

Math 280: Graph Theory
Instructor: David Zureick-Brown (“DZB”)
GODY’s! (Graph Of The Day)

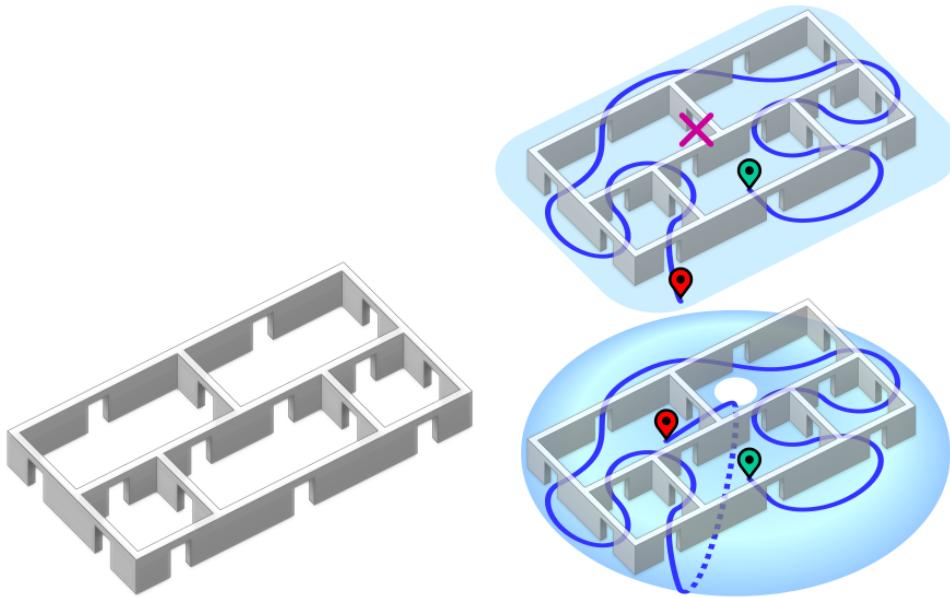
Last updated: September 20, 2024

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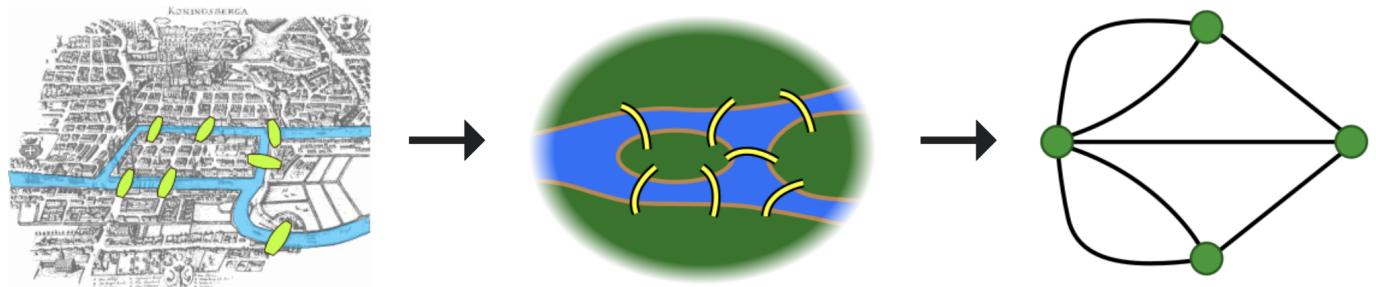
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1 Puzzle DZB couldn't solve in middle school

https://en.wikipedia.org/wiki/Five-room_puzzle



https://www.archimedes-lab.org/How_to_Solve/5_rooms.html

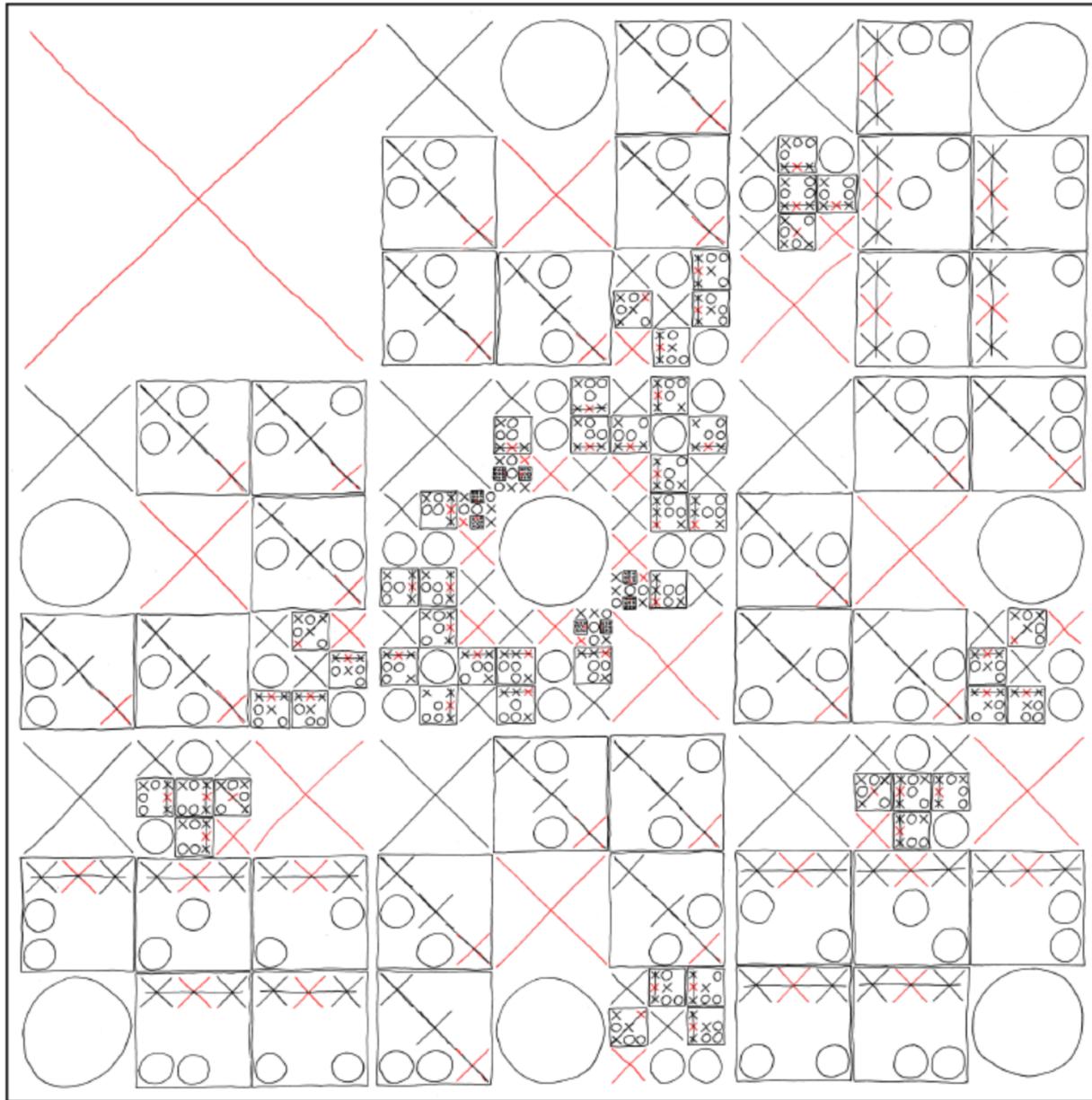


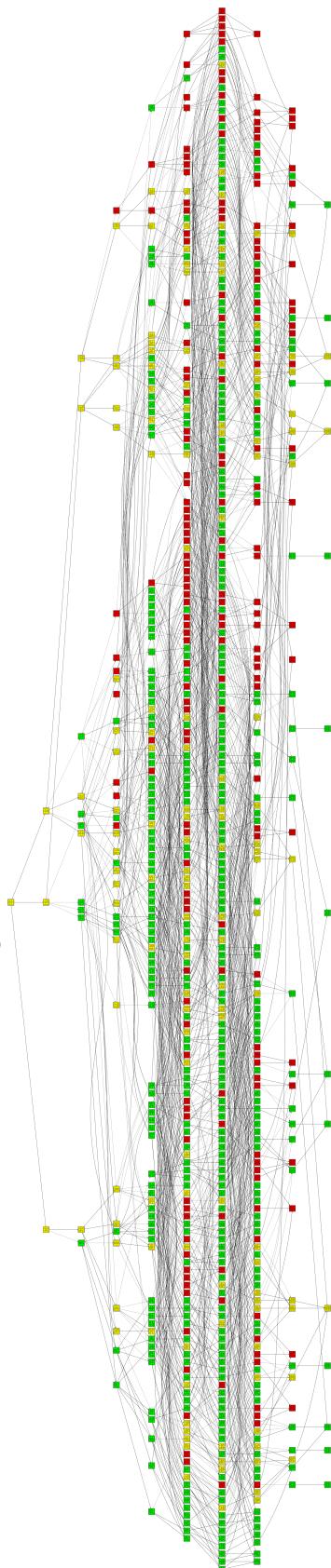
https://en.wikipedia.org/wiki/Seven_Bridges_of_K%C3%B6nigsberg



2 Games

<https://xkcd.com/832/>

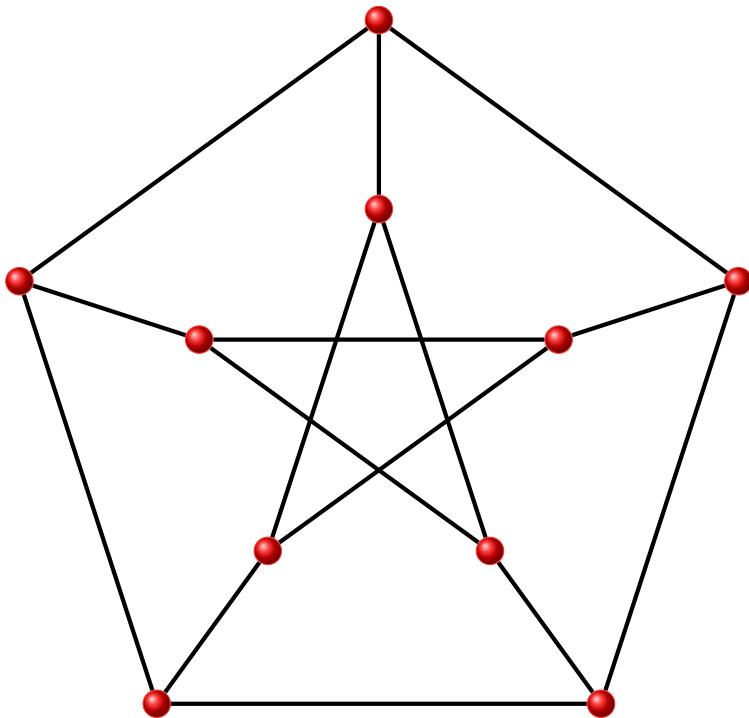




<https://gfredericks.com/blog/76>

3 Petersen graph

“The Petersen graph is undoubtably the most important graph in graph theory. It’s going to be my next tattoo, in fact.” - [Bill Kay](#), Pacific Northwest National Laboratory

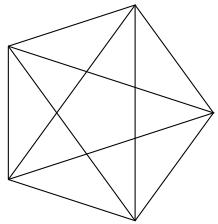


https://en.wikipedia.org/wiki/Petersen_graph

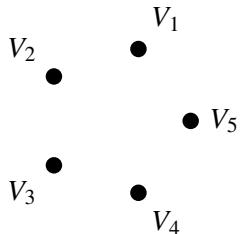


4 Common graphs.

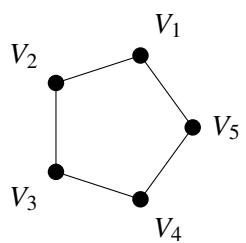
K_n complete graph.



E_n empty graph.



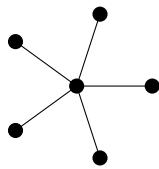
C_n cycle graph.



P_n path graph.



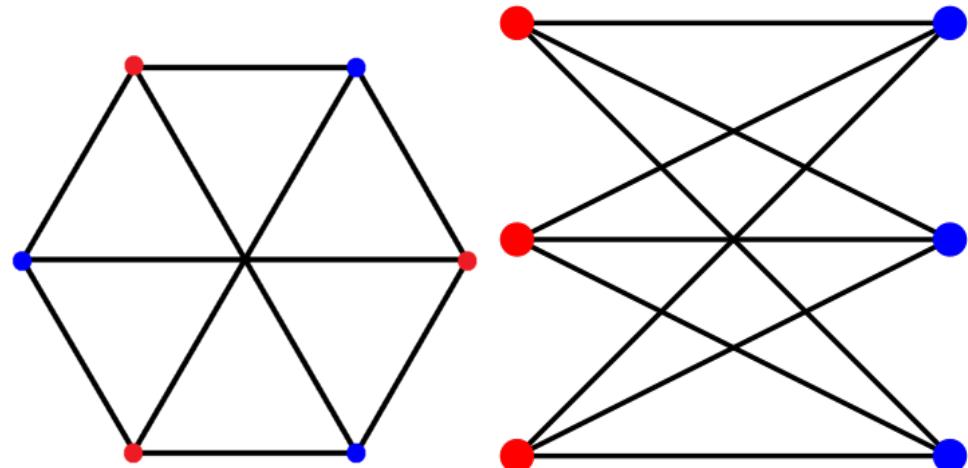
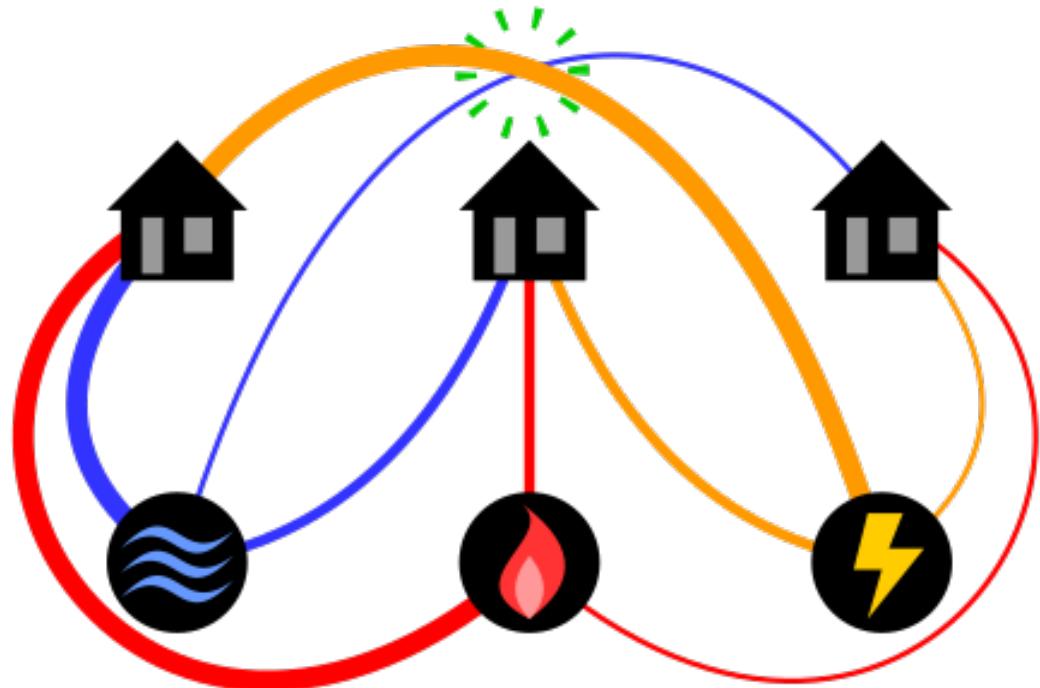
S_n star graph.





5 Three utilities problem

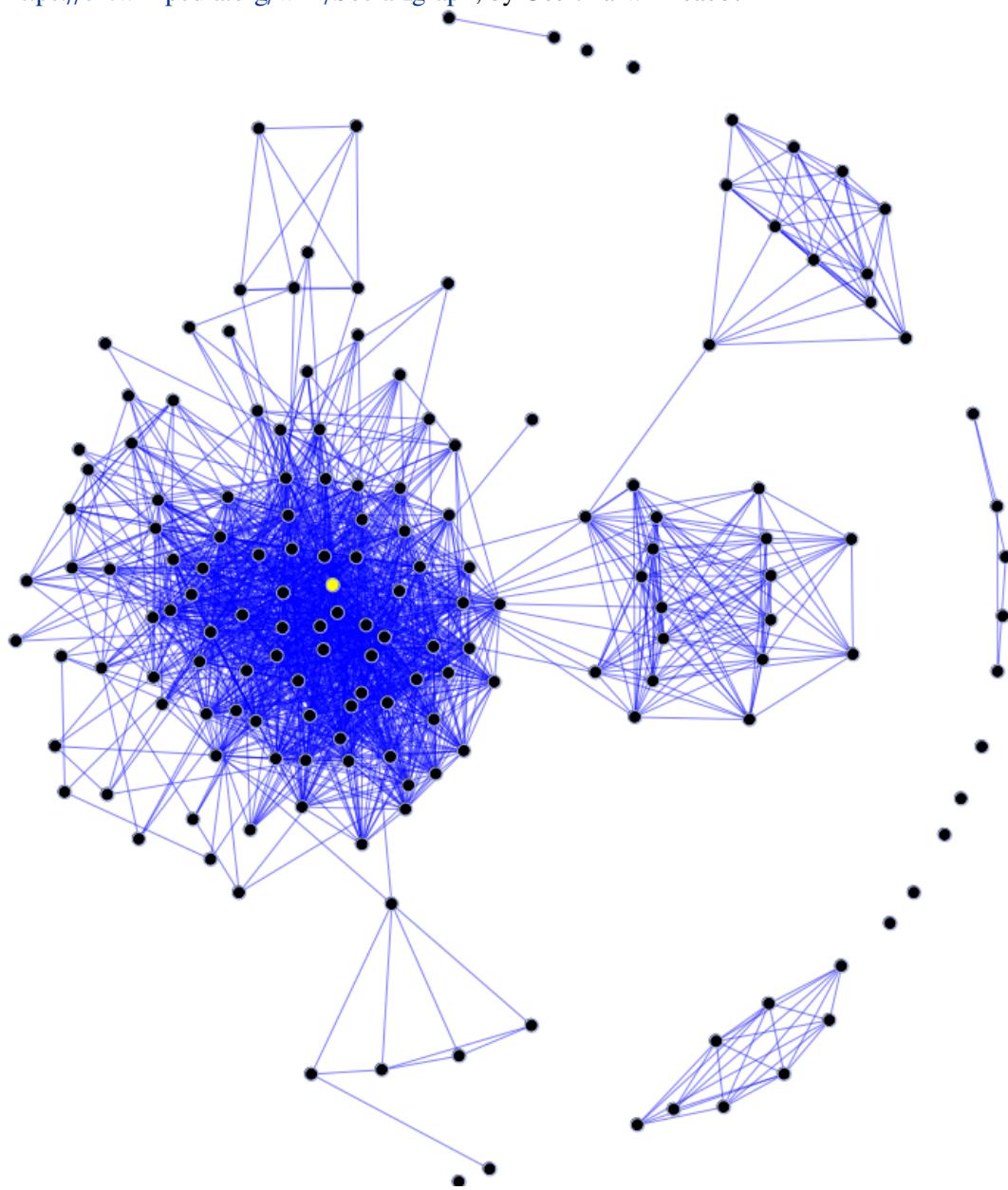
https://en.wikipedia.org/wiki/Three_utilities_problem





6 Social network graphs

https://en.wikipedia.org/wiki/Social_graph, by User:DarwinPeacock

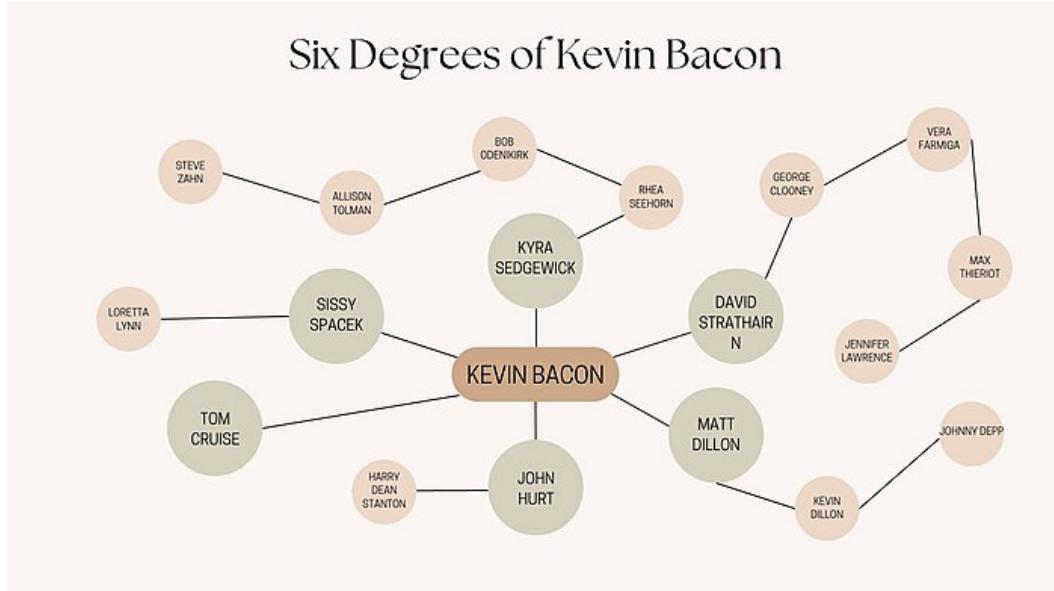




Facebook reports that the graph has diameter 41

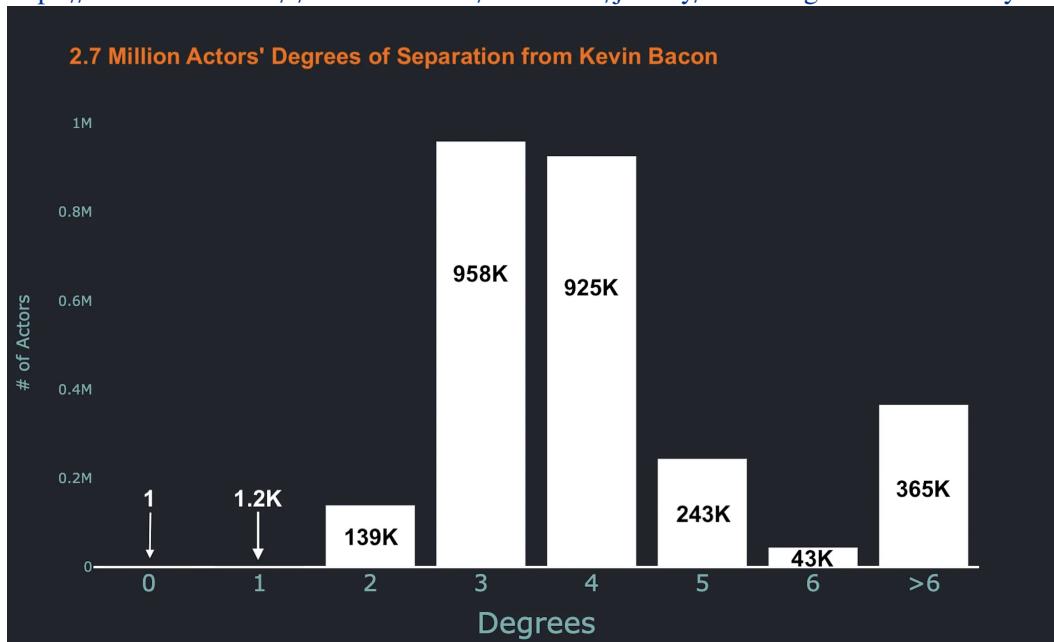
<https://pages.di.unipi.it/marino/diameter.pdf>

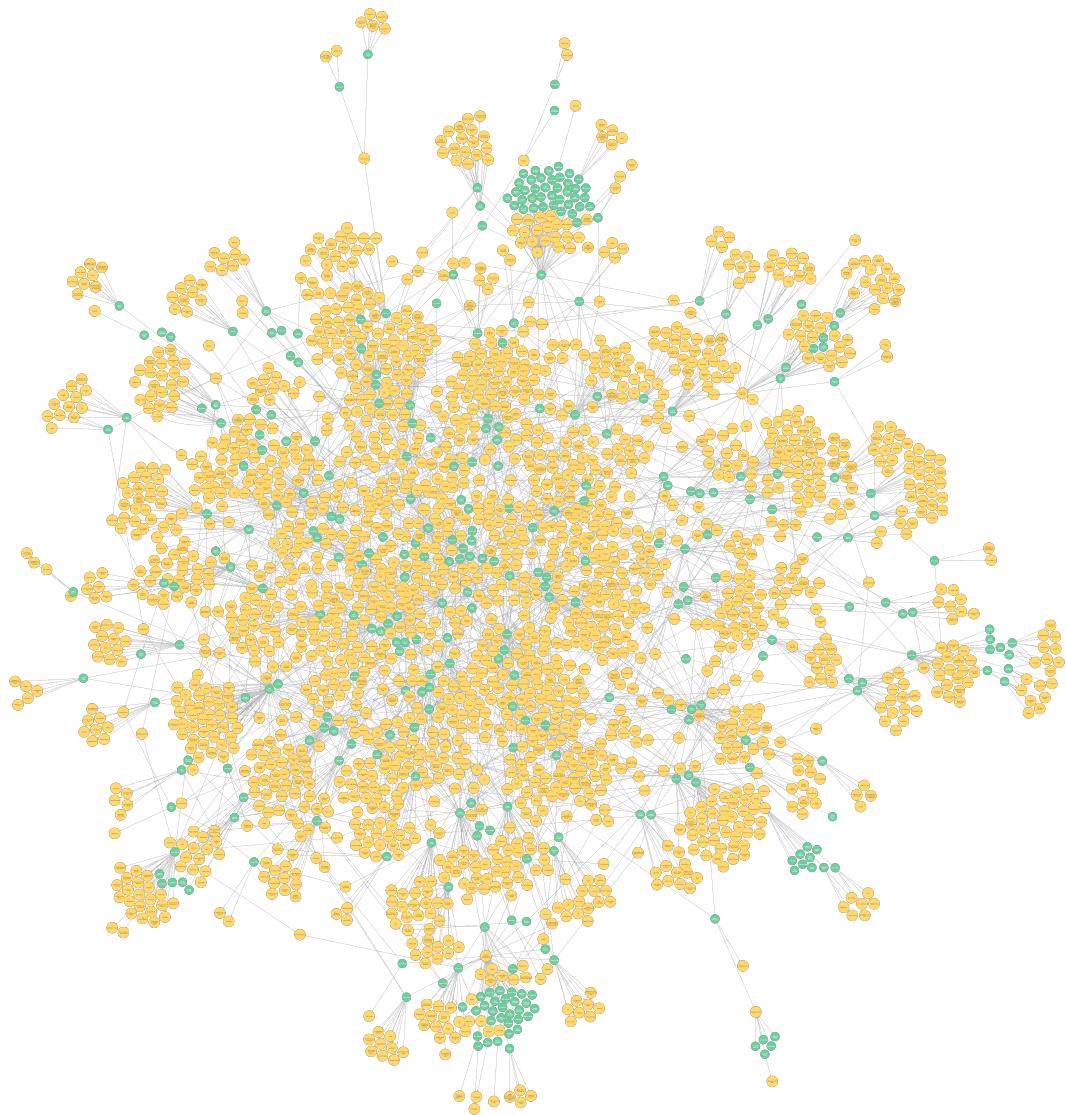
https://en.wikipedia.org/wiki/Six_Degrees_of_Kevin_Bacon



<https://oracleofbacon.org/graph.php>

https://www.reddit.com/r/dataisbeautiful/comments/j6houy/collecting_data_from_every_movie_on_imdb_to/

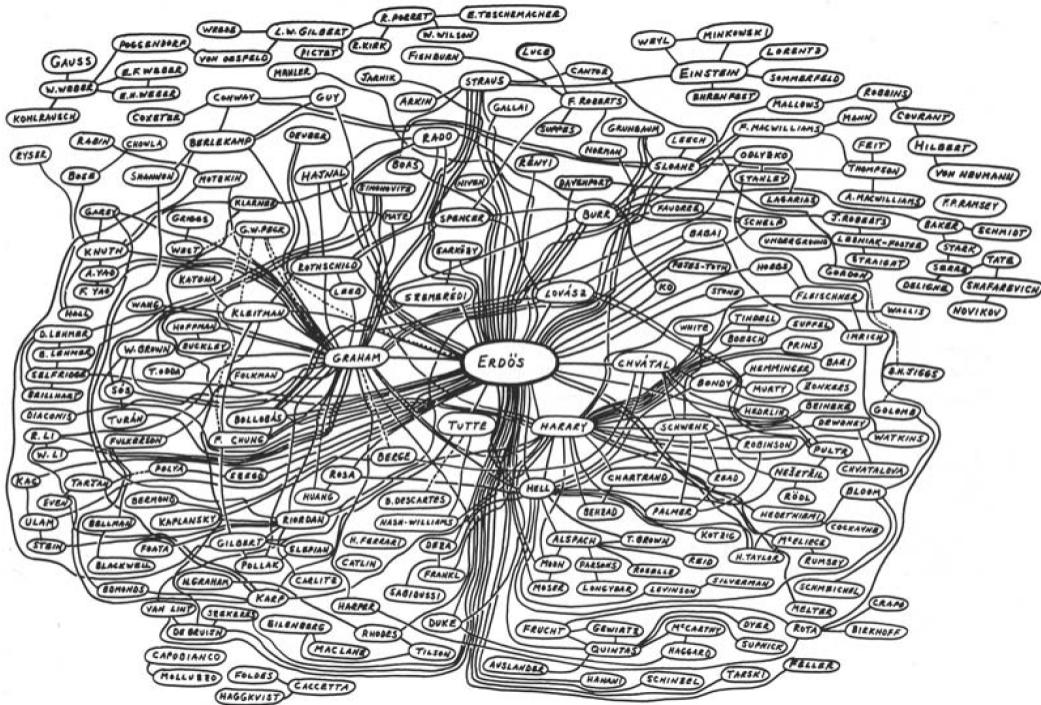


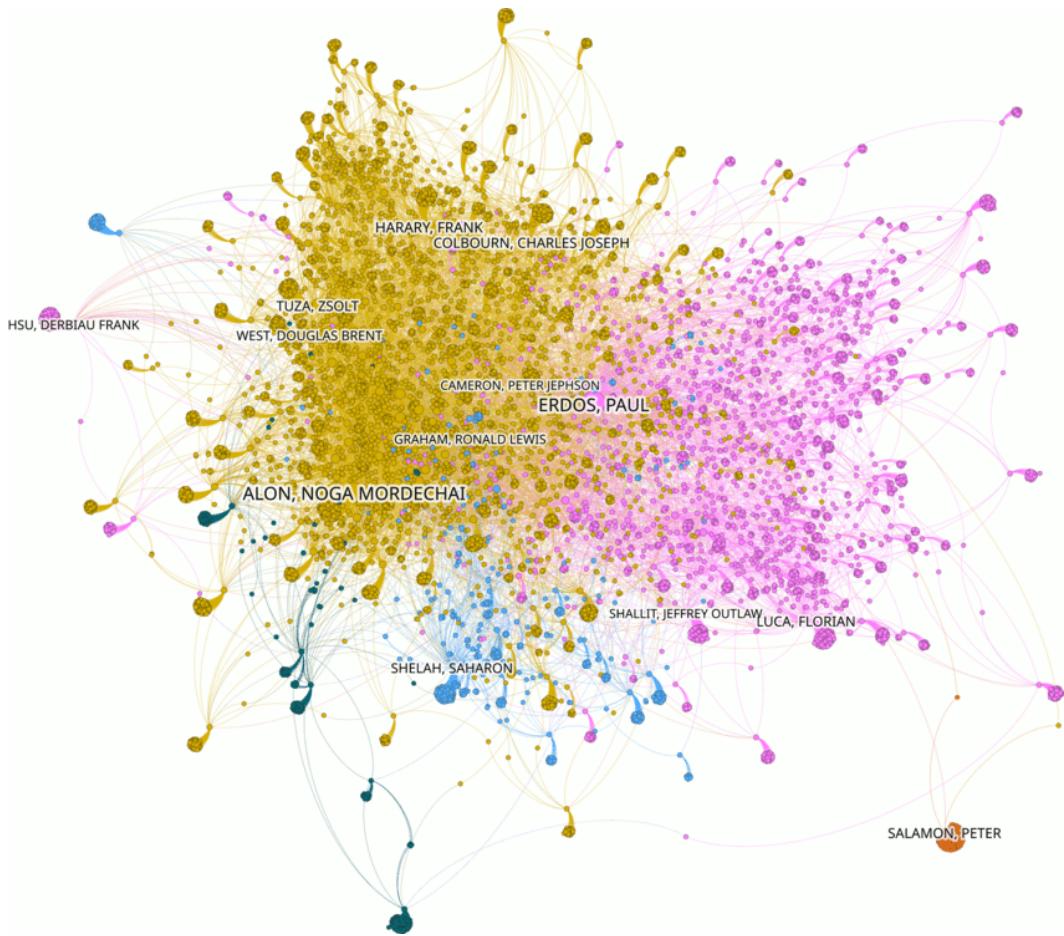


https://www.flerlagetwins.com/2017/04/six-degrees-of-kevin-bacon-with-graph_37.html

https://en.wikipedia.org/wiki/Erd%C5%91s_number

<https://mathscinet.ams.org/mathscinet/freetools/collab-dist?source=964616&target=189017>





https://www.researchgate.net/figure/Co-authorship-network-of-mathematicians-with-an-Erdos-number-of-at-most_fig1_352562021



7 Family tree. Math Geneology. Decision tree. Brackets.

Math Bracket.

Serre has a book, trees.