

## Election Method

1. An *election* is a method of choosing one from several alternatives. These may be individuals (candidates) or specific policies. An *election* can also be used to determine a ranking of all the alternatives.
2. An election chooses the result based on the preferences of individuals (voters) in a specified set (the electorate).
3. Each voter in an election has a rank ordering of all the candidates, their *preference ranking*. Such a ranking is complete (includes all candidates), transitive (if A is preferred to B and B is preferred to C, then A is preferred to C), and strict (no ties, for every pair of candidates, one is preferred over the other).
4. A *voter profile* is a set of preference rankings for all voters in the electorate.
5. An *election outcome* is a ranking of the candidates that is complete and transitive, but may include ties.
6. An *election method*,  $em$ , is a mapping from the set of all possible voter profiles to the set of election outcomes. That is, for any voter profile  $P$ ,  $em(P)$  is the outcome, a valid election outcome.

