TEK5010 Multiagent systems

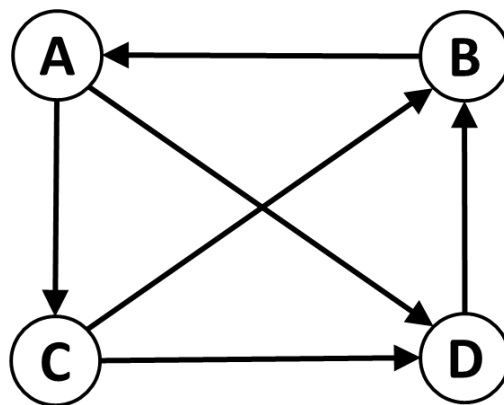Lecture 9: Voting

Exercise: Majority graph

Question 1

N agents are voting on deciding the sequence of selecting between 4 outcomes as reflected in the given majority graph:

a) What does a majority graph describe?

b) Is there a clear winner here?

c) Are there any outcomes that can't be a winner?

d) Could you write up all pairwise elections representing the given majority graph?

e) For each of the possible winner candidates give an example of a linear agenda that would lead to the respective candidate winning.

f) What edges in the majority graph must be flipped in order to have a Condorcet winner?

g) What is the best outcome in terms of the slater rule? Why is the slater ranking problematic to use in the general case? In terms of the analysis above, in which sequence should the agents select the 4 outcomes?