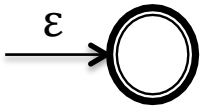
Building Non-deterministic Finite Automata (NFA) – Test Yourself

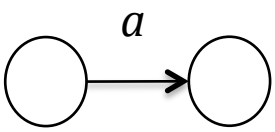
First of, remember the six basic rules. LEARN THESE!

1. The entire RE is the null string

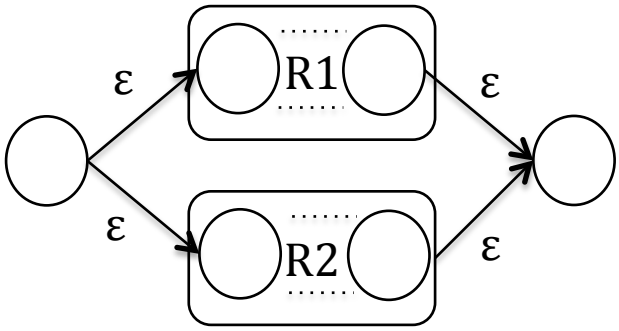


2. The RE is empty

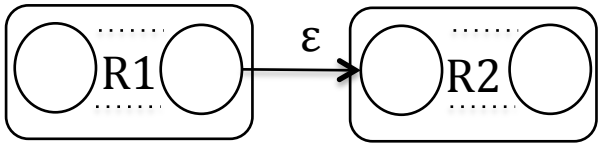
3. An element *a* of the input alphabet is in the RE



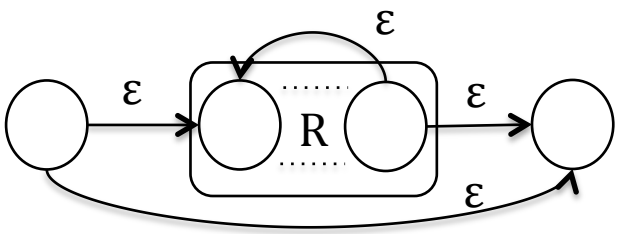
4. Two REs are joined by the alternation operator (|)



5. Two REs are concatenated



6. A RE has a Kleene closure (*) applied to it



Ok, now that you've learnt the rules, try building NFA for the following RE:

1. `(00 + 1)* (0 + 1)`
2. `(ba)+ (a*b* | a*)`
3. `(ba)* (ba)+ b*`
4. `(0 | 1)*`
5. `(0* | 10*)*`
6. `(a-z|_|0-9)*'-'[0-9][0-9]`

Note that the *inline* '+' operator (as opposed to the superscript '+' operator) is an alternative way of representing alternation. So '00 + 1' is equivalent to '00 | 1'.

For this last one, you may represent all lowercase letters by the symbol *letter* and all digits by the symbol *digit*.