

State k	input Symbol α	$\delta(k, \alpha)$
s	\triangleright	$(s, \triangleright, \rightarrow)$
s	0	$(s, 0, \rightarrow)$
s	1	$(s, 1, \rightarrow)$
s	0	$(q_0, 0, \rightarrow)$
q_0	1	$(q_1, 1, \rightarrow)$
q_1	\sqcup	$(\text{"yes"}, \sqcup, -)$

The above is a transition table of a nondeterministic Turing machine which accepts only the language L defined by:

$$L = \{x \mid x \text{ ends with } 01\}.$$

$$\text{Here, } K = \{s, q_0, q_1\}, \Sigma = \{\triangleright, \sqcup, 0, 1\}.$$

δ is a function from $K \times \Sigma$ into $(K \cup \{h, \text{"yes"}, \text{"no"}\}) \times \Sigma \times \{\leftarrow, \rightarrow, -\}$.

□□□□□□□□□□□□□□□□

State k	input Symbol α	$\delta(k, \alpha)$
s	\triangleright	$(s, \triangleright, \rightarrow)$
s	a	(q_0, a, \rightarrow)
q_0	b	(s, b, \rightarrow)
q_0	b	$(\text{"yes"}, b, -)$

The above is a transition table of a nondeterministic Turing machine which accepts only the language L defined by:

$$L = \{x \mid x \text{ begins with } ab\}.$$

$$\text{Here, } K = \{s, q_0\}, \Sigma = \{\triangleright, \sqcup, a, b\}.$$

δ is a function from $K \times \Sigma$ into $(K \cup \{h, \text{"yes"}, \text{"no"}\}) \times \Sigma \times \{\leftarrow, \rightarrow, -\}$.

□□□□□□□□□□□□□□□□

State k	input Symbol α	$\delta(k, \alpha)$
s	\triangleright	$(s, \triangleright, \rightarrow)$
s	a	(q_0, a, \rightarrow)
q_0	b	(s, b, \rightarrow)
q_0	b	(q_1, b, \rightarrow)
q_1	\sqcup	$(\text{"yes"}, \sqcup, -)$

The above is a transition table of a nondeterministic Turing machine which accepts only the language L defined by:

$$L = \{x \mid x = (ab)^n, \text{ for some } n \in \mathbb{N}\}.$$

$$\text{Here, } K = \{s, q_0, q_1\}, \Sigma = \{\triangleright, \sqcup, a, b\}.$$

δ is a function from $K \times \Sigma$ into $(K \cup \{h, \text{"yes"}, \text{"no"}\}) \times \Sigma \times \{\leftarrow, \rightarrow, -\}$.

□□□□□□□□□□□□□□□□

State k	input Symbol α	$\delta(k, \alpha)$
s	\triangleright	$(s, \triangleright, \rightarrow)$
s	1	$(s, 1, \rightarrow)$
s	0	$(q_0, 0, \rightarrow)$
s	\sqcup	$(\text{"no"}, \sqcup, -)$
q_0	0	$(q_0, 0, \rightarrow)$
q_0	\sqcup	$(\text{"no"}, \sqcup, -)$
q_0	1	$(\text{"yes"}, 1, -)$

The above is a transition table of a deterministic Turing machine which accepts only the language L defined by:

$$L = \{x \mid x \text{ includes } 01\}.$$

Here, $K = \{s, q_0\}$, $\Sigma = \{\triangleright, \sqcup, 0, 1\}$.

δ is a function from $K \times \Sigma$ into $(K \cup \{h, \text{"yes"}, \text{"no"}\}) \times \Sigma \times \{\leftarrow, \rightarrow, -\}$.

□□□□□□□□□□□□□□□□