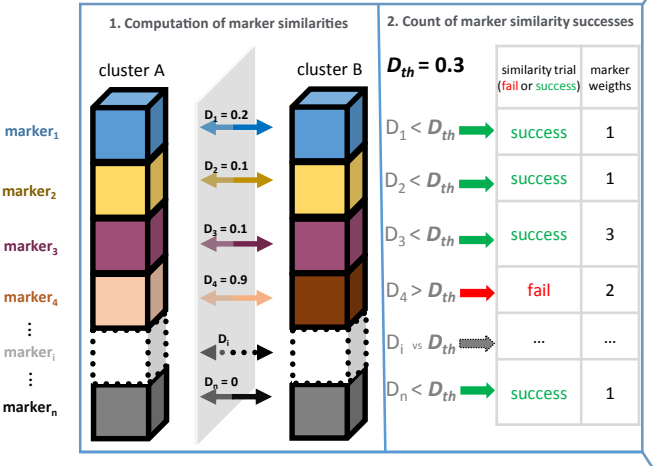

3. Aggregation of marker similarities using an exact binomial test

Firstly, the weighted number of success x and the weighted number of trials w are calculated using these two formulas:

$$x = \sum_{i=1}^{n} trail_i \times weigth_i \qquad w = \sum_{i=1}^{n} weigth_i$$

where

$trial_i$ is equal to **0** *iff* the trial fail for $marker_i$ or else is equal to **1** *iff* the trial success for $marker_i$ Those marker trials will then correspond to success or fail in a Bernoulli experiment.

Secondly, using x and w, an exact right-tailed binomial test is performed between the null hypothesis defined by the probability of success ***P*** (provided by the user) and the observed number of success x in the w number of trials. A low p-value can then be interpreted as a high proportion of marker successes corresponding to similar cell clusters.

Moreover, an aggregated similarity measure is computed using the following formula:

$$D = \sum_{i=1}^{n} D_i \times weigth_i$$

where

D_i correspond to the similarity measure for $marker_i$.