

# ① example of a TM:

A TM that accepts all strings.

It will shift its input string to the right by one cell, and inserts a \$ at the now-empty leftmost cell.

It will bring the head back left to place it on top of the originally first character of the input string.

For example, if the initial configuration of the tape is like

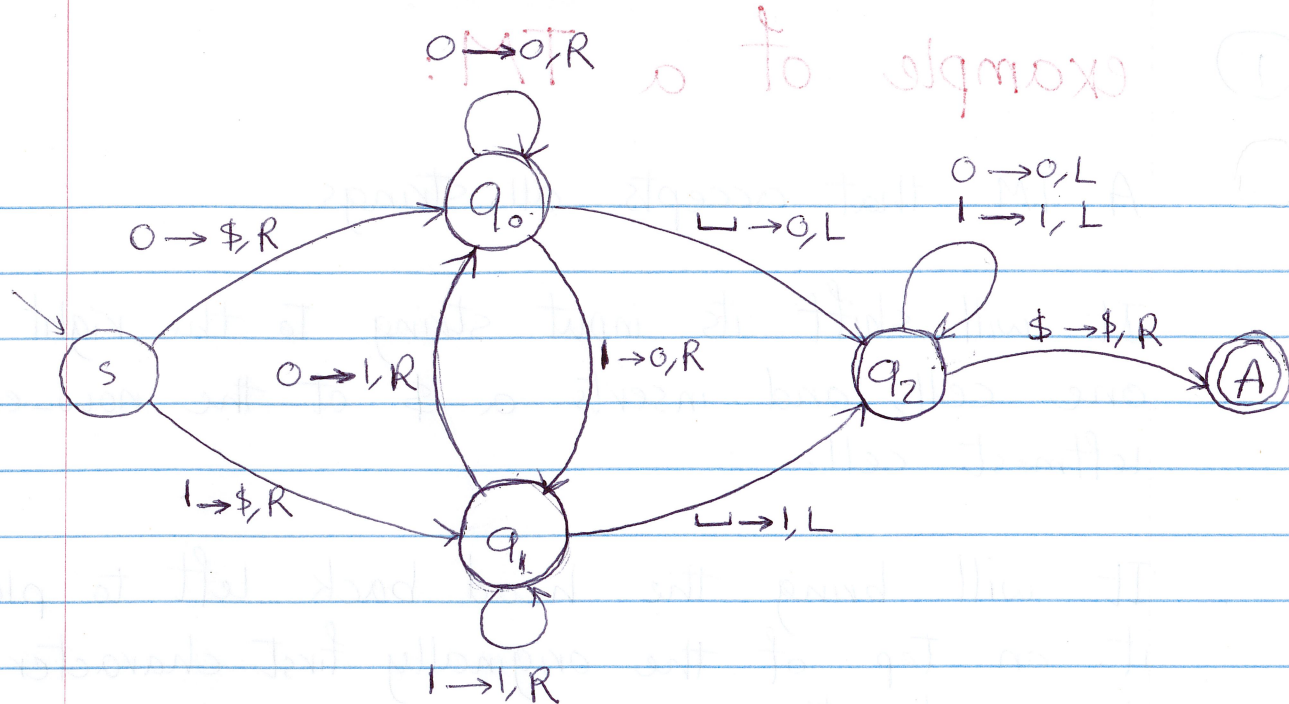
0	1	1	0	...
---	---	---	---	-----

it will accept the input string. But will leave the tape like

\$	0	1	1	0	...
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We are interested in such a TM to mark the beginning of an input string with a \$ as a preprocessing step for future other TMs.

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Some configurations:

⑤ 0 1 1 0 ␣ ␣

\$ q<sub>0</sub> 1 1 0 ␣ ␣

\$ 0 q<sub>1</sub> 1 0 ␣ ␣

\$ 0 1 q<sub>1</sub> 0 ␣ ␣

\$ 0 1 1 q<sub>0</sub> ␣ ␣

\$ 0 1 q<sub>2</sub> 1 0 ␣

\$ 0 q<sub>2</sub> 1 1 0 ␣

\$ q<sub>2</sub> 0 1 1 0 ␣

q<sub>2</sub> \$ 0 1 1 0 ␣

\$ A 0 1 1 0 ␣

