

Knight Foundation School of computing and Information Sciences

Analyzing Biological Networks Informap

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- Informap is simply a camera in the network, which monitors, analyzes, and mines network data and traffic sources. Using the human visual perception system, the network data is displayed graphically, and the network structure data can be quickly and intuitively explained and overviewed. value information.

Informap specifically refers to the collection and in-depth detection of network traffic as the basic means, the integration of various network processing and information processing technologies, the physical link, logical topology, operation quality, protocol standards, traffic content, user information, bearer Business monitoring, identification, statistics, display, management and control, and then big data analysis and mining, to achieve a class of application systems such as network management, information security, and business intelligence.

Four basic principles of network data visualization: node location; edge representation; relative size; interactive elements.

Nodes are entities of the network.

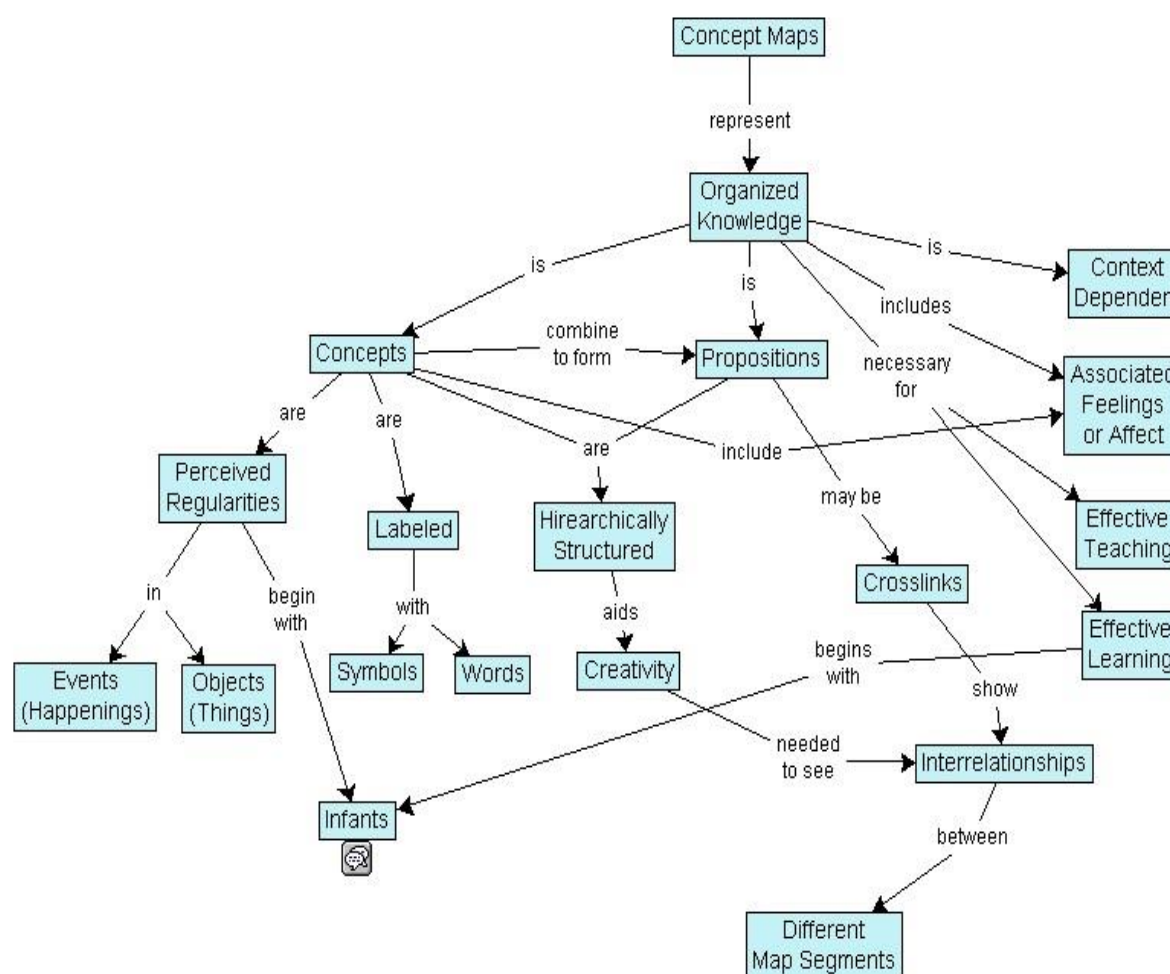
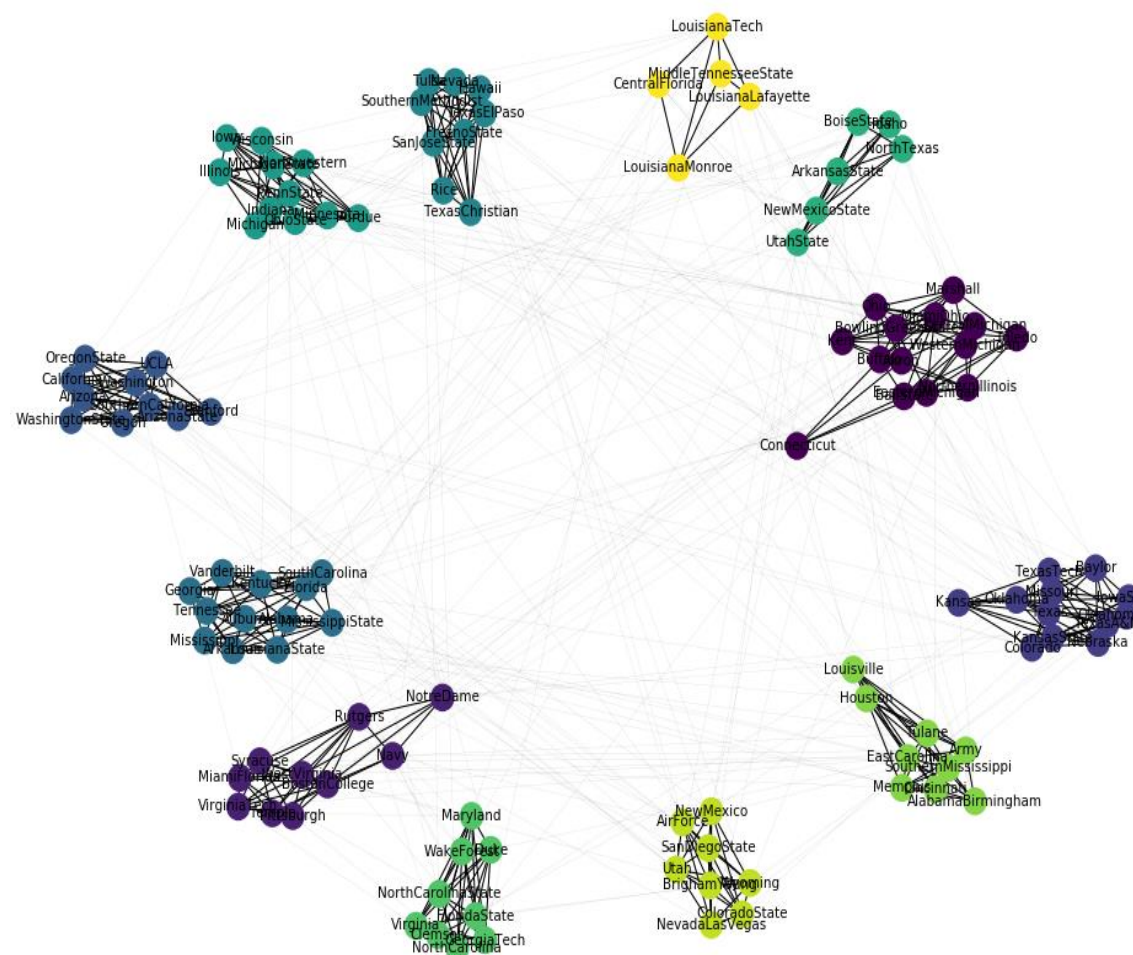
Relationships between nodes require an edge.

Networks may contain very large datasets that cannot always be described by simple one-to-one relationships, and considering the more dimensions involved can help designers describe complex relationships through visual methods.

Interactive elements, if you are using software to create network diagrams - you can also choose to allow users to create their own views in your visualization. Before you get into the details of the visualization, it's best to determine what level of interaction to employ to bring the most value to the user.

We also considered community-to-community relationships. Does it have anything to do with weight? Here, I added a pattern that confirms the relationship around the main image with higher weight. If the weights are the same, the sum is a parallel communication channel, otherwise it is the main line dominated by the party with the higher weight.

```
V = [node for node in G.nodes()]
com_dict = {node:com for node, com in zip(V, gn_com)}
k = max(com_dict.values()) + 1
com = [[V[i] for i in range(G.number_of_nodes()) if gn_com[i] == j] for j in range(k)]
```



w	j	No	11	467	No Balance	No main
w	r	No	11	300	No Balance	No main
w	p	No	11	568	No Balance	No main
w	g	No	11	986	No Balance	No main
w	r	No	11	372	No Balance	No main
w	e	No	11	891	No Balance	No main
w	h	No	11	317	No Balance	No main
w	d	No	11	358	No Balance	No main
w	s	No	11	254	No Balance	No main
w	i	No	11	297	No Balance	No main
w	x	No	11	926	No Balance	No main
w	r	No	11	162	No Balance	No main
w	m	No	11	156	No Balance	No main
w	q	No	11	482	No Balance	No main
w	s	No	11	696	No Balance	No main
w	h	No	11	121	No Balance	No main
w	g	No	11	264	No Balance	No main
w	q	No	11	465	No Balance	No main
w	f	No	11	821	No Balance	No main
w	x	No	11	148	No Balance	No main
w	o	No	11	982	No Balance	No main
w	n	No	11	503	No Balance	No main
w	u	No	11	540	No Balance	No main
w	j	No	11	895	No Balance	No main