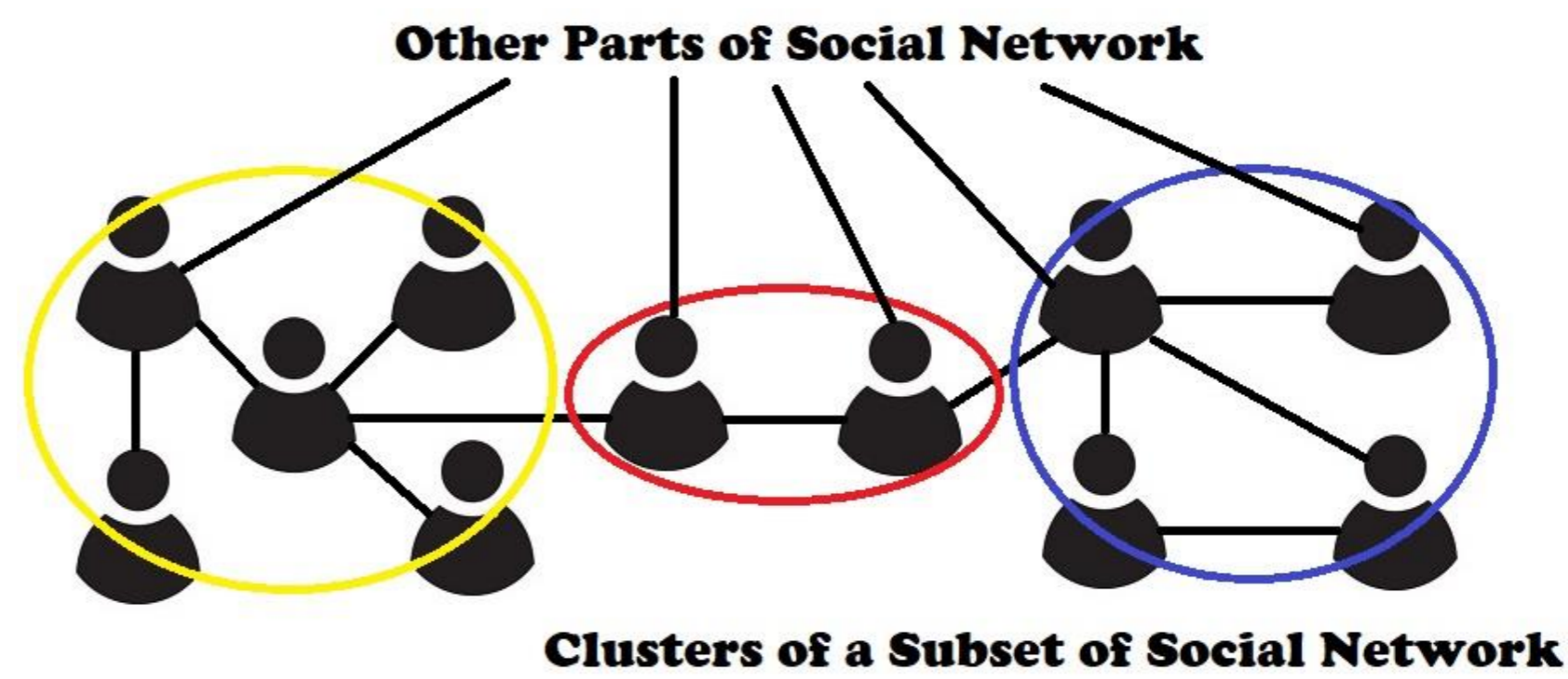
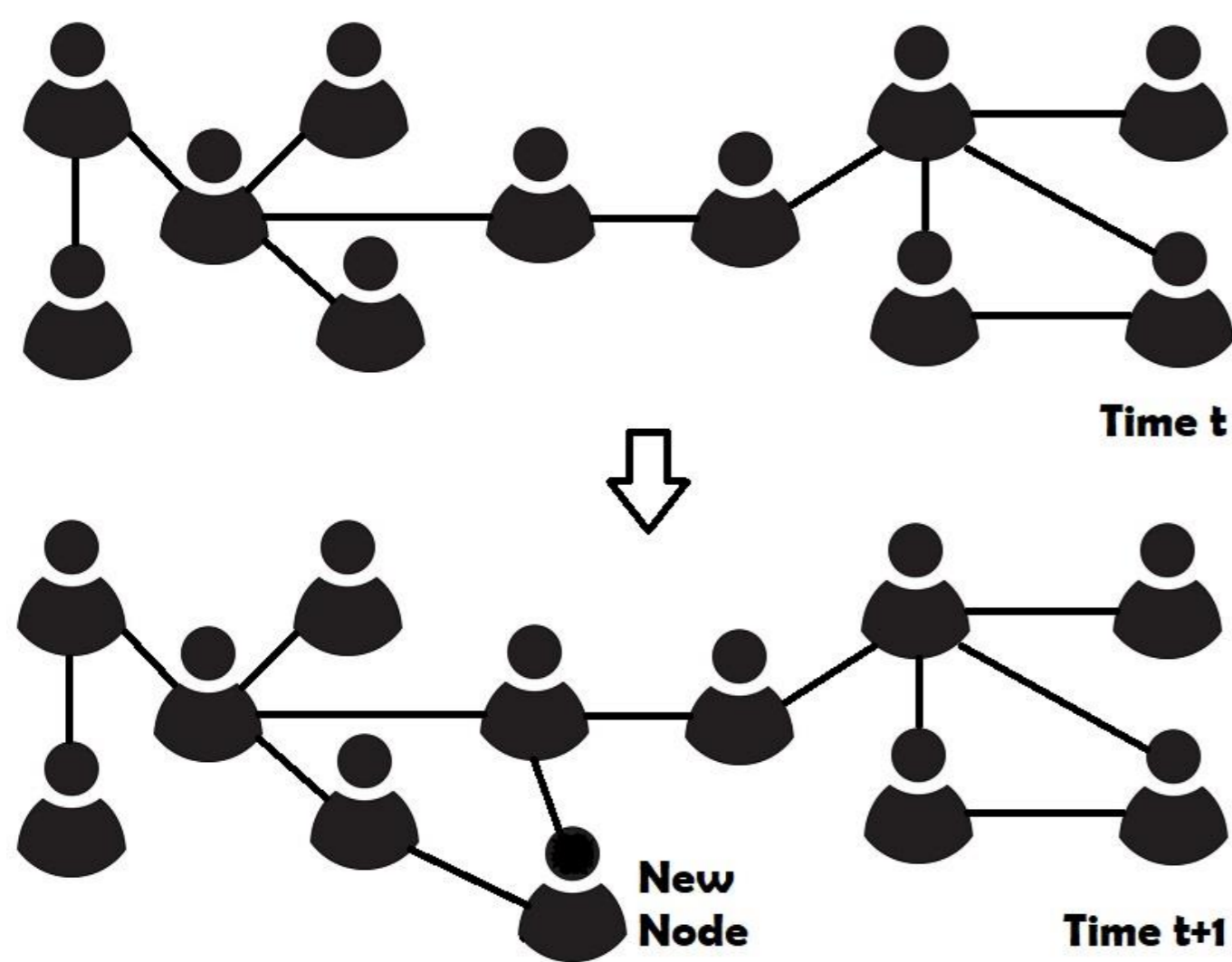




Dynamic Clustering for Social Network Based on Evolutionary Computation

Student: Fariz Cheang Bin Mohd Khairi

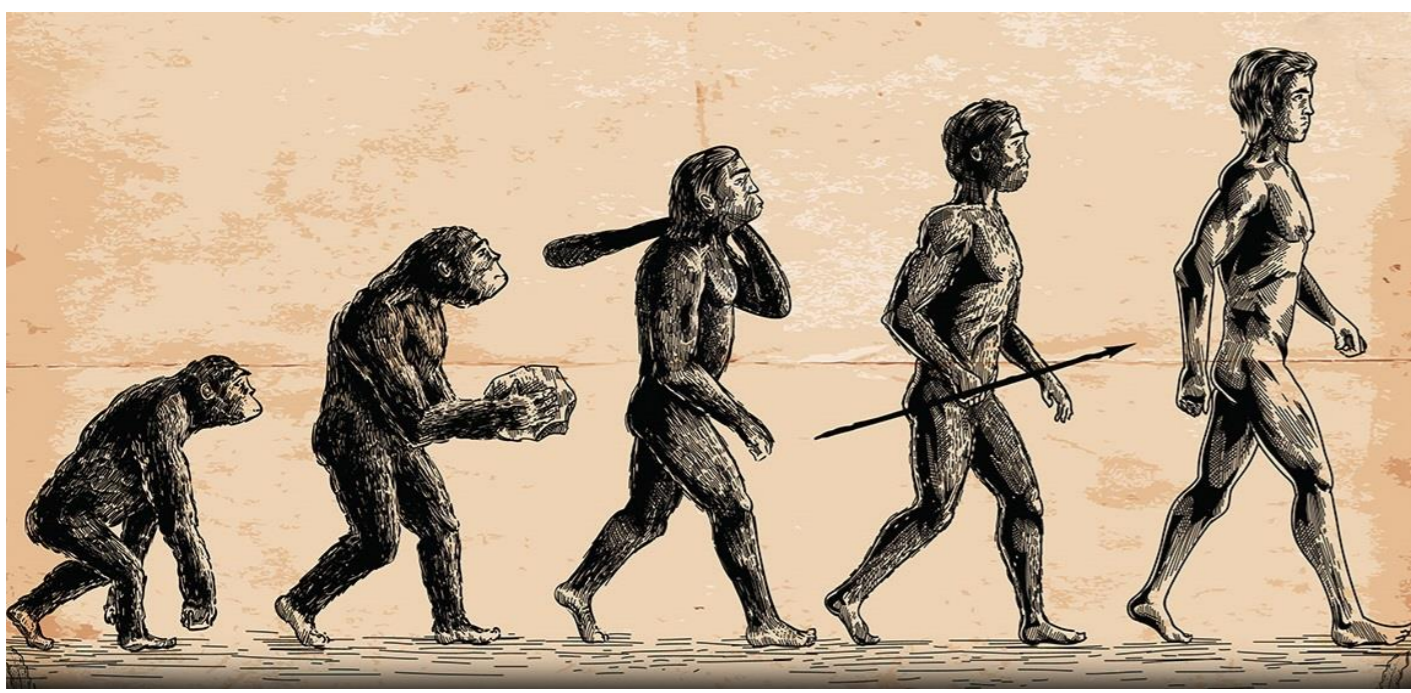
Supervisor: Asst Prof Mahardhika Pratama



Social networks are dynamic and time-evolving.

Current clustering methods focuses on either a subset of the social network or the full social network.

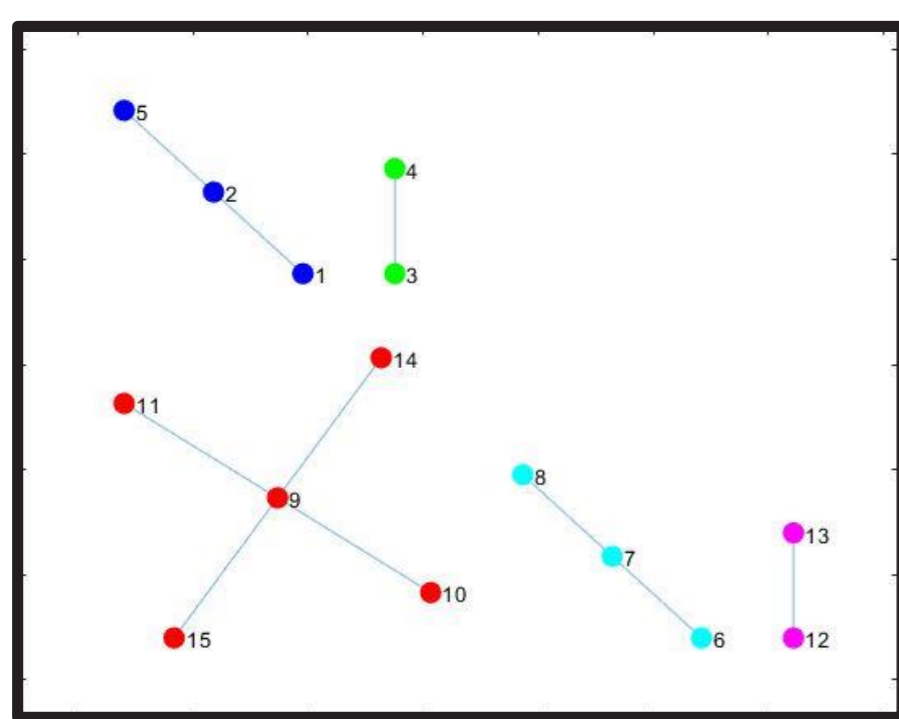
Since social networks are dynamic in nature, dynamic network clustering is explored and incorporated with Evolutionary Computation.



Evolutionary Computation is based on Darwin's Theory of Evolution.

Genetic Algorithm is most popular among the evolutionary algorithms.

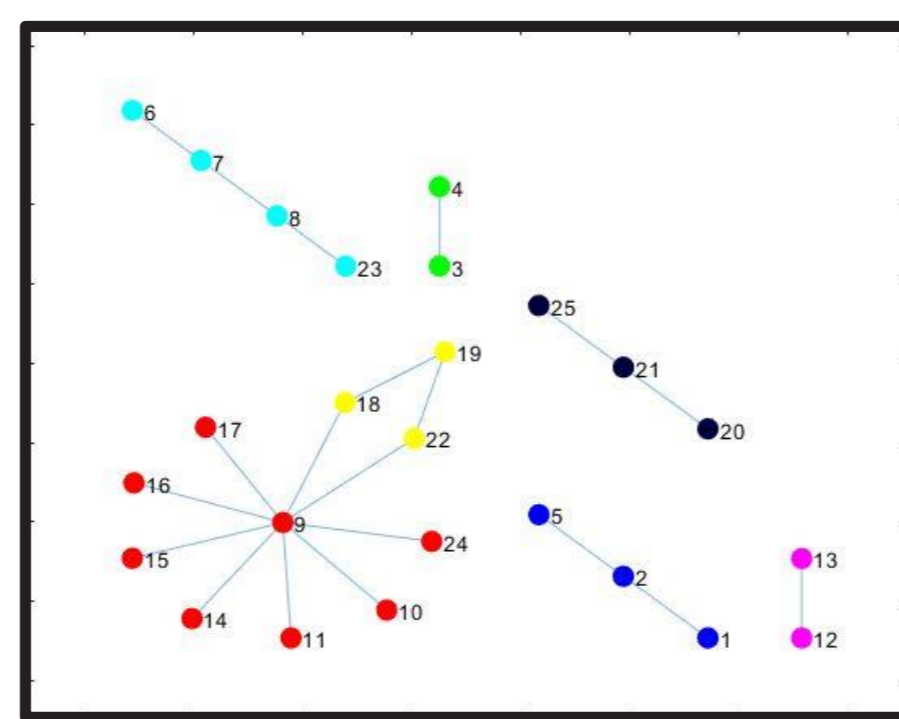
Modularity is used as an evaluation criterion for the fitness of Genetic Algorithm in order to get the optimal clusters.



Time t+1

Clusters : 5

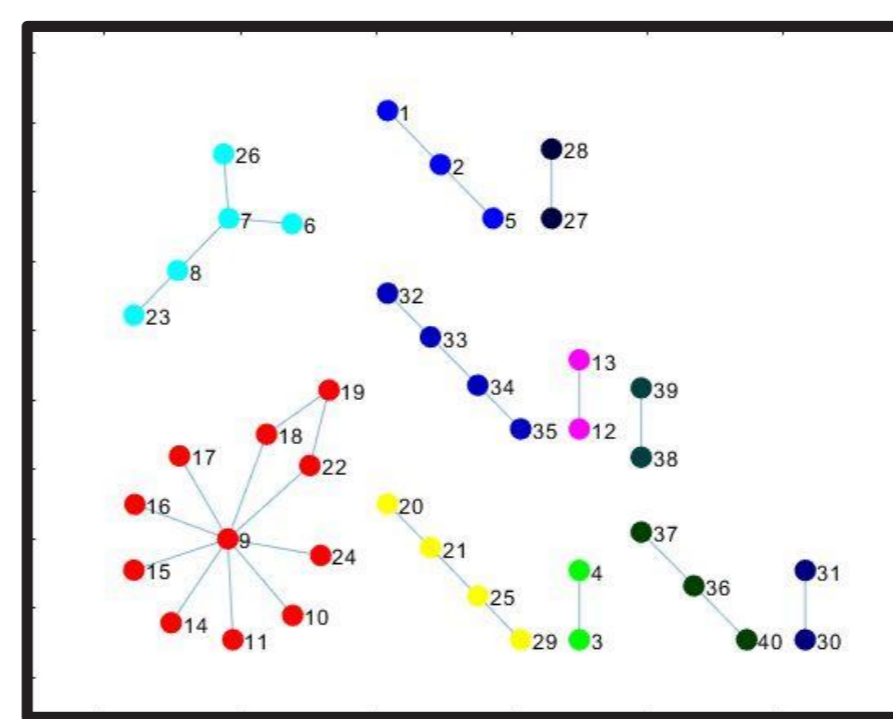
Modularity: 0.74



Time t+2

Clusters : 7

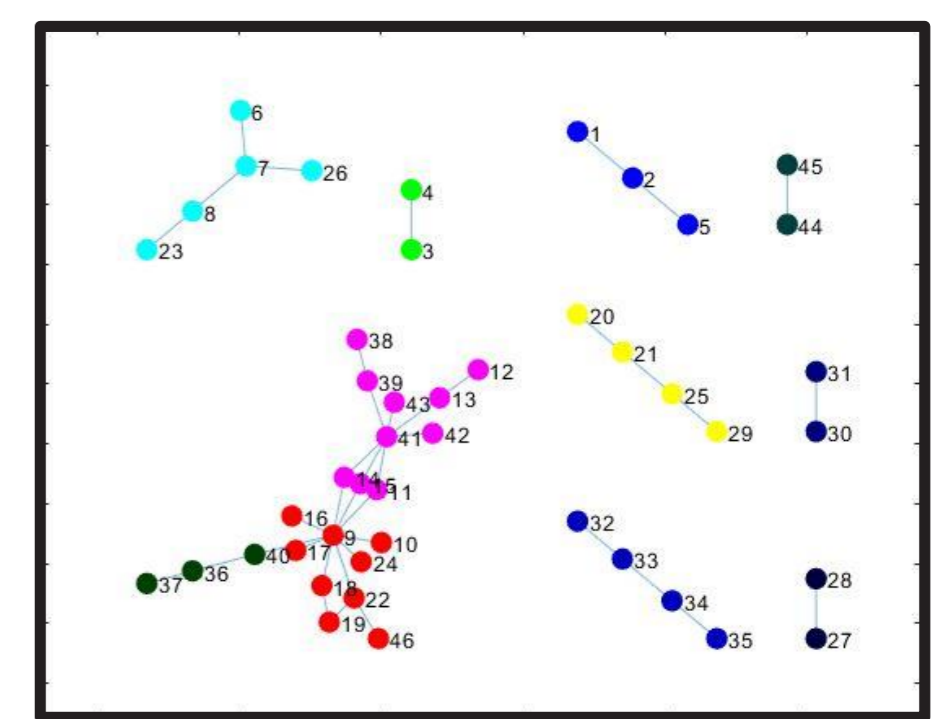
Modularity: 0.67



Time t+3

Clusters : 11

Modularity: 0.8133



Time t+4

Clusters : 11

Modularity: 0.72531

This network [2] depict the clusters where users would most probably have conversation with each other.

The number of clusters may increase or decrease depending on the optimal modularity.

References (for images and dataset)

- M. Ghare, "Charles Darwin: An Introduction to the Theory of Evolution," 22 February 2018. [Online]. Available: <https://biologywise.com/charles-darwin-theory-of-evolution>.
- P. Panzarasa, T. Opsahl and K. M. Carley, "Patterns and dynamics of users' behaviour and interaction: Network analysis of an online community.," Journal of the American Society for Information Science and Technology 60.5 (2009): 911-932, 2009.