DFA vs. NFA

S.NO.	DFA	NFA
1	DFA stands for Deterministic Finite Automata.	NFA stands for Nondeterministic Finite Automata.
2	For each symbolic representation of the alphabet, there is only one state transition in DFA.	No need to specify how does the NFA react according to some symbol.
3	DFA cannot use Empty String transition.	NFA can use Empty String transition.
4	In DFA, there is always a unique state to go to next state. Q x Σ →Q	In NFA, several choices may exists for go to nest state. Q x Σ →2^Q
5	String is accepted by DFA if it is transition into final state.	String is accepted by NFA if one of all possible transitions ends in final state.
6	Dead state may be needed.	Dead state is not required.
7	DFA is more difficult to construct.	NFA is easier to construct.
8	DFA requires more space.	NFA requires less space then DFA.

Arden's theorem state that: "If P and Q are two regular expressions over "∑", and if P does not contain "∈" , then the following equation in R given by R = Q + RP has a unique solution i.e., R = QP*."