

A **nondeterministic finite automation** is define as,
 $M = \{Q, \Sigma, \delta, q_0, F\}$

where:

1. Q is a finite set of states,
2. Σ is the finite alphabet,
3. δ is transition function
4. q_0 is the start state
5. $F \subseteq Q$ is the set of accept states.

As NFA defined on Page 54 of ITC textbook.

$$Q = \{q_1, q_2, q_3, q_4\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{q_4\}$$

$$q_0 = q_1$$

$$\delta = \{((q_1, 0), \{q_1\}), ((q_1, 1), \{q_1, q_2\}), ((q_1, \epsilon), \phi), ((q_2, 0), \{q_3\}), ((q_2, 1), \phi), ((q_2, \epsilon), \{q_3\}), ((q_3, 0), \phi), ((q_3, 1), \{q_4\}), ((q_3, \epsilon), \phi), ((q_4, 0), \{q_4\}), ((q_4, 1), \{q_4\}), ((q_4, \epsilon), \phi)\}$$

Transition Function in Table form:

	0	1	ϵ
q_1	$\{q_1\}$	$\{q_1, q_2\}$	ϕ
q_2	$\{q_3\}$	ϕ	$\{q_3\}$
q_3	ϕ	$\{q_4\}$	ϕ
q_4	$\{q_4\}$	$\{q_4\}$	ϕ

NFA in pictorial form:

