

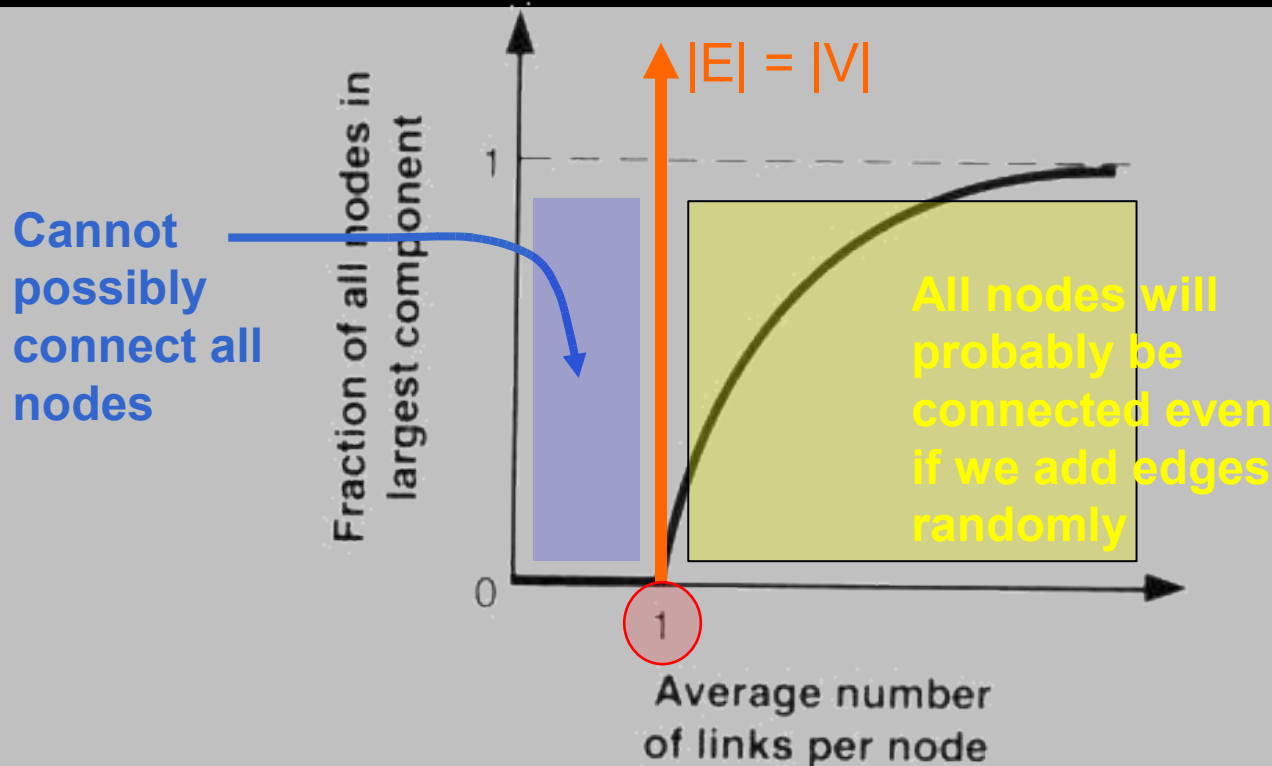
CS-103 Announcements

- **Lab Quiz solutions posted**
- **This week:**
 - **Six Degrees Ch 5 (Searching networks)**
 - **Web 101 Ch 5.1-5.2 (HTML image maps)**

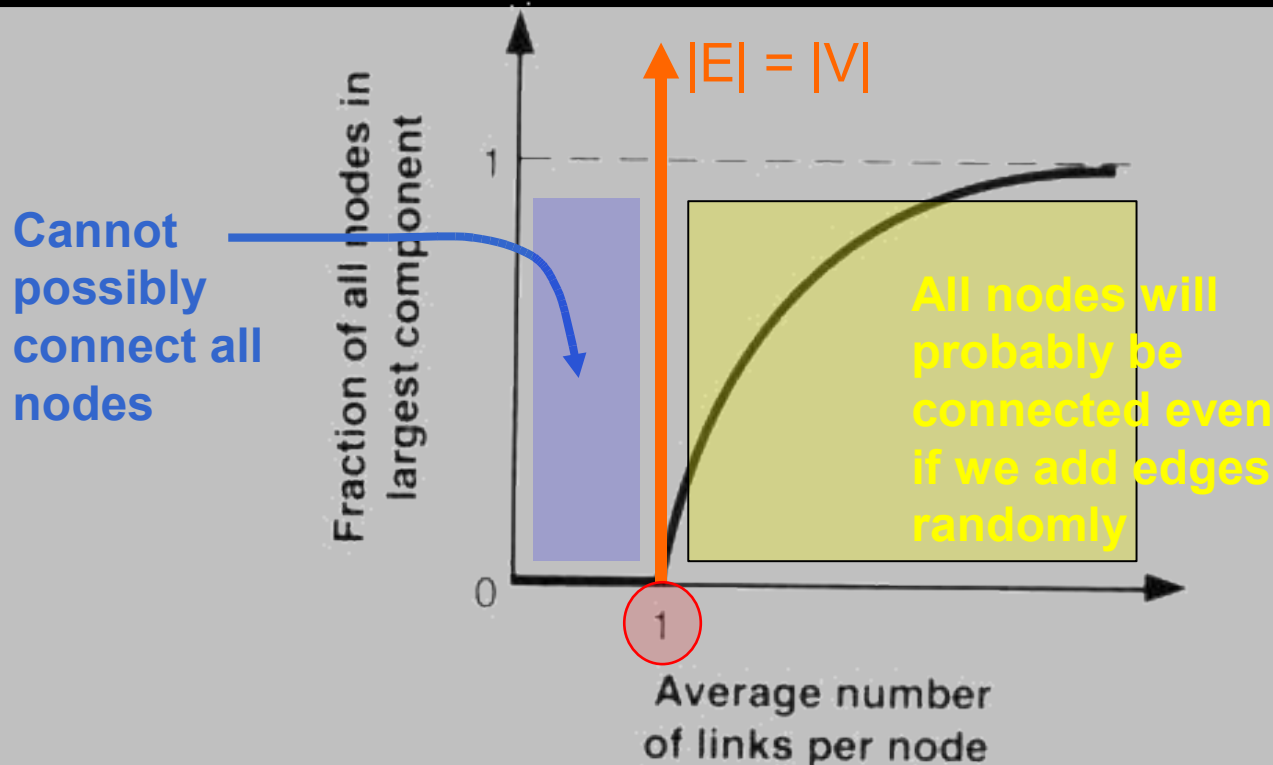
HW6: Due 9pm Thurs 10/19

1. If you don't already have a link to another blog in the sidebar of your blog, add at least one
2. Get at least one classmate to add a link from his/her sidebar to your blog
3. Write a blog post thanking that classmate for linking to your blog
4. Click on the link that goes from your classmate's sidebar to your blog. (You do not need to write or print anything about this part; your click will feed into your Google Analytics database for later.)

How does size of largest connected component grow as we add more random edges to graph?



What if we don't add edges at random?
How will size of largest connected component grow?



How many vertices will be in
largest connected component of
blog network?

Adjacency matrix

- We can represent any graph as a square matrix of $|V|$ rows and $|V|$ columns

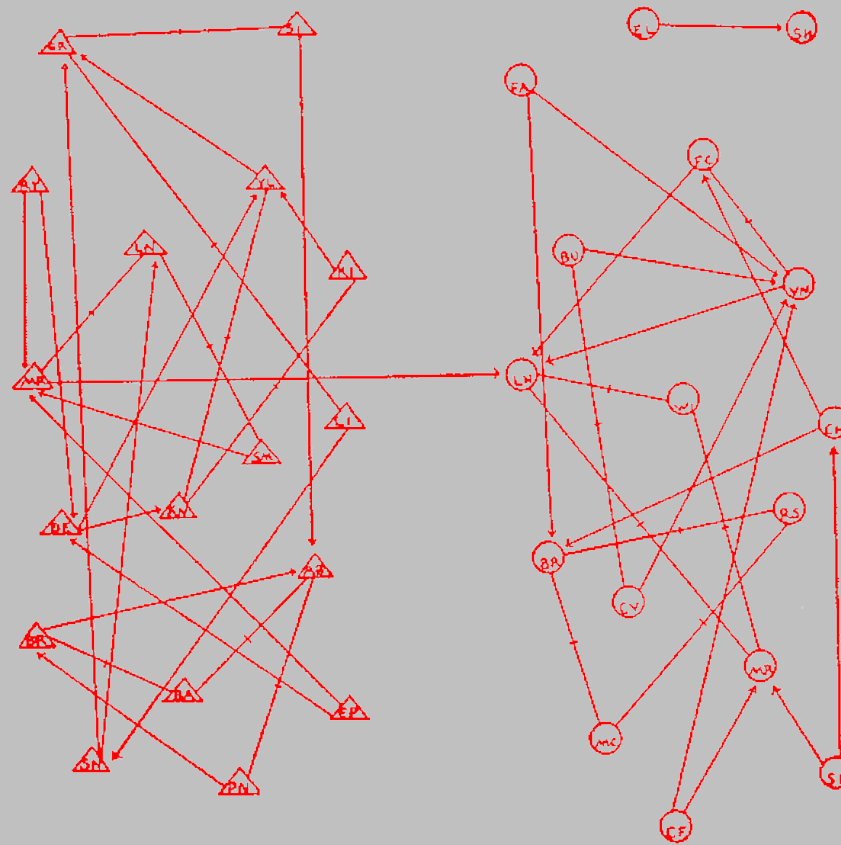
End of edge

	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Start of edge

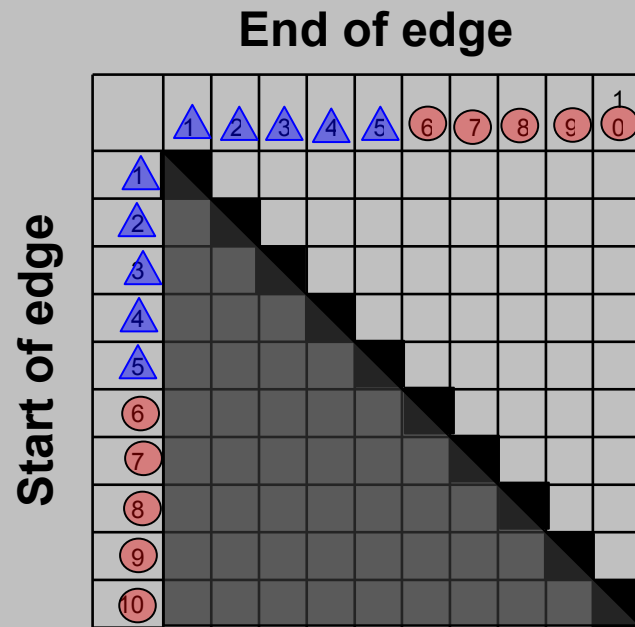
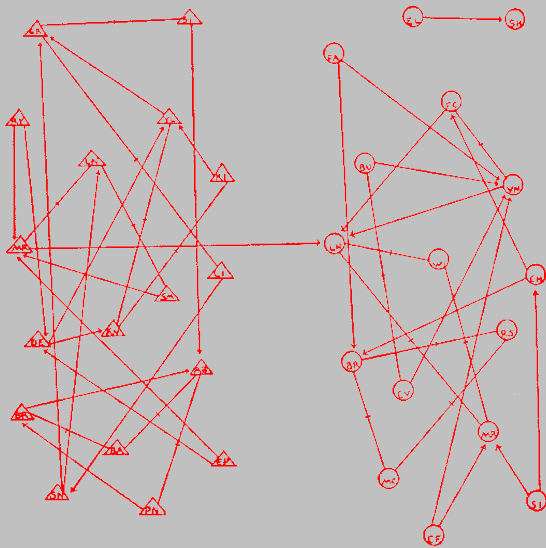
- The value stored in row i , column j is $A_{i,j}$
- Q: What value should we put in $A_{2,3}$?

Recall clustering



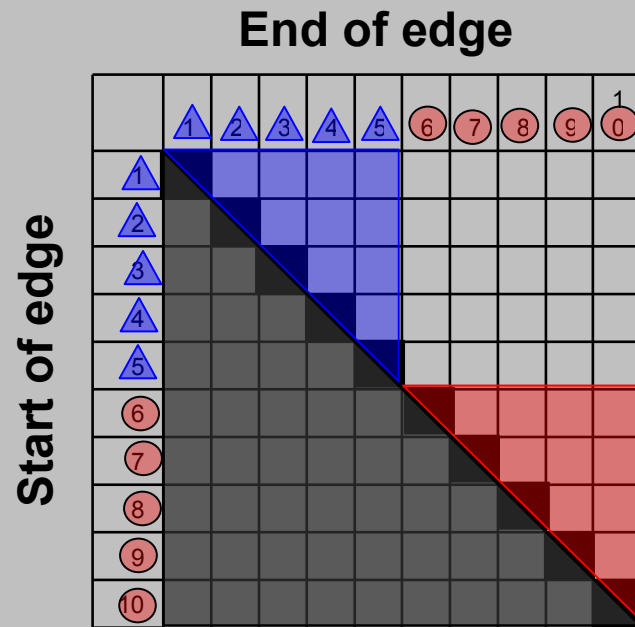
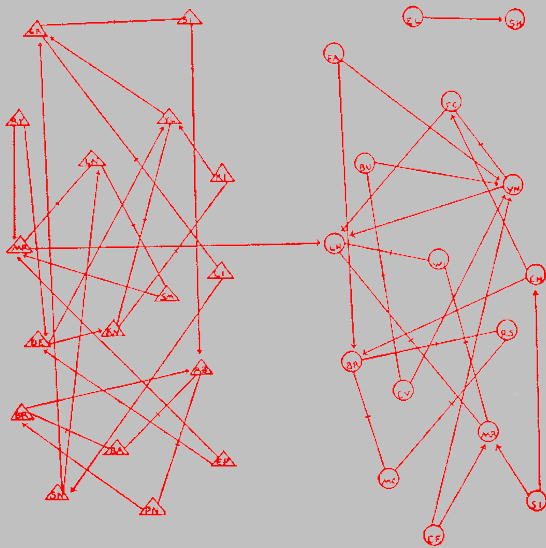
Density & Clustering

- How does this graph look in an adjacency matrix?



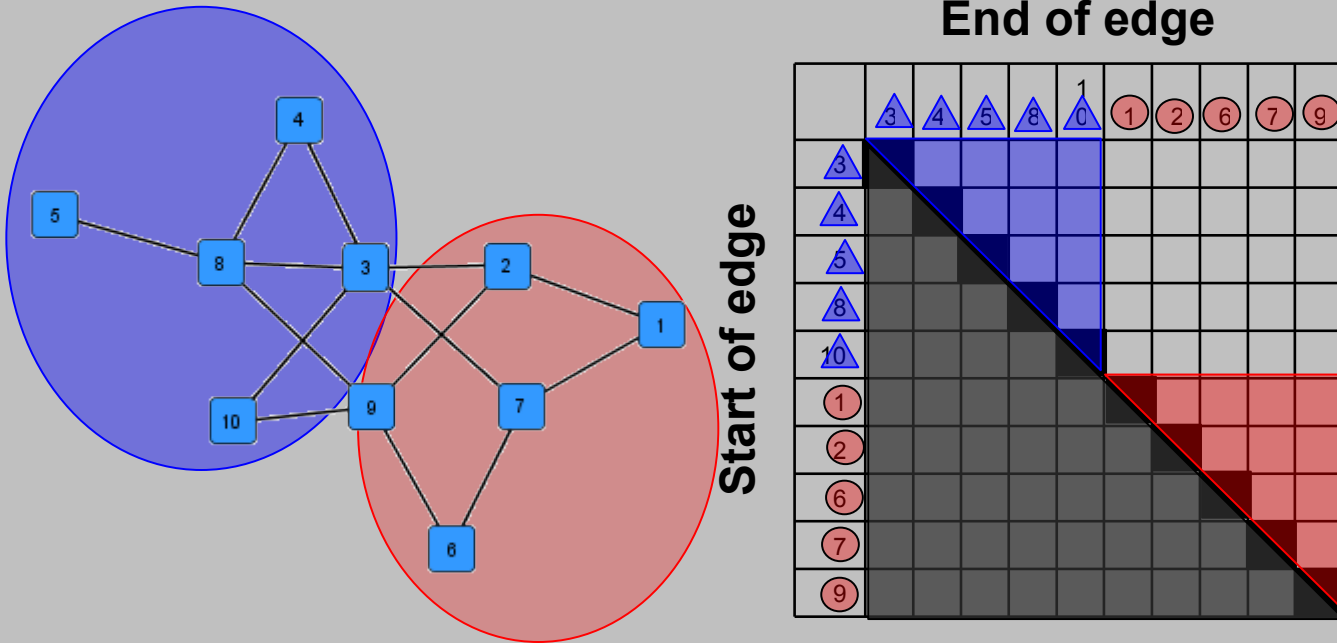
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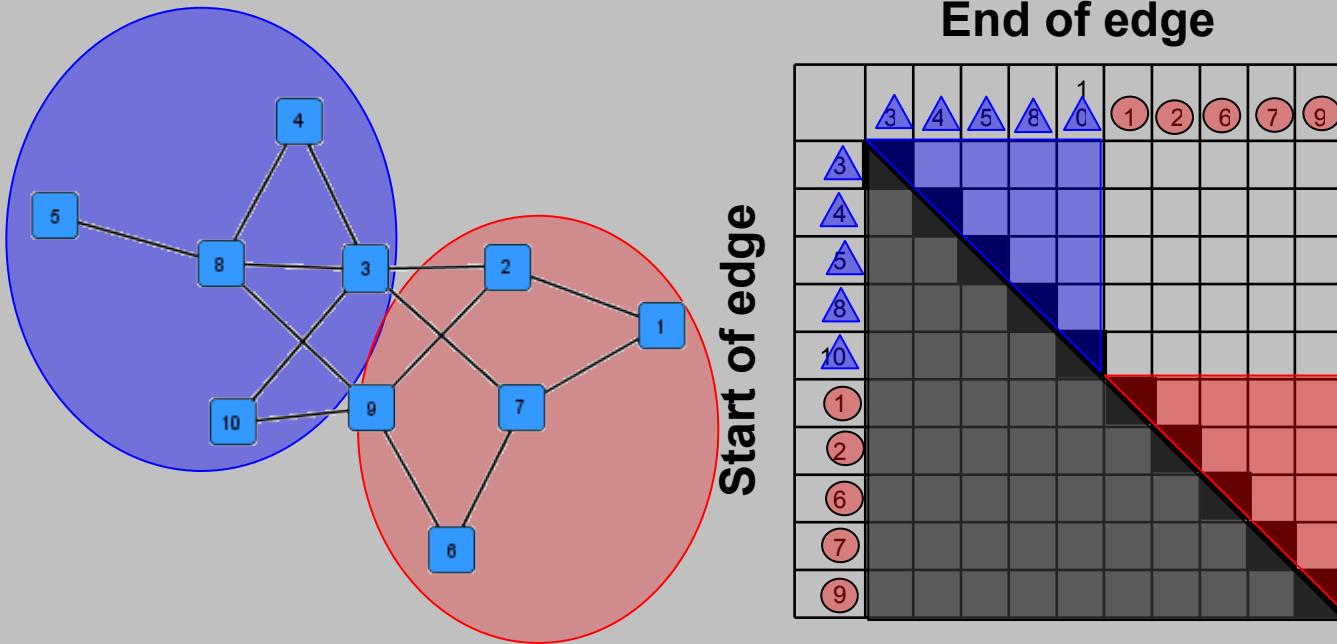
Modularity

- Good: edges in blue cells, edges in red cells



Modularity

- Bad: edges outside of blue and red cells



Centrality: No single clear definition

- Which node is most central in this network?

