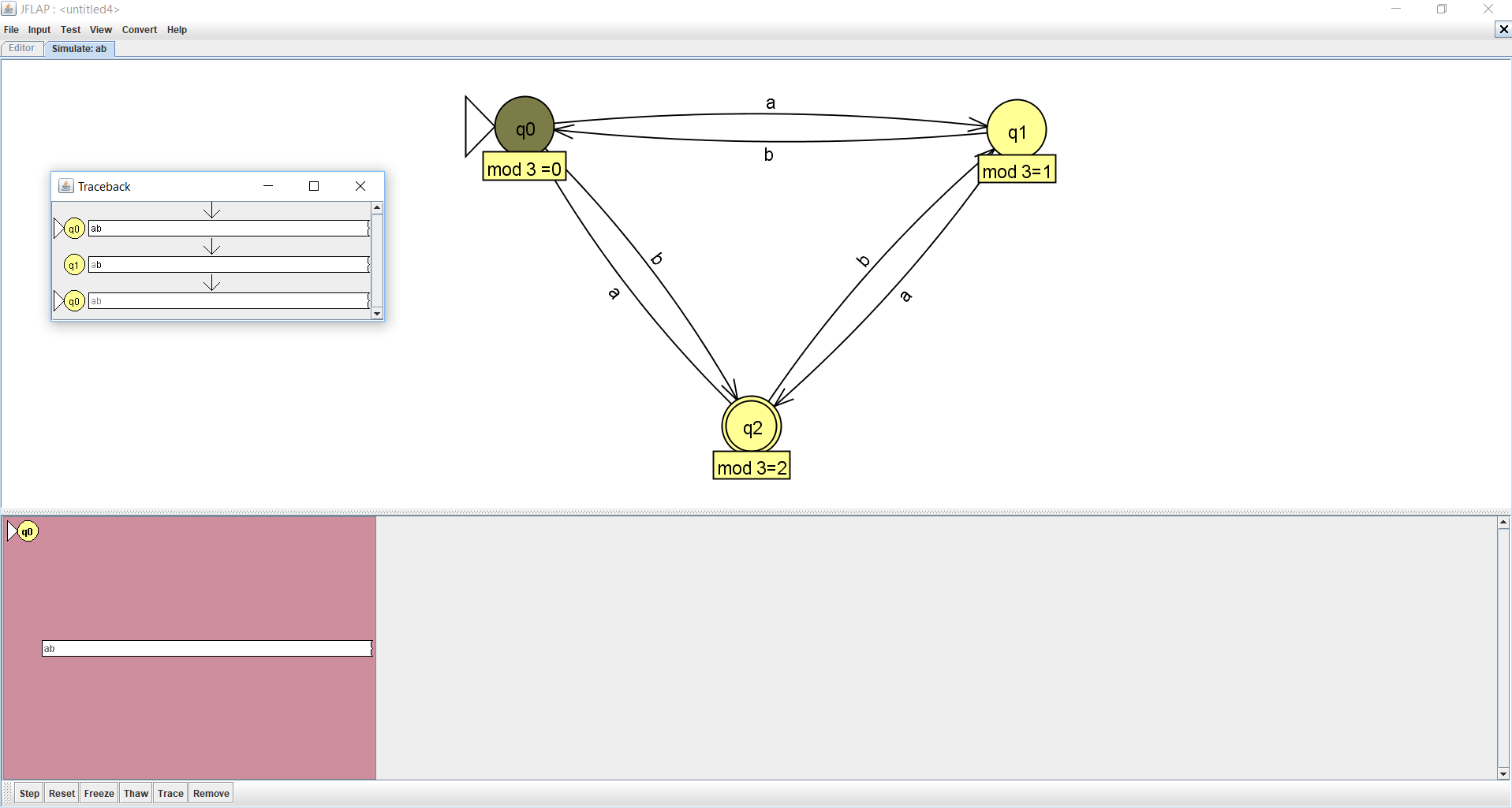
2. ababb accepted



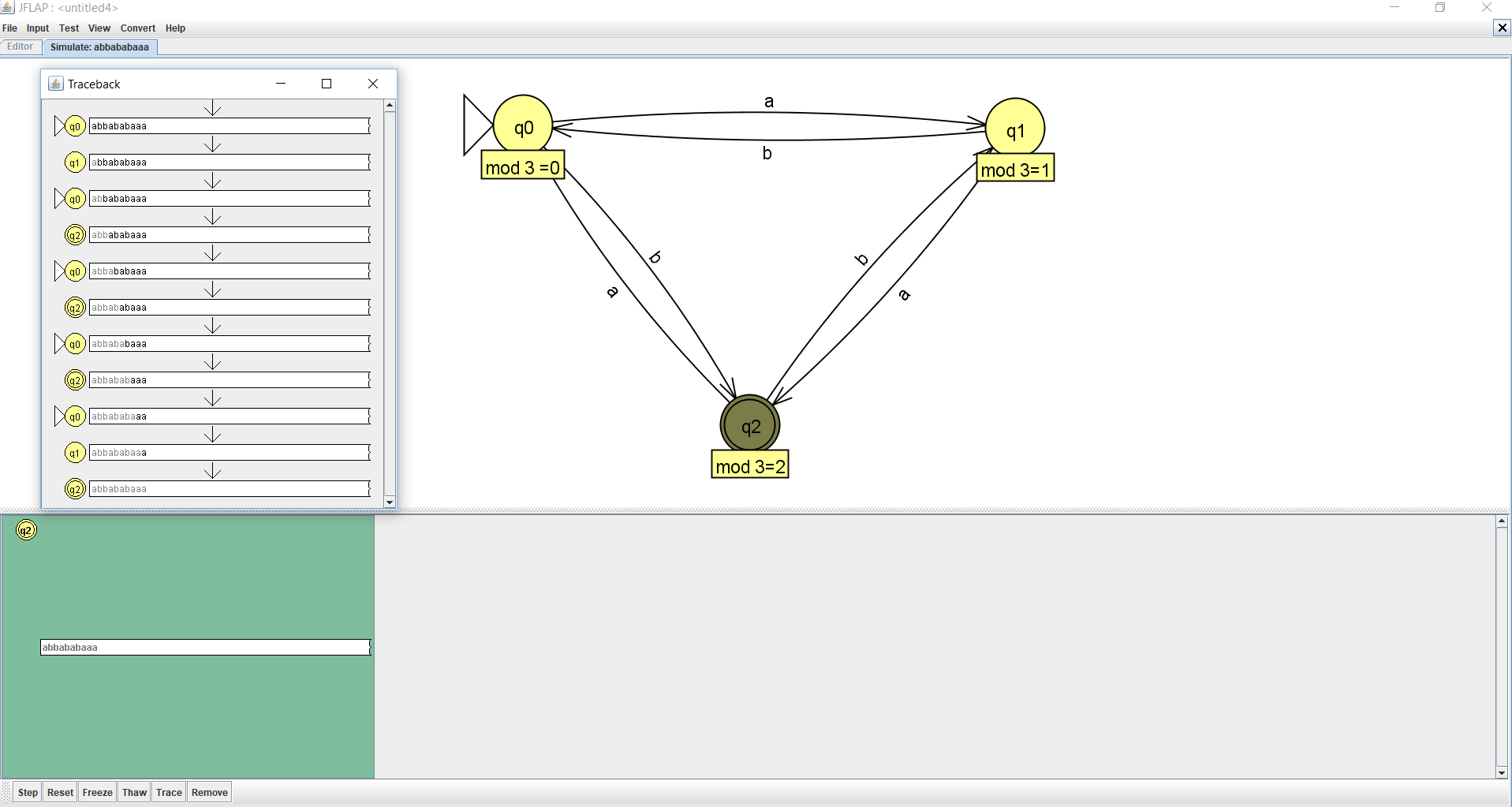
3.abbbbaa accepted



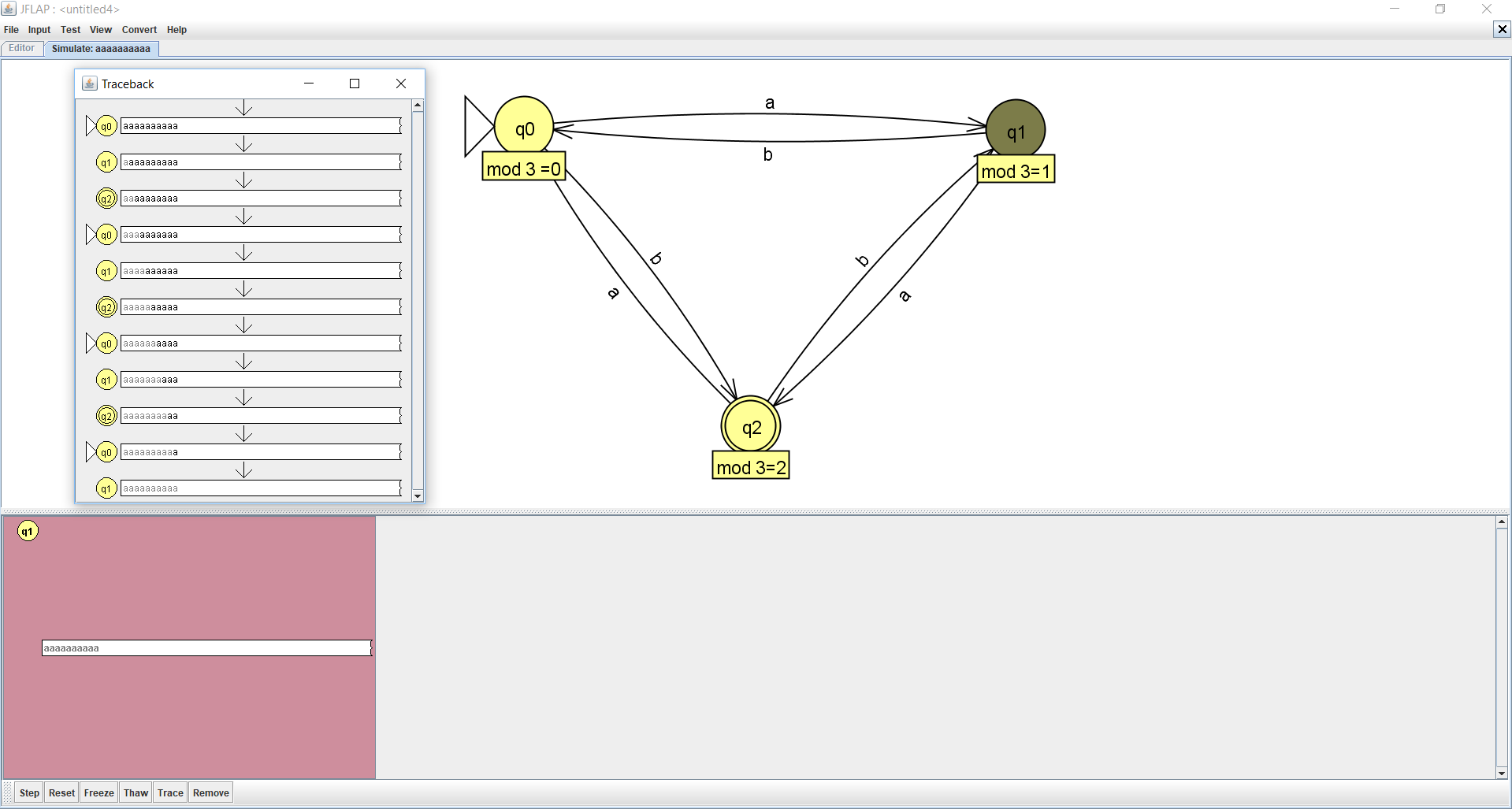
4.ab not accepted



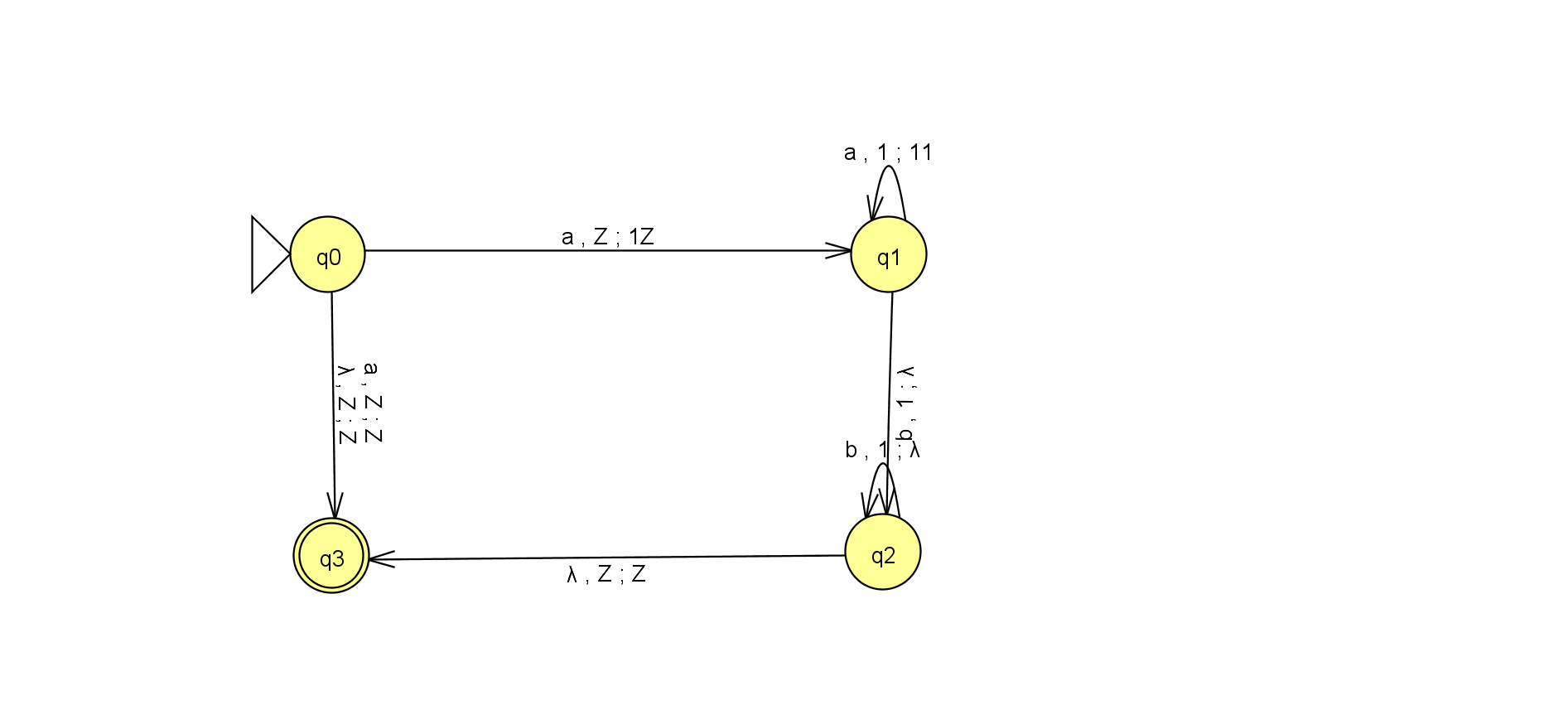
5.abbababaaa accepted



6.aaaaaaaaaa not accepted

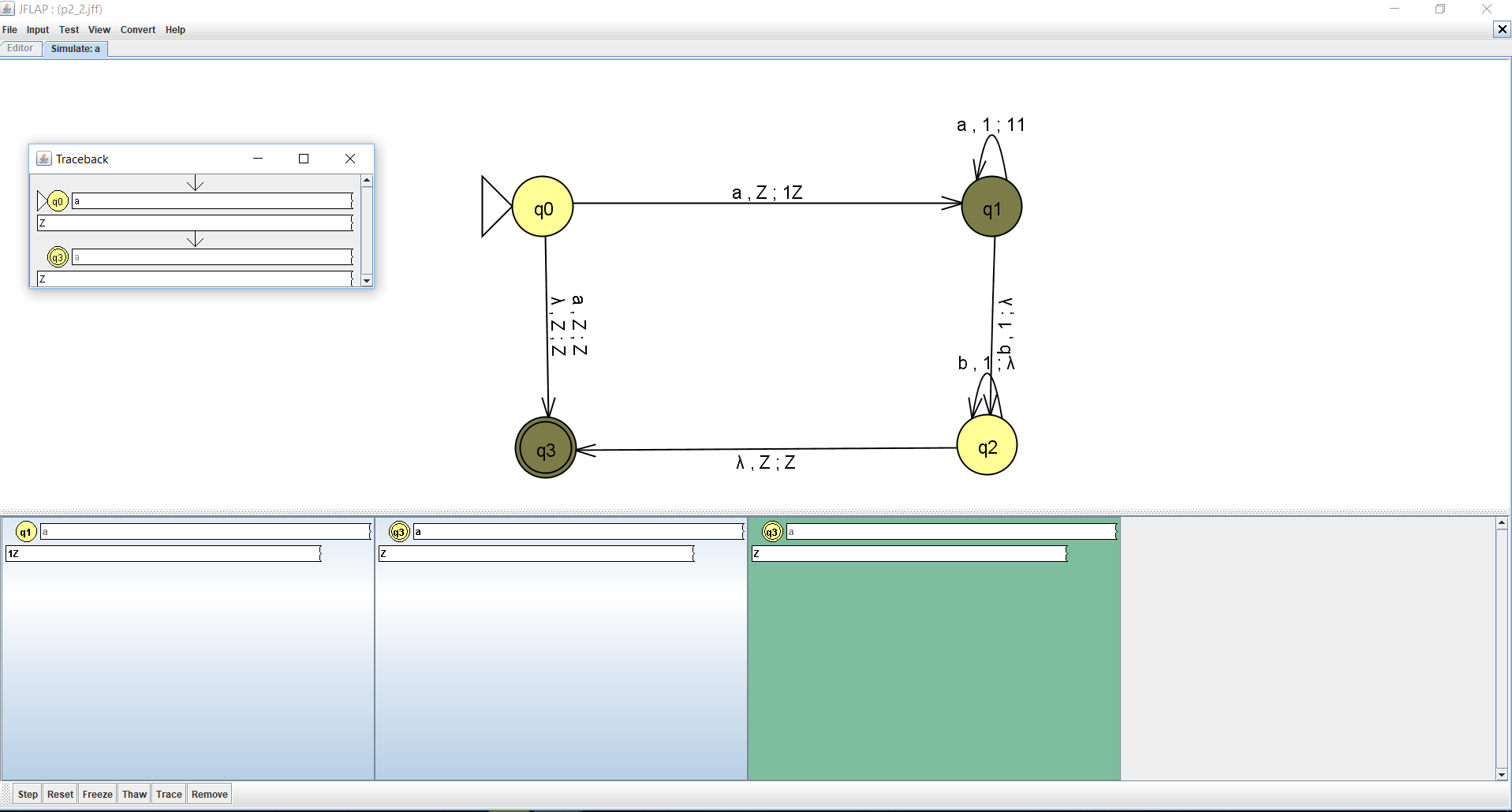


3-

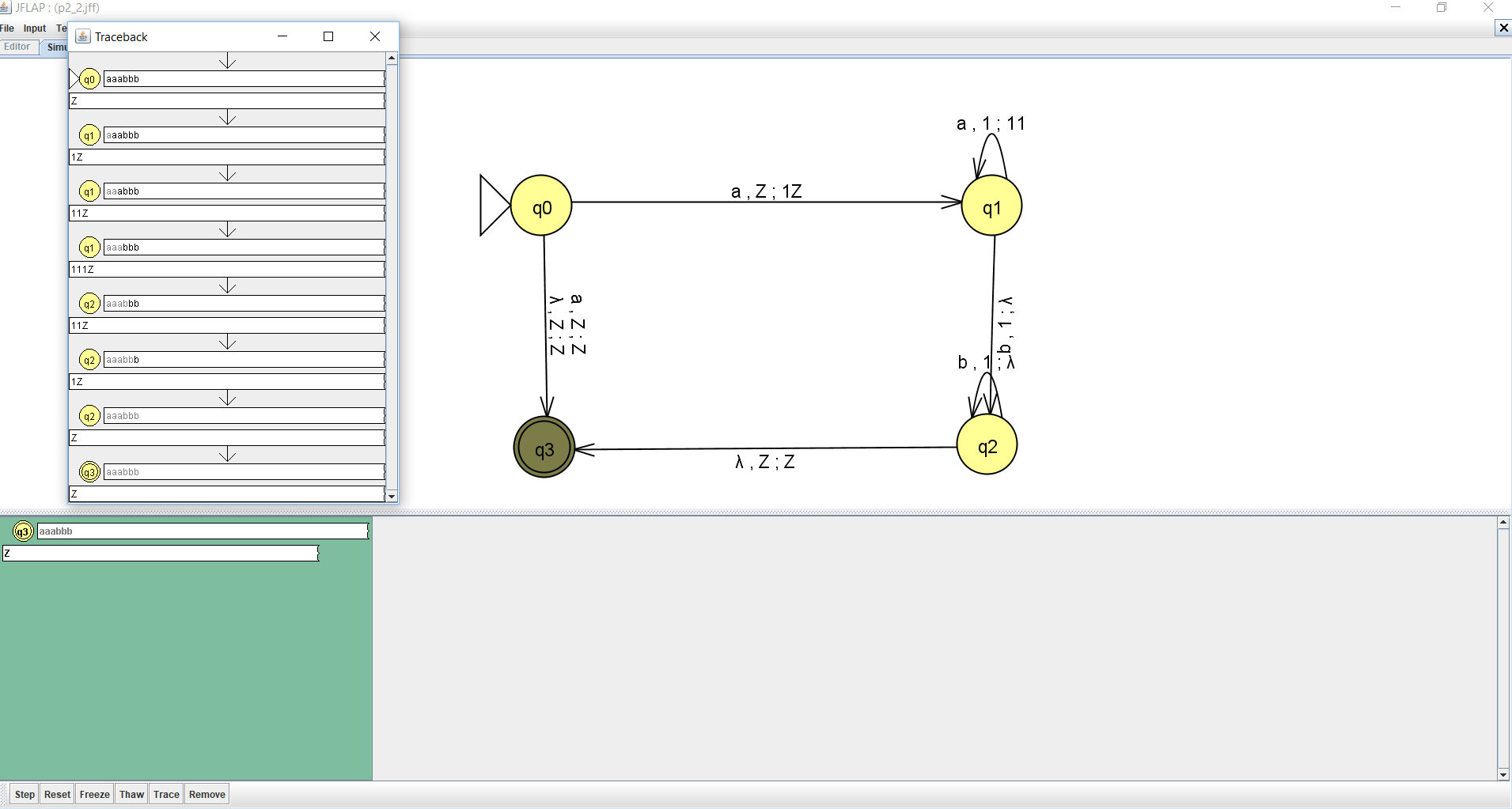


رشته های ورودی :

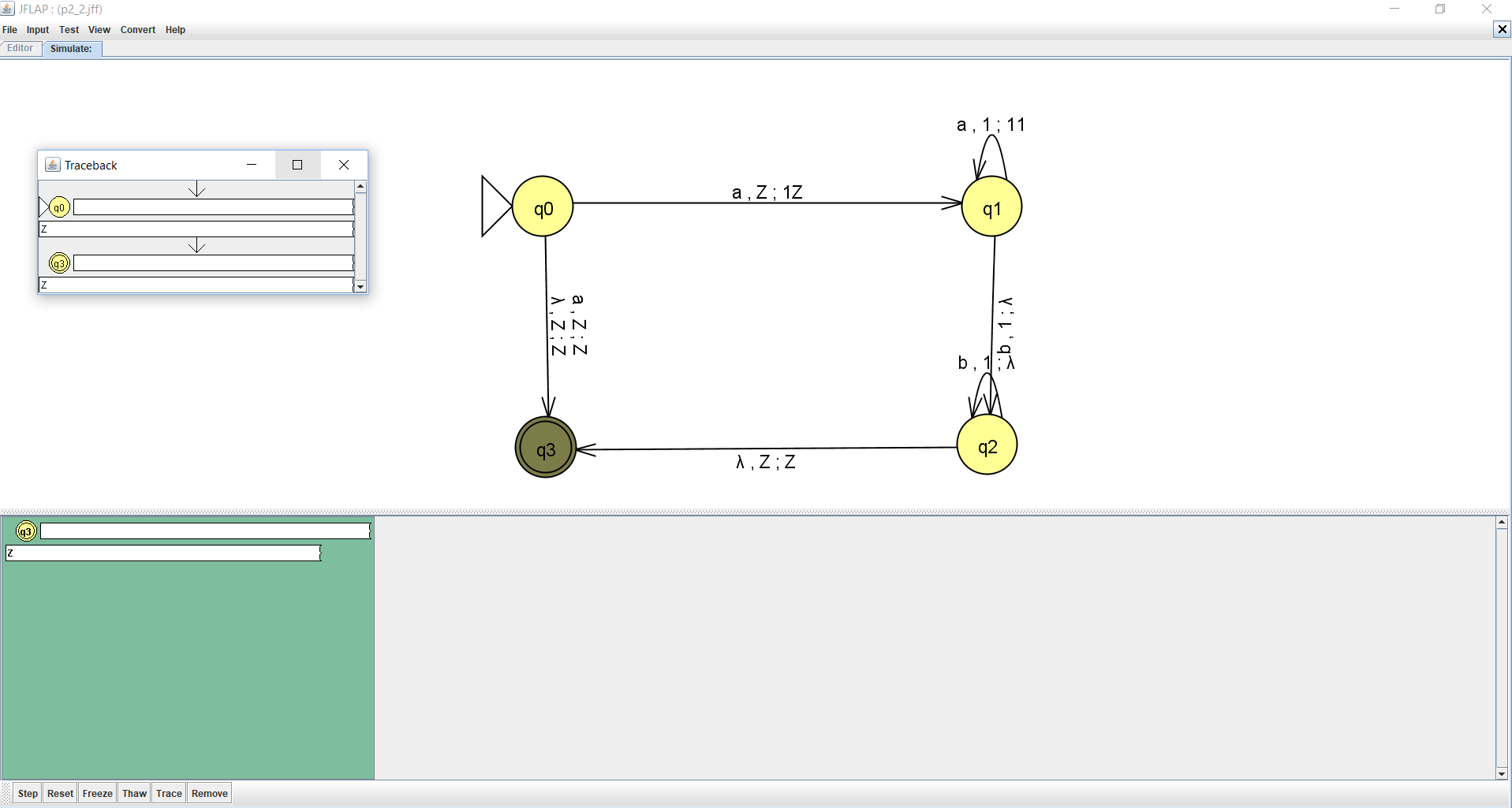
1. a accepted



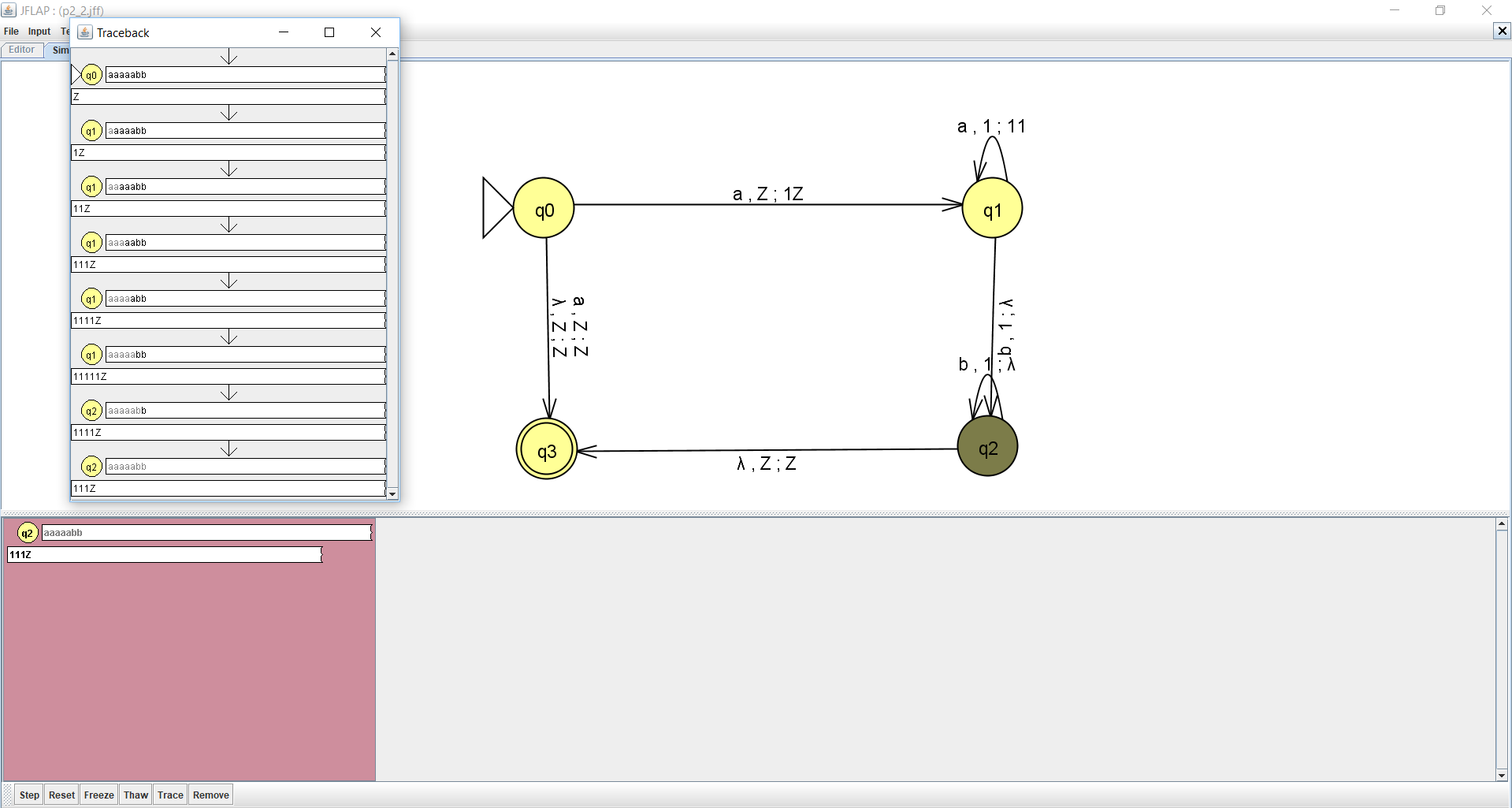
2.aaabbb accepted



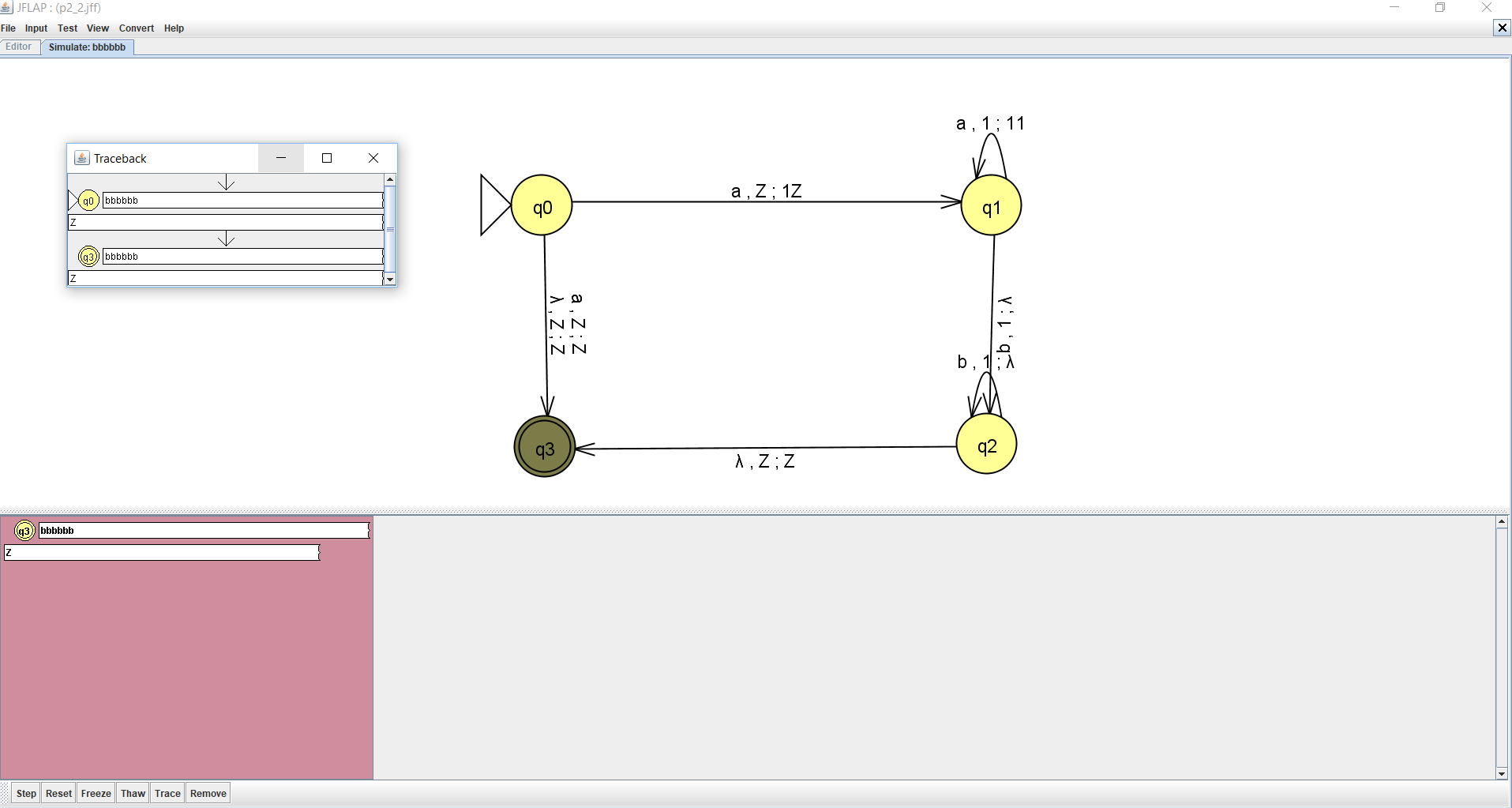
3.λ accepted



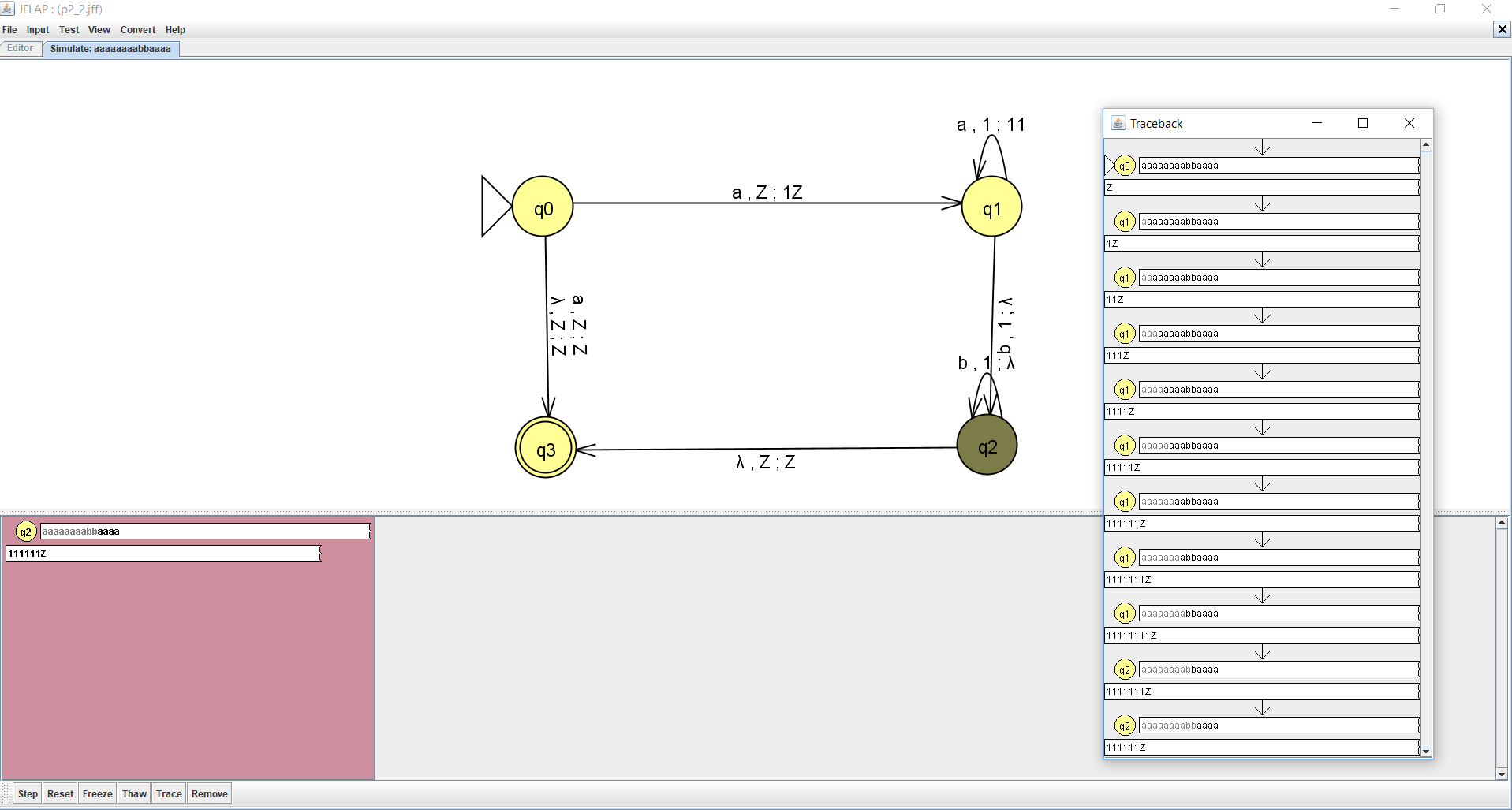
4.aaaaabb not accepted



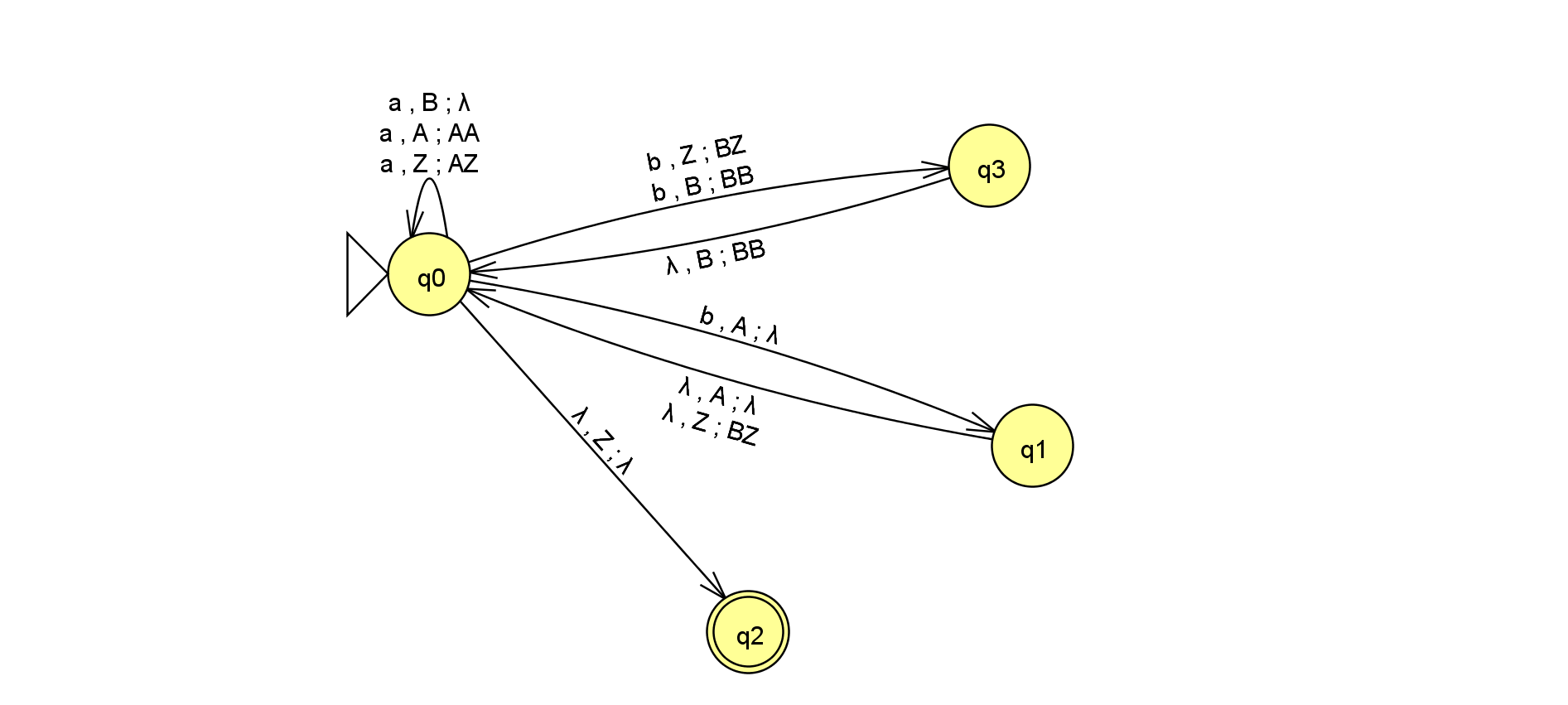
5. bbbbbb not accepted



6. aaaaaaaabbaaaa not accepted

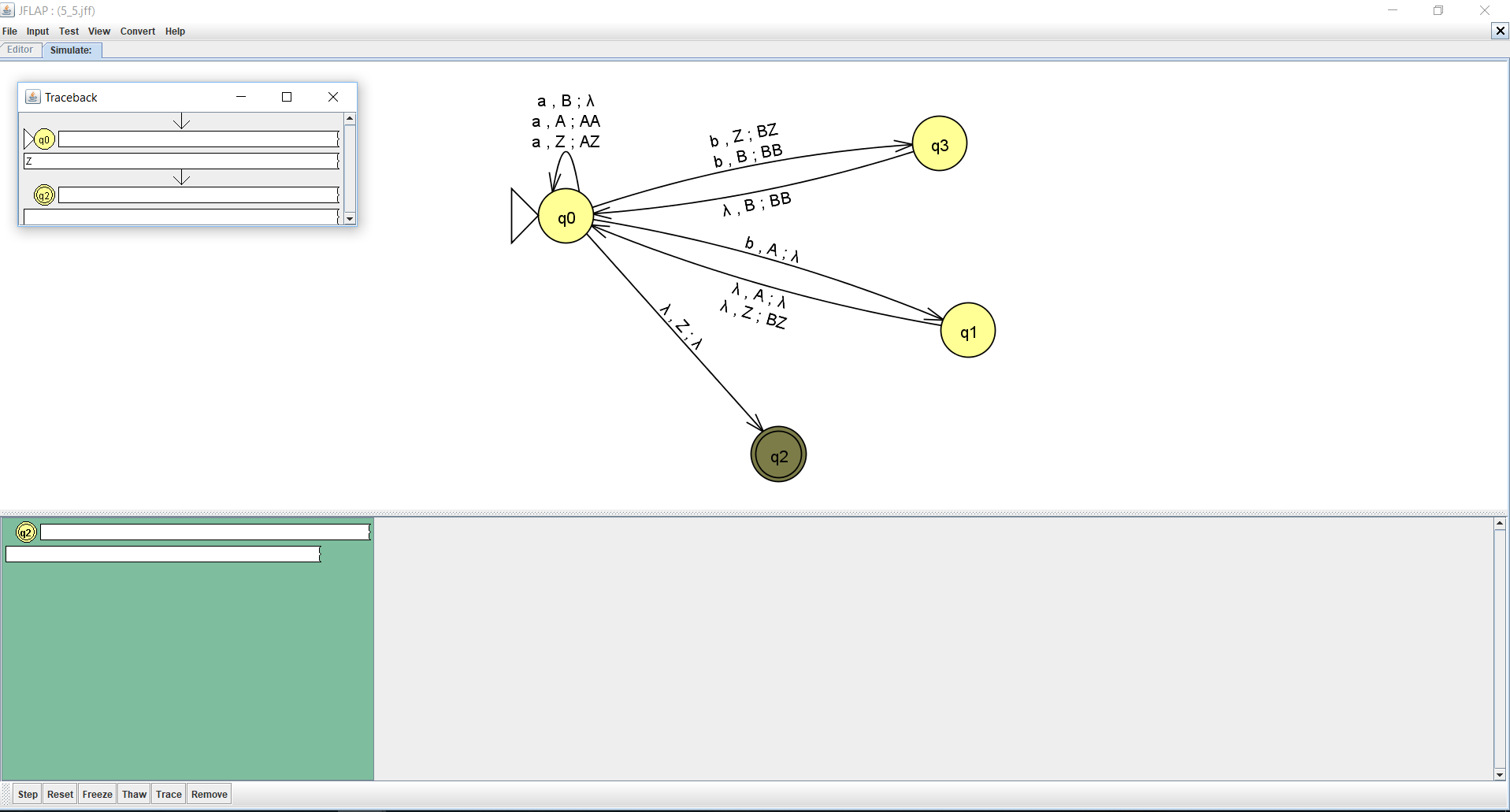


1. PDA نظیر زبان داده شده :

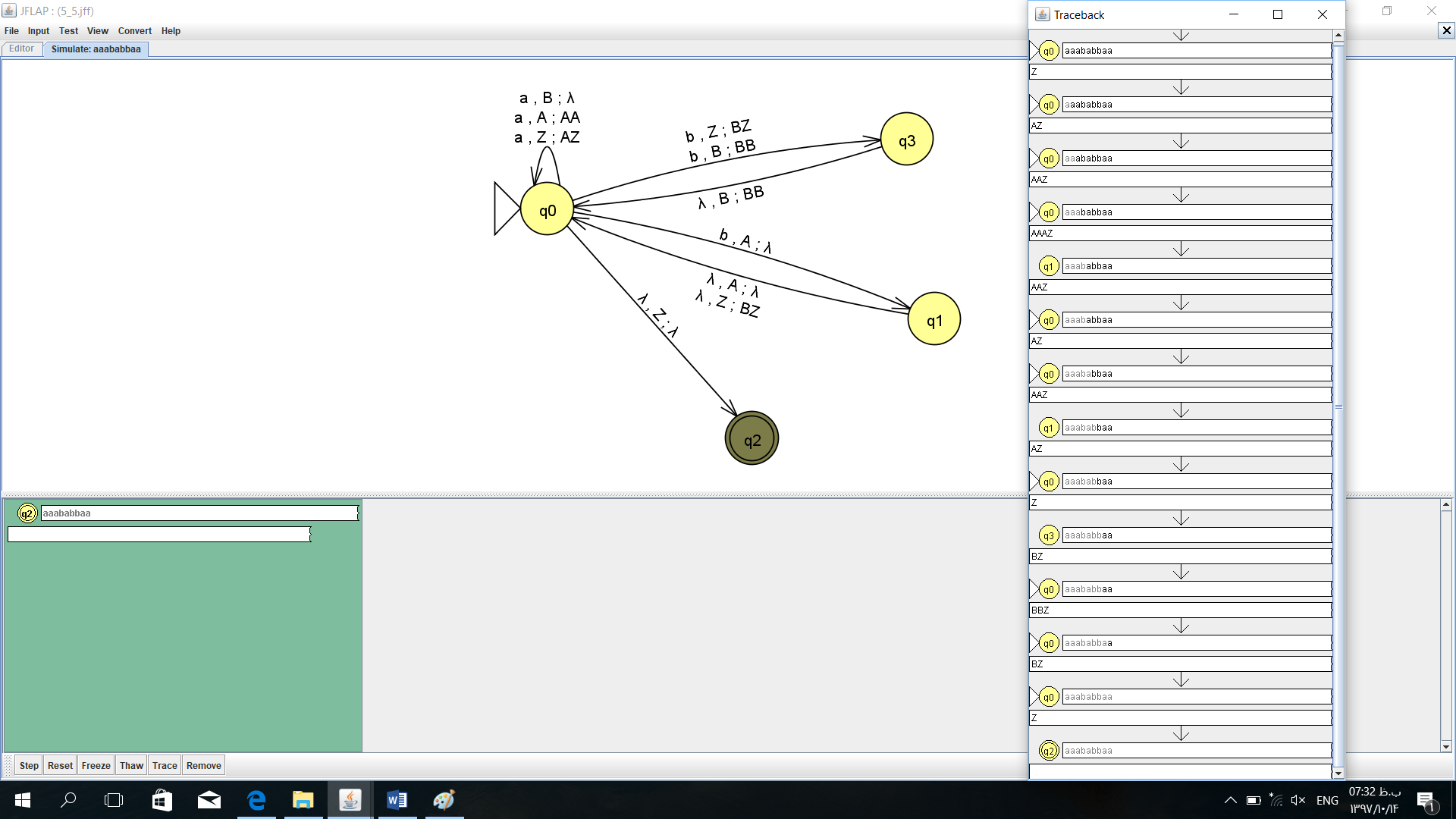


رشته های ورودی :

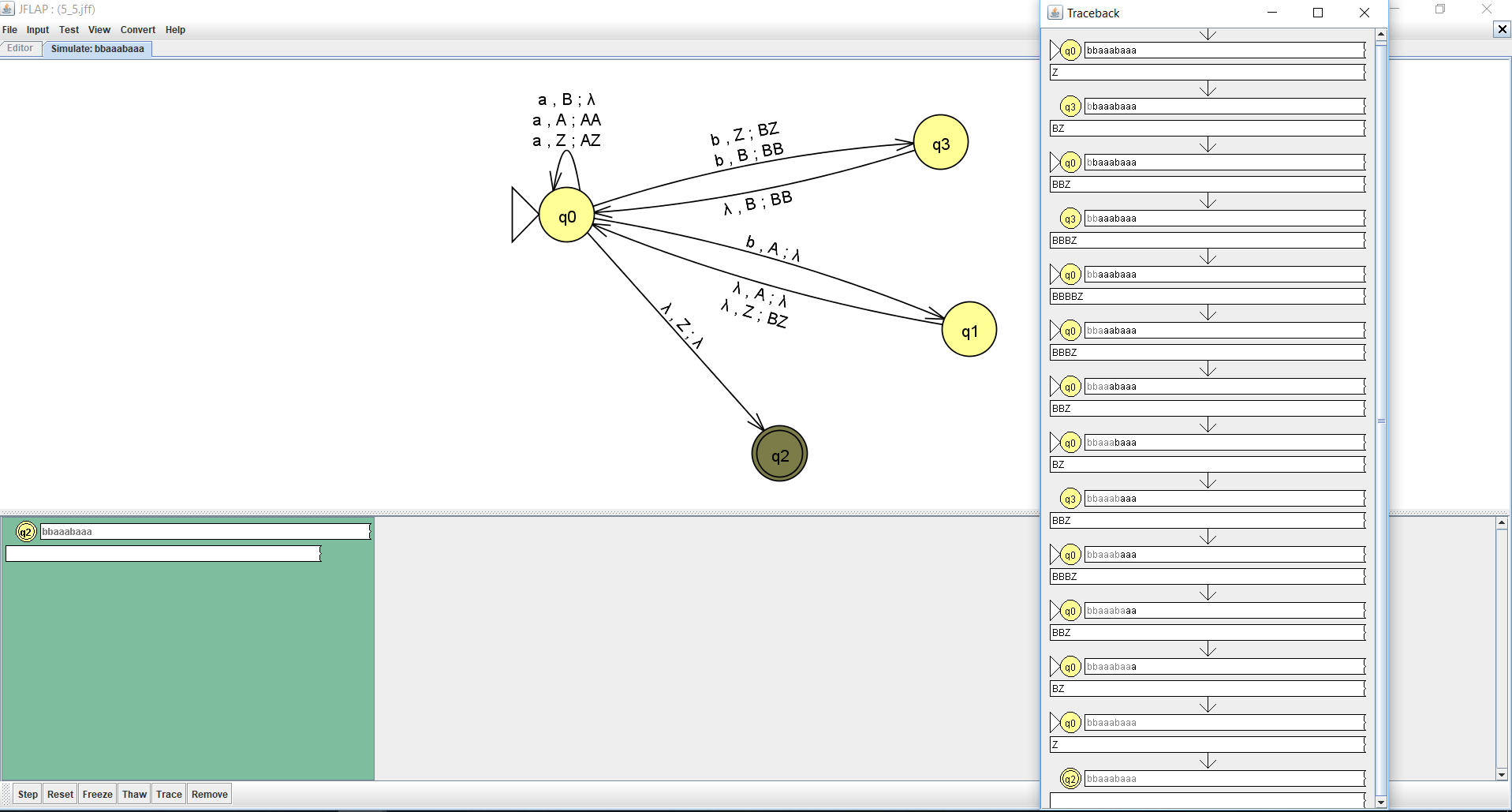
1. λ accepted



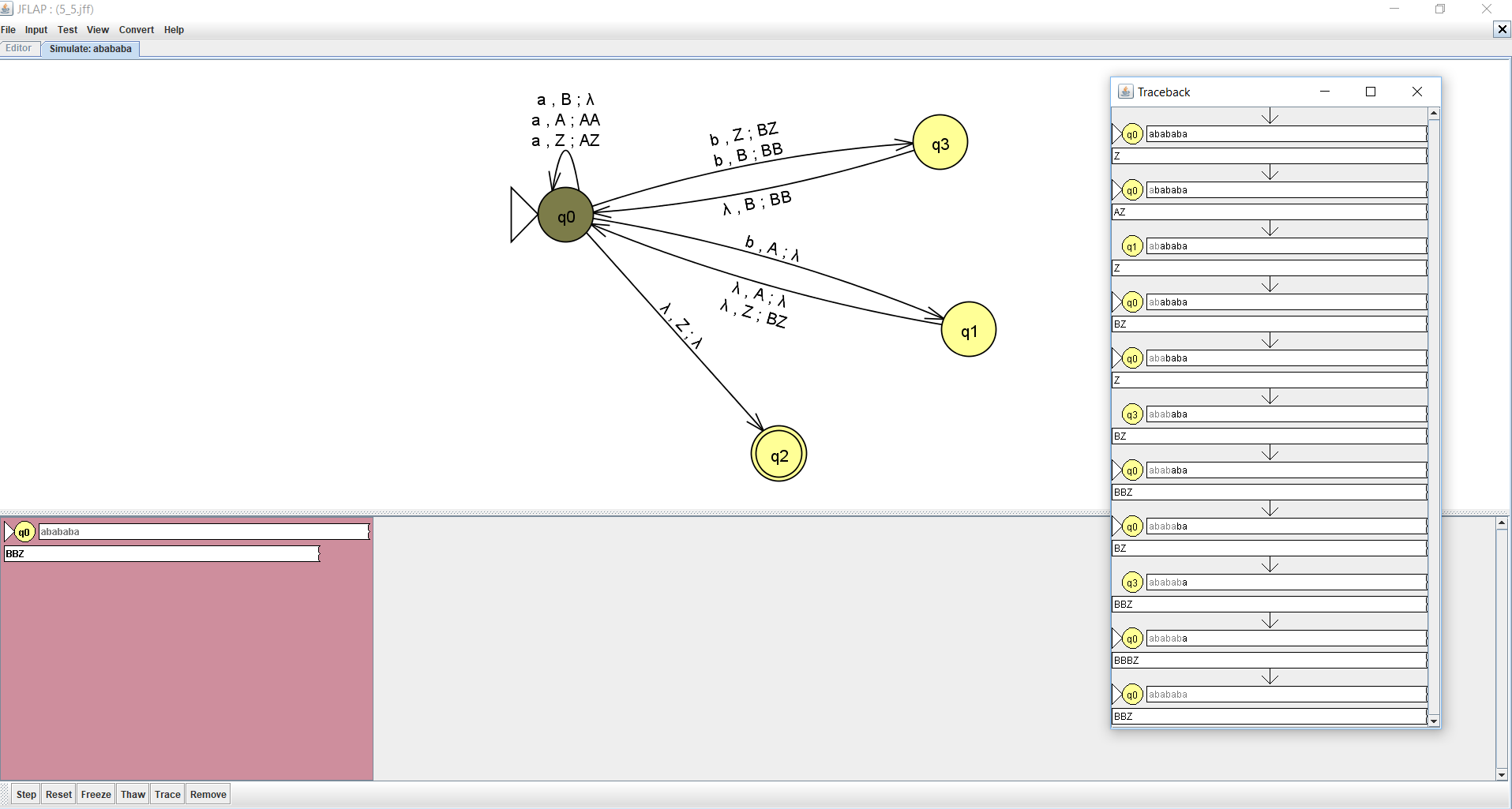
2. aaababbaa accepted



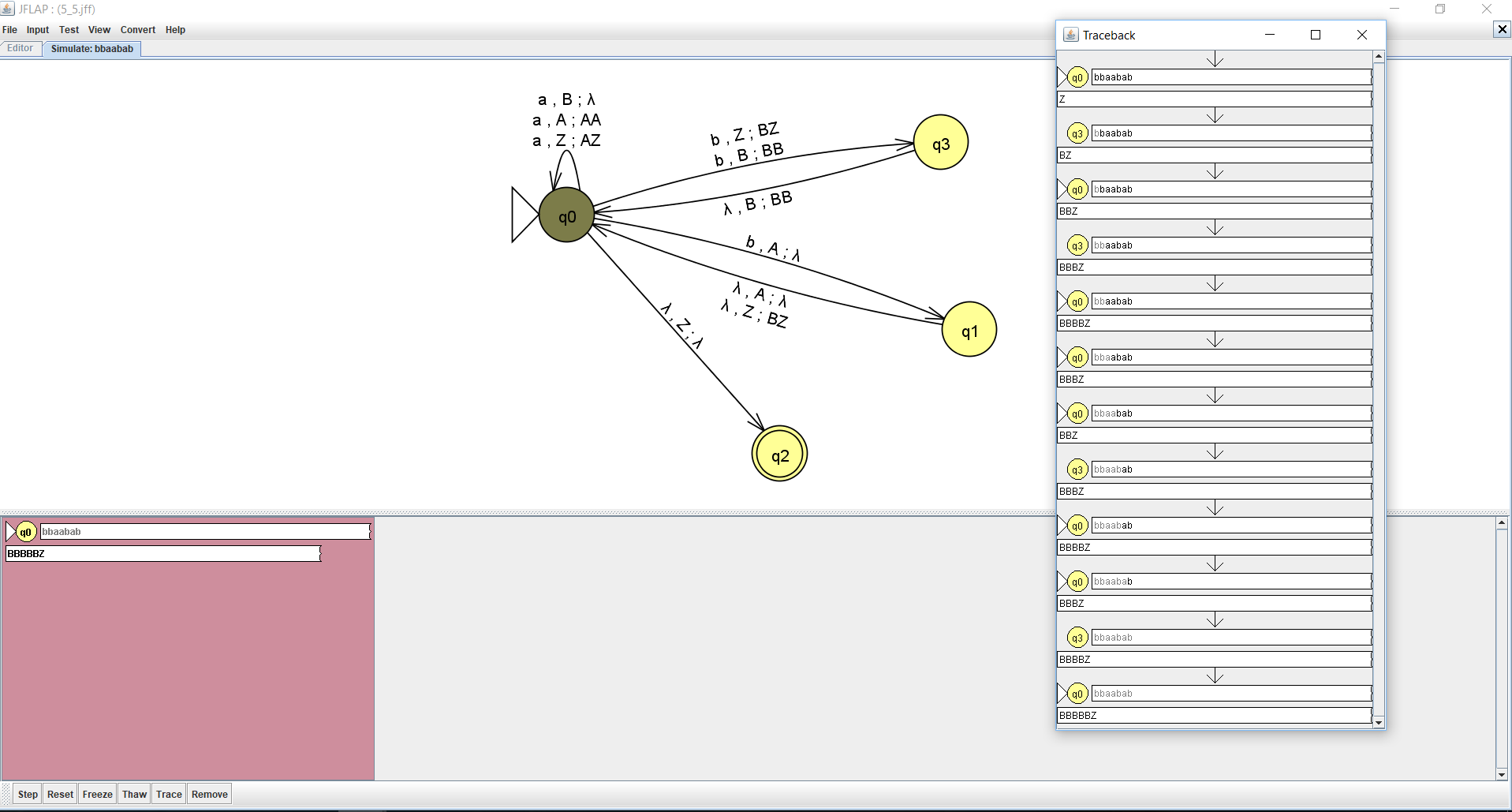
3.bbaaabaaa accepted



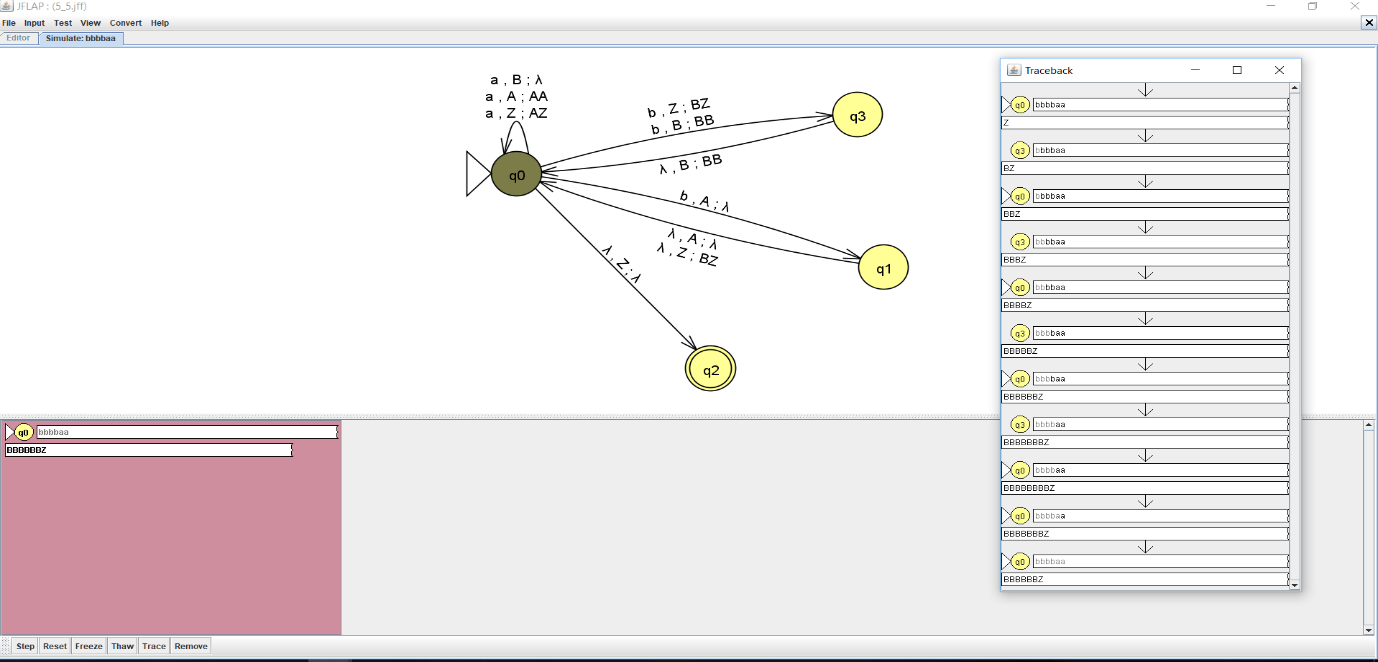
4. abababa not accepted



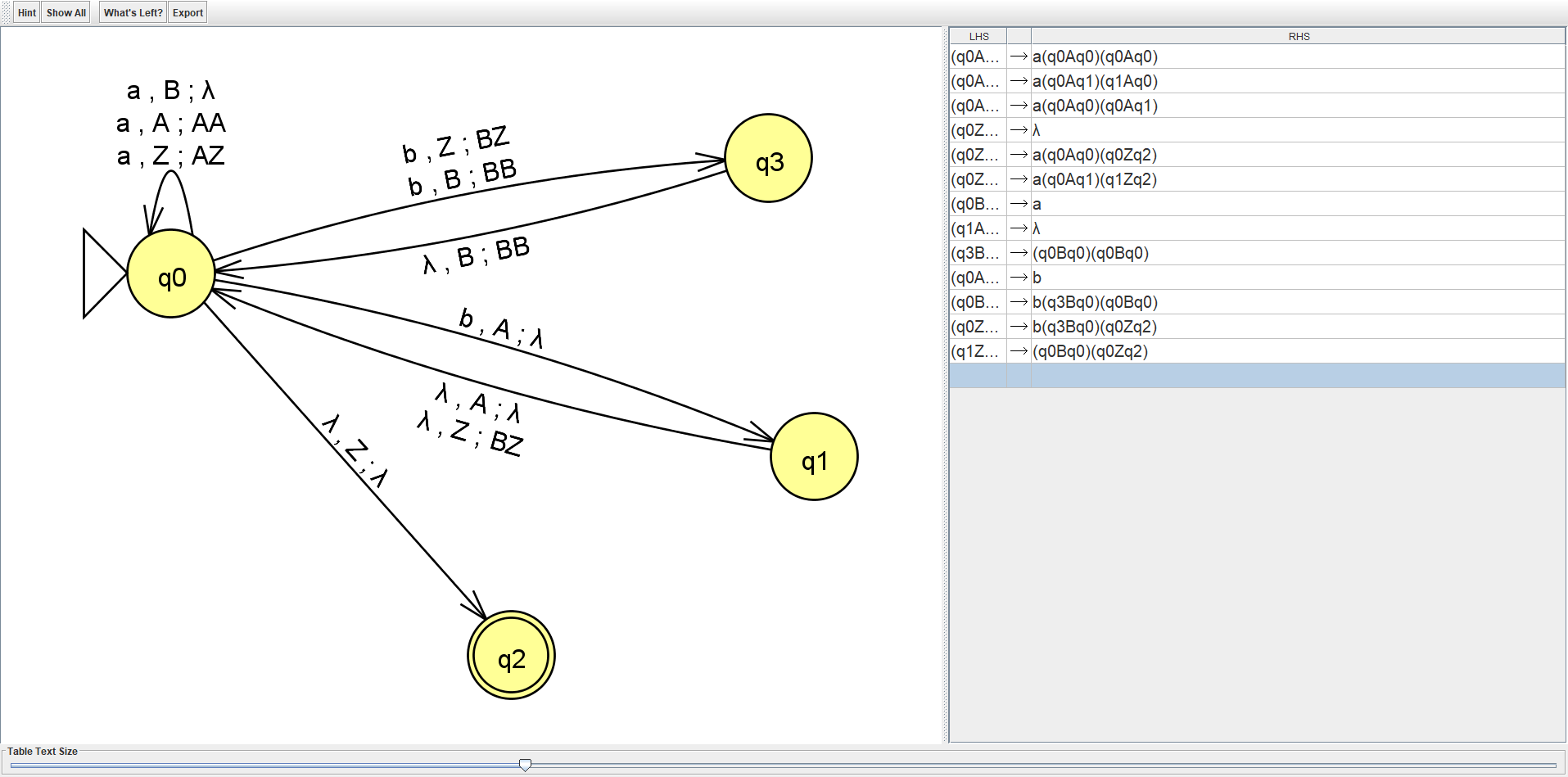
5.bbaabab not accepted

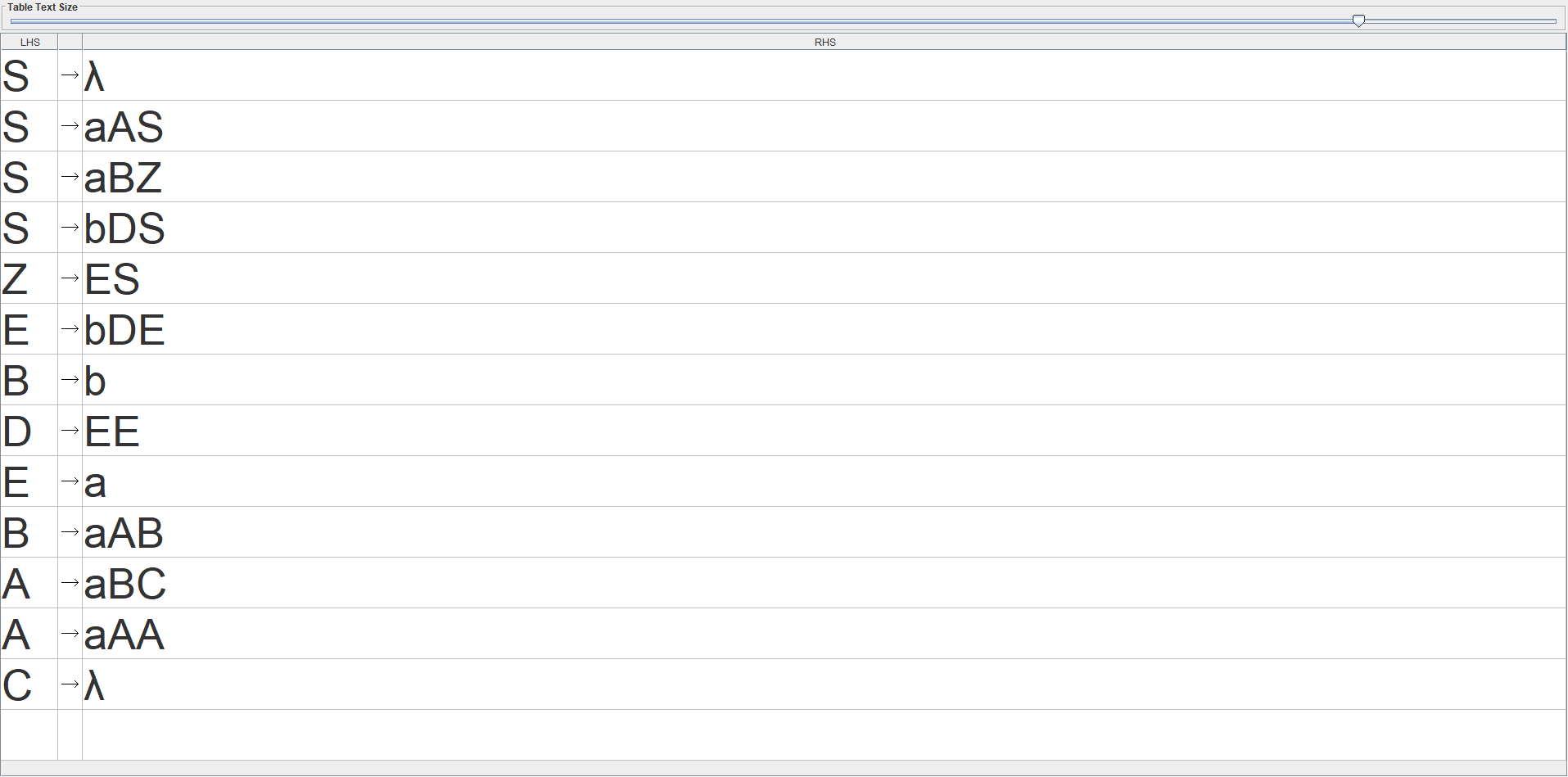


6.bbbbaa not accepted



تبدیل به گرامر مستقل از متن :





6-

