> *A non-deterministic finite automaton (NDFA/NFA) is a 5-tuple (Q, Σ, δ, q0, F)*
>
> *where,*
>
> - *Q = is a finite set of states.*
> - *Σ = is a finite set of input symbols.*
> - *δ = is a transition function mapping from Q × Σ to $2^Q$.*
> - *q0 = is the initial state, q0 ∈ Q.*
> - *F = is a set of final states, F ⊆ Q.*
>
> *Reference: Introduction to the Theory of Computation" by Michael Sipser*

## Example of NFA,

Consider the NFA that accepts all string ending with 01.

Transition diagram

Transition table

In this NFA,

M = {Q, Σ, δ, q0, F}

where,

- Q = {q0, q1, q2}.
- Σ = {0, 1}.
- δ = As shown above.
- q0 = Initial state.
- F = {q2}

Reference:

- Introduction to the Theory of Computation" by Michael Sipser.

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