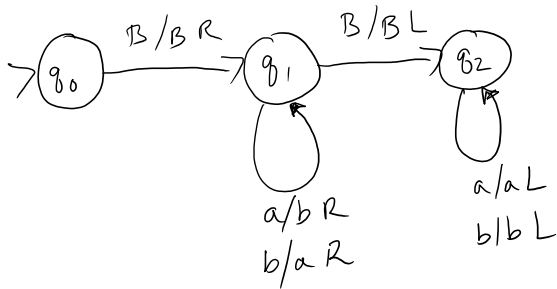


Switching Example (script)

Swap all a's to b's and all b's to a's.

→ Rewind your TM back to position 0 before halting.



Double the length example.

Given a string of a's. double its length
by adding more a's.

$$\Sigma = \{a\}$$

→ (60)

$a \rightarrow aa$

$aa \rightarrow aaaa$

$aaa \rightarrow aaaaaa$

⋮

$a \rightarrow aa$

$aa \rightarrow aaaa$

How do we
keep track of
how many a's to
write?

Strategy: use marker symbols.

$aa \rightarrow aaa \rightarrow Xaa$

 $aa \rightarrow aax \rightarrow Xax$

$XaXX$

$XXXX$

$XXXXa$

←

$aaaaa$

$aa \rightarrow xx \rightarrow xxxa$

$xaax$

$xaaxa$

$axaax \checkmark$

