

Model description:

A software development ecosystem is modelled as a something like a “caveman graph”. The team leads are arranged in a ring, and each team is linked to a team lead. Initially no edges exist among any of the vertices.

Static structural parameters:

T: No of teams

N: No of developers per team

Dynamic vertex parameters:

f_c: The fraction of existing developers converting from novice to experienced in each time step.

f_n: The number of new developers (as a fraction of N) added to each team in each time step.

Dynamic edge parameters:

p_new: Probability of two novice developers connecting in each time step, i.e. if w is the maximum number of edges possible between two existing novice developers in that time step, $p_{\text{new}} * w$ such edges being added at random.

p_fresh: Probability of one novice developer and one experienced developer connecting in each time step, i.e. if x is the maximum number of edges possible between one novice developer and one experienced developer in that time step, $p_{\text{fresh}} * x$ such edges being added at random.

p_seasoned: Probability of two experienced developers connecting in each time step, i.e. if y is the maximum number of edges possible between two experienced developers in that time step, $p_{\text{seasoned}} * y$ such edges being added at random.

p_repeat: Probability of two experienced developers who have been connected before, connecting again in the current time step, i.e. if z is the maximum number of edges possible between two such developers in the time step, $p_{\text{repeat}} * z$ such edges being added at random.