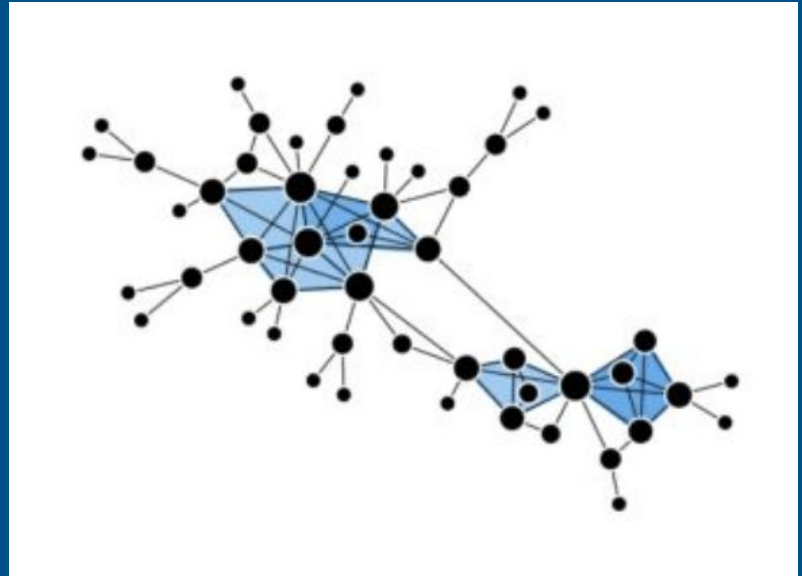# Network visualisation

in Gephi

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1. **From data to visualization**
2. **Core concepts (friendship network)**
3. **Topic visualization**
4. **Hands-on exercise**

1. **From data to visualization**
2. Core concepts (friendship network)
3. Topic visualization
4. Hands-on exercise

From data to visualization

- deciding what network you want to observe (social network, semantic network, biological network, ...)
- getting the data (existing datasets online, scraping/collecting)
- extracting the **nodes** and finding connections between them to create **edges**
- creating network representation (**edgelist, adjacency matrix, adjacency list, dataframe...**)
- analyzing network properties
- visualizing the network

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Overview of tools

- NetworkX and iGraph (beginner friendly)
- SNAP and NetworKit (for large-scale networks)
- Gephi and Pyvis (focused on visualization)

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What can I learn about my network?

- explore all the concepts taught in the class:
  - degree and degree distribution
  - centrality
  - connectedness
  - modularity

What can I show on a graph?

- whatever you want
- should be relevant to what is interesting about your specific network
- creative ways to achieve what you want

What can I show on a graph?

- node properties: size and color
- edge properties: thickness and color
- network properties: size and connectedness
- layout properties: different layouts to highlight relationships between the nodes - gravity based, modularity based, etc.

1. **From data to visualization**

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Core concepts

- let's head on over to Gephi to …
- … import the data and create a graph
- … calculate network properties
- … play with node and edge properties

1. **From data to visualization**

2. **Core concepts (friendship network)**

3. **Topic visualization**

4. **Hands-on exercise**

Hands on exercise

- create network (from your data, using Chat GPT, from internet sources)
- import the network into Gephi and create a graph
- calculate different network properties
- visualize different network properties

Questions & comments

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