

# REGEX atomic groups `(?>)`

## WE'LL COVER THE FOLLOWING ^

- Example 1 :
- Example 2:

By definition, a REGEX **atomic** group is a non-capturing group that exits the group and throws away all alternatives after the first match of the pattern inside the group, so backtracking is **disallowed**".

While a **non-atomic** group will **allow backtracking**, it will still find the first match, then if the matching ahead fails it will backtrack and find the next match, until a match for the entire expression is found or all possibilities are exhausted.

### Example 1 : #

Let's consider the input string: `xoots` .

- A non-atomic group in the expression `(xoo|xoot)s` applied to `xoots` will:
  - match its 1st alternative `xoo` , then fail as `s` does not immediately follow in `xoot` , and backtrack to its 2nd alternative;
  - match its 2nd alternative `xoot` , then succeed as `s` immediately follows in `xoots` , and stop.
- An atomic group in the expression `(?>xoo|xoot)s` applied to `xoots` will match its 1st alternative `xoo` , then fail as `s` does not immediately follow, and stop as backtracking is disallowed.

### Example 2: #

Let's consider the input string: `bbabbbabbbbc` .

- Without an atomic grouping for the regex pattern `/(.|b*)[ac]/`, the string will have a single match which is the whole string, due to backtracking at the end to match `[ac]`.
- In contrast, for the atomic pattern: `/((?>.*)|b*[ac])`, there will be only three matches to this regex, which are `bba`, `bbba`, `bbbbbc`.