

Constructing Node-Link Diagrams

In this part, the goal is for you to **construct a node-link diagram** with

the available toolkit.

We will provide you with a **dataset**, as well as a set of **instructions** to construct your representation.

First you should complete the NASA-TLX scale-ranking questionnaire for perceived task load.

After completing the questionnaire you can begin with construction. The timer will start as soon as you are ready.

* Indicates required question

1. Unique Participant ID *

Toolkit onboarding

You will use the provided toolkit to construct a node-link diagram based on real world animal interactions.

Our toolkit consists of three parts:

Firstly, **nodes**, which are the **black circles with names** on them. These are randomly assigned to the animals to make you able to identify them.

Second, **edges**, which consist of a set of **two spools and a length of yarn** between them.

Third, a **canvas**, the magnetic **whiteboard** in front of you, on which you are to arrange them.

The parts are all **magnetic**, so they will stick to the whiteboard, as well as each other. This way you can **create your graph**, step-by-step.

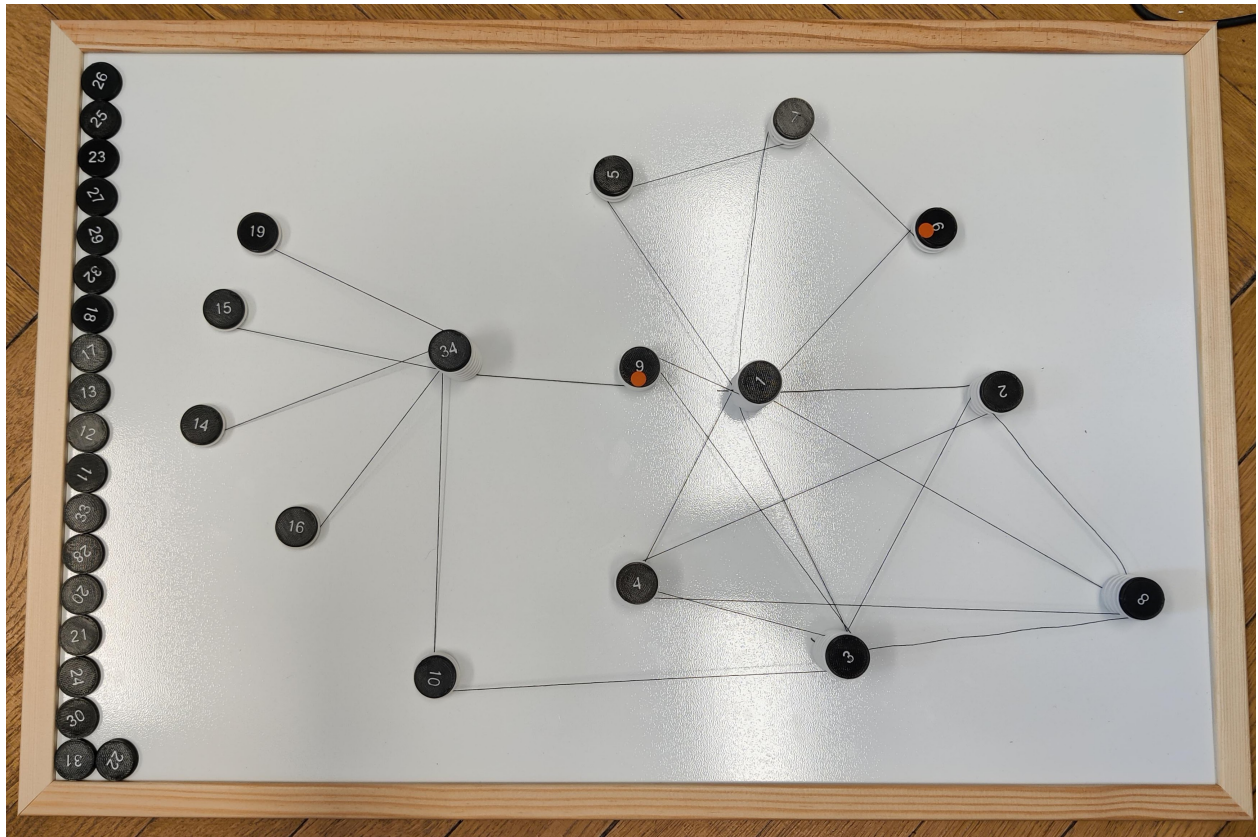
Estimate the length of an edge first, and spool it up equally on both sides to have enough slack for later adjustment.

Then **place the spool on the whiteboard**, or the previous spool on **both ends**. Do some fine adjustment to the yarn length by rotating the spool.

Finally **attach the node** to the top part.

Try it now! (Freely build a graph with 4 nodes, connect at least 3 nodes to each other).

An example for a graph built with the toolkit.



Task Load - Scale Ranking

We will measure the task load experienced by you in building a graph, just like you practiced.

For this we use the **NASA TLX** questionnaire.

Please mind the **description of the scales** used in this questionnaire. If something is unclear do not hesitate to ask us at any point.

This section determines your personal preference regarding task load, specifically for the **task of building a node-link diagram with the provided toolkit**.

Pick the attribute in each pair that is more important to you.

3. Pick One *

Mark only one oval.

☐ Effort

☐ Performance

4. Pick One *

Mark only one oval.

☐ Temporal Demand

☐ Frustration

5. Pick One *

Mark only one oval.

☐ Temporal Demand

☐ Effort

6. Pick One *

Mark only one oval.

☐ Physical Demand

☐ Frustration

7. Pick One *

Mark only one oval.

☐ Performance

☐ Frustration

8. Pick One *

Mark only one oval.

☐ Physical Demand

☐ Temporal Demand

9. Pick One *

Mark only one oval.

☐ Physical Demand

☐ Performance

10. Pick One *

Mark only one oval.

☐ Temporal Demand

☐ Mental Demand

11. Pick One *

Mark only one oval.

☐ Frustration

☐ Effort

12. Pick One *

Mark only one oval.

☐ Performance

☐ Mental Demand

13. Pick One *

Mark only one oval.

☐ Performance

☐ Temporal Demand

14. Pick One *

Mark only one oval.

☐ Mental Demand

☐ Effort

15. Pick One *

Mark only one oval.

☐ Mental Demand

☐ Physical Demand

16. Pick One *

Mark only one oval.

☐ Effort

☐ Physical Demand

17. Pick One *

Mark only one oval.

☐ Frustration

☐ Mental Demand

Construction - Start

In this part, the goal is for you to construct a **node-link diagram** with the available toolkit. We will provide you with a set of instructions on how to arrange the nodes and edges.

We also encourage you to **think-aloud** during construction, let us know your thoughts while you construct.

Please note that this task is **NOT about completing the construction as quickly as possible**. We are more interested in how you approach the construction.

If you have questions at any point, feel free to ask.

18. *

Tick all that apply.

- ☐ Timer is running
- ☐ Video capture is running

Construction - End

Please proceed with the construction, according to your instructions. **Let us know as soon as you are finished.**

19. Time Taken *

Construction - Summary Questionnaire

Please indicate the impact of the following factors during the construction of the network.

Mental Demand

20. How much mental and perceptual activity was required during this task? *
(0...low, 100...high)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Physical Demand

21.



How much physical activity was required during the task?
(0...low, 100...high)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Temporal Demand

22.

*

How high was the temporal demand of the task?
(0...low, 100...high)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Performance

23.

*

How would you rate your performance during this task?
(0...good, 100...poor)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Effort

24. How hard did you have to work to achieve your level of performance? *
(0...low, 100...high)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Frustration

25. How insecure, irritated, stressed, and annoyed did you feel during the task? *
(0...low, 100...high)

Mark only one oval.

- ☐ 0
- ☐ 5
- ☐ 10
- ☐ 15
- ☐ 20
- ☐ 25
- ☐ 30
- ☐ 35
- ☐ 40
- ☐ 45
- ☐ 50
- ☐ 55
- ☐ 60
- ☐ 65
- ☐ 70
- ☐ 75
- ☐ 80
- ☐ 85
- ☐ 90
- ☐ 95
- ☐ 100

Construction - End

This concludes this section of the experiment.

Please share your experience with us and tell us what you liked or disliked.

26. Final Thoughts *

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