

Superficial level

1. Each voter votes by listing some or all of the candidates in order of preference.
2. Each voter is treated as having one vote, which is assigned initially to that voter's first-preference candidate.
3. A quota is calculated, as the minimum number of votes needed by a candidate to secure election. The quota will be reduced during the count, if the circumstances so dictate.
4. If a candidate receives more than a quota of votes, then that candidate is elected, and any surplus votes (over the quota) are transferred to other candidates in accordance with the later preferences of the relevant voters, as expressed on their ballot papers.
5. If, at any stage of the count, no surplus remains to be transferred, but the number of candidates elected so far falls short of the number of seats to be filled, then the candidate who currently has fewest votes is excluded. Votes assigned to that candidate are then transferred to other candidates in accordance with the later preferences of the relevant voters.

Detailed level

1. At each stage in the count, each candidate has an associated "keep value", which indicates the proportion of every vote, or part of a vote, received by that candidate which is kept, the remainder being transferred. Every candidate's keep value is initially set to 100%, and it does not change until that candidate is either elected (when it is reduced below 100%) or excluded (when it is permanently reset to 0%).
2. Each time the votes are counted, it is done in the following way: suppose that candidate A's keep value is 80%, candidate B's is 50%, candidate C's is 100% and candidate D's is 0%. Then a ballot paper listing DCAB (in that order) would be counted as:
 - nothing to D,
 - 100% of a vote to C,
 - nothing to A or B (because C has taken it all).

A ballot paper listing ABC (in that order) would be counted as:

- 80% of a vote to A,
- 10% of a vote to B (i.e. 50% of the remaining 20%),
- 10% of a vote to C (i.e. 100% of the remainder).

A ballot paper listing BDA (in that order) would be counted as:

- 50% of a vote to B,
- nothing to D,
- 40% of a vote to A (i.e. 80% of the remaining 50%),
- 10% of a vote regarded as non-transferable (because this remaining 10% has run off the end of the list).

3. After each count of the votes, the current quota is calculated as:
 - (number of votes currently assigned to candidates) divided by (number of seats + 1) where the number of votes currently assigned to candidates is the total number of votes cast, minus the current number non-transferable.
4. Any candidate who has more votes than the current quota is elected (if not already elected earlier) and given a new keep value, calculated as:
 - (candidate's current keep value) times (current quota) divided by (candidate's current votes).

Thus, for example, a candidate who has $\frac{4}{3}$ times the number of votes necessary for election needs to keep only $\frac{3}{4}$ of what that candidate previously kept.

5. After every such change, to one or more candidates, the votes are recounted using the new keep values. This has the effect of transferring the surplus votes of all the elected candidates in accordance with the voters' later preferences. However, it does not necessarily remove all surpluses in a single step, since some of A's votes may go to B, but some of B's may go to A simultaneously. This will leave each of them with a surplus, though the total surplus will be smaller than before. It is necessary to repeat steps 3, 4 and 5 until, for all practical purposes, no surplus remains. For example, in some existing implementations, this is taken to be when the total remaining surplus is less than $\frac{1}{10000}$ of a vote.
6. If, at the end of any count of the votes, no surplus remains, but the number of candidates elected so far falls short of the number of seats to be filled, then the candidate who currently has fewest votes is excluded, and that candidate's keep value is reset to 0%. The votes are then recounted. (If an exclusion is necessary and two or more candidates have equal fewest votes, then a tie-breaking method is needed to decide which one to exclude).
7. It is usually clear before all surpluses are transferred that an exclusion will be required, and which candidate it must be. In such case the exclusion may be made at once, giving a short cut which cannot change the final result.
8. The number of decimal places used should be great enough that there is virtual certainty that increasing the precision would not change the result. In some existing implementations the precision is 9 decimal digits after the point.

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