

Agile2023

THE SCOTLAND EXPERIENCE

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Guy Marshall

The Art and Science of Agile Diagramming: A Practical Guide

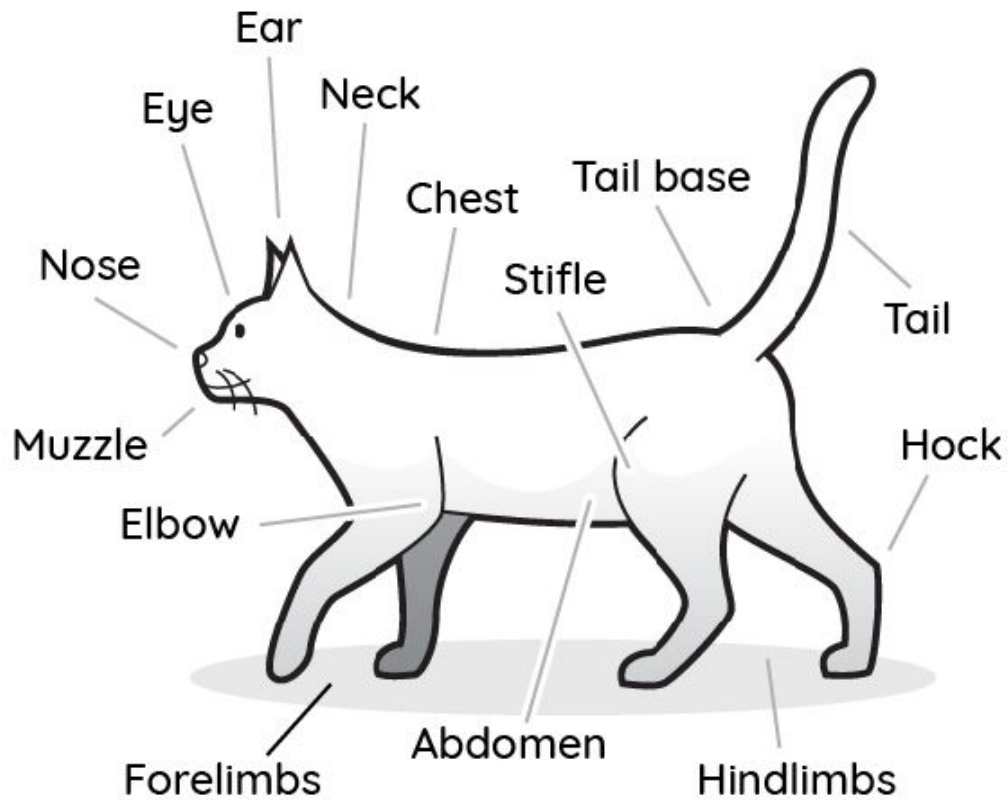


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Draw a diagram

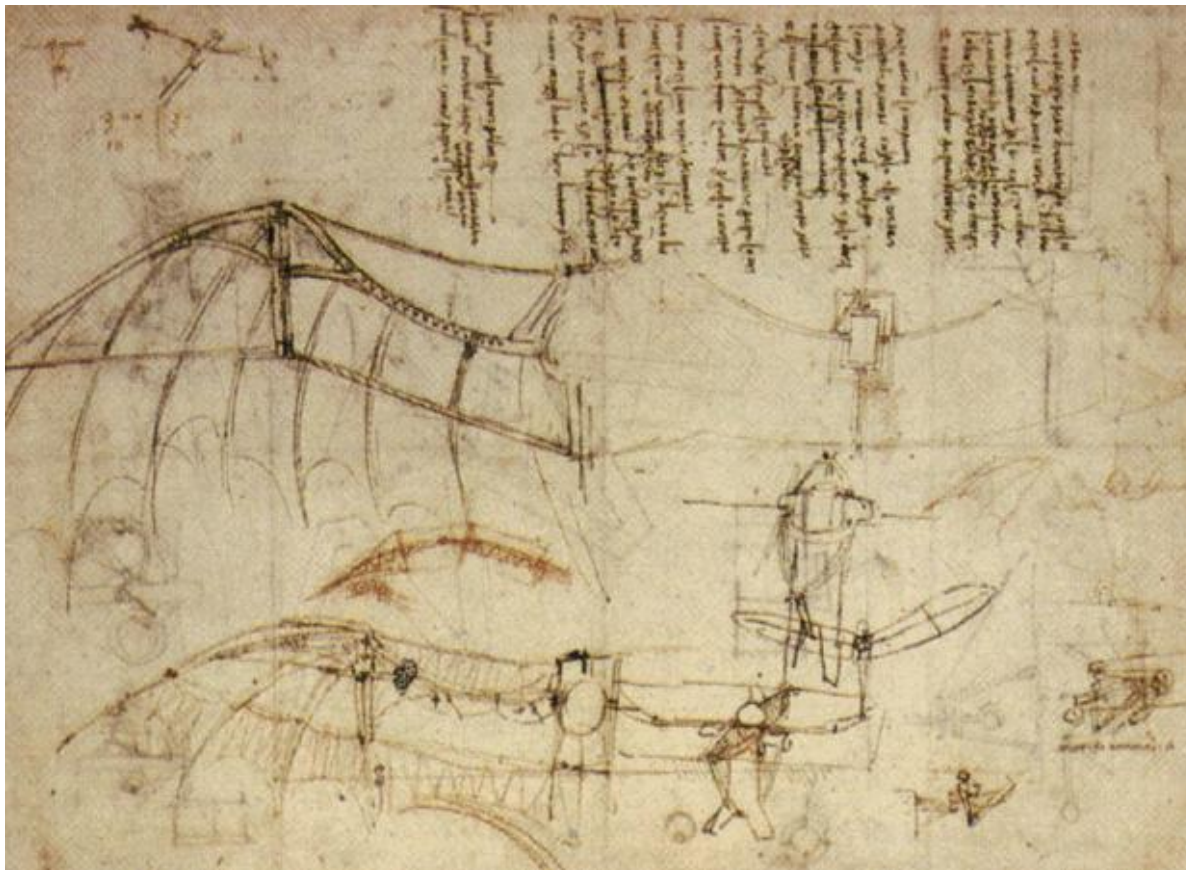


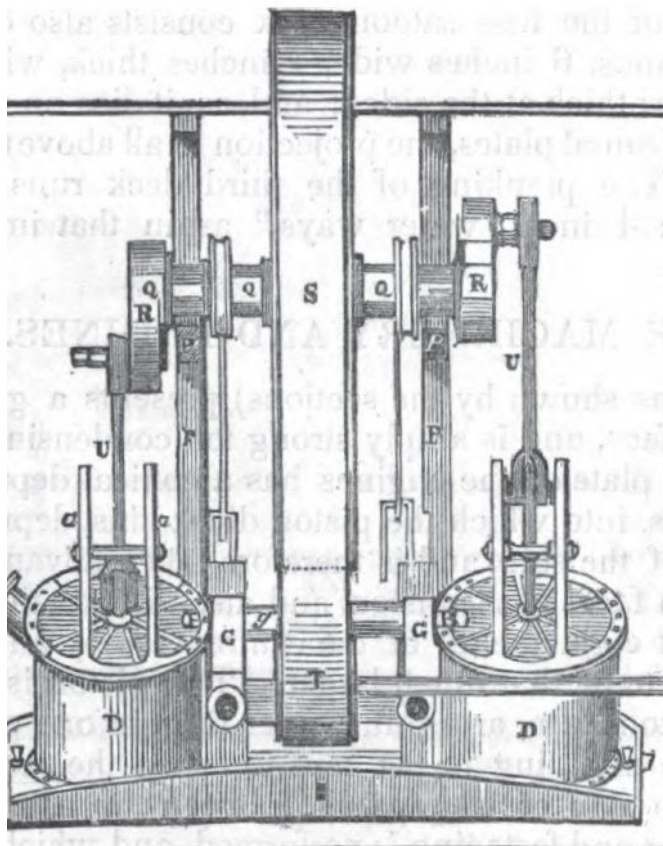
What we'll do

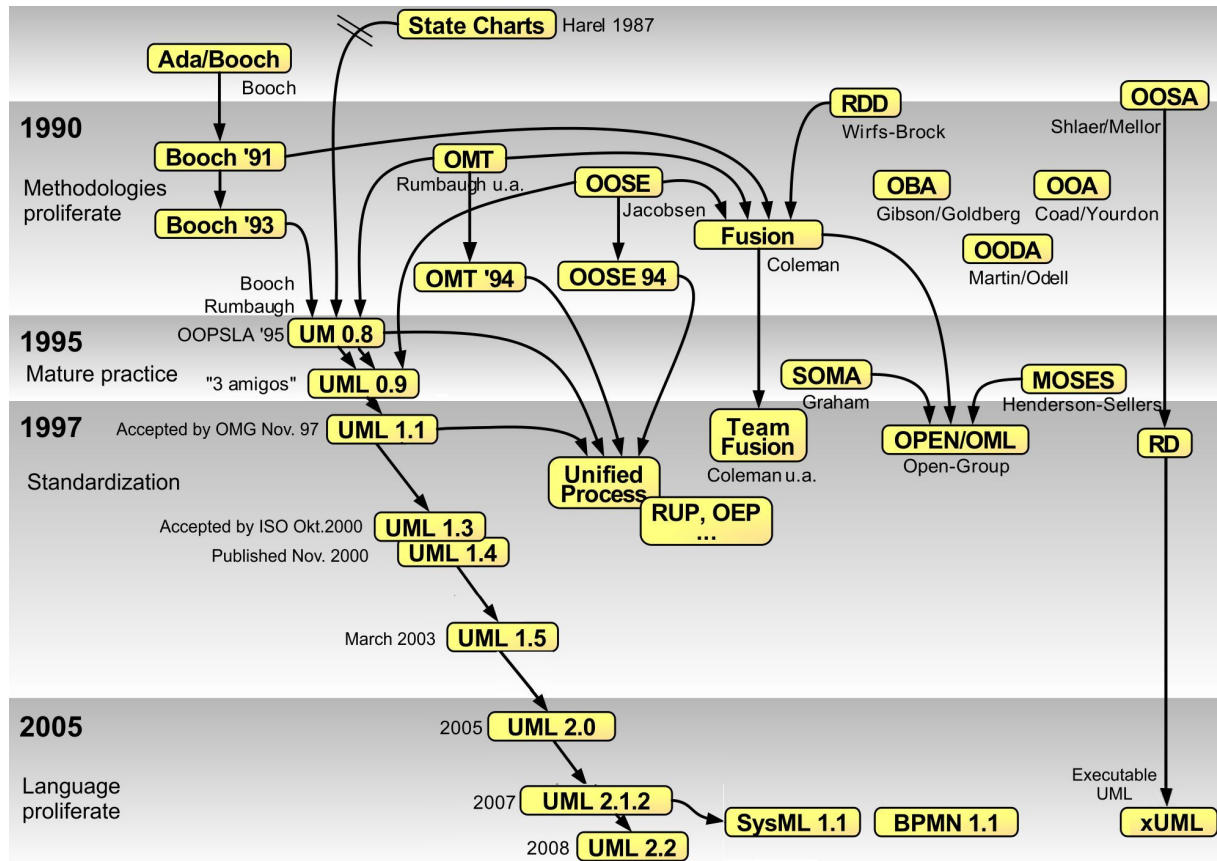
- **DISCOVER** the philosophy and history of diagrams
- **IDENTIFY** diagramming practices
- **APPLY** scientific research to improve your diagrams
- **PRACTICE** using different principles in your diagrams
- **ARTICULATE** more effectively through diagrams to communicate about complex topics

History









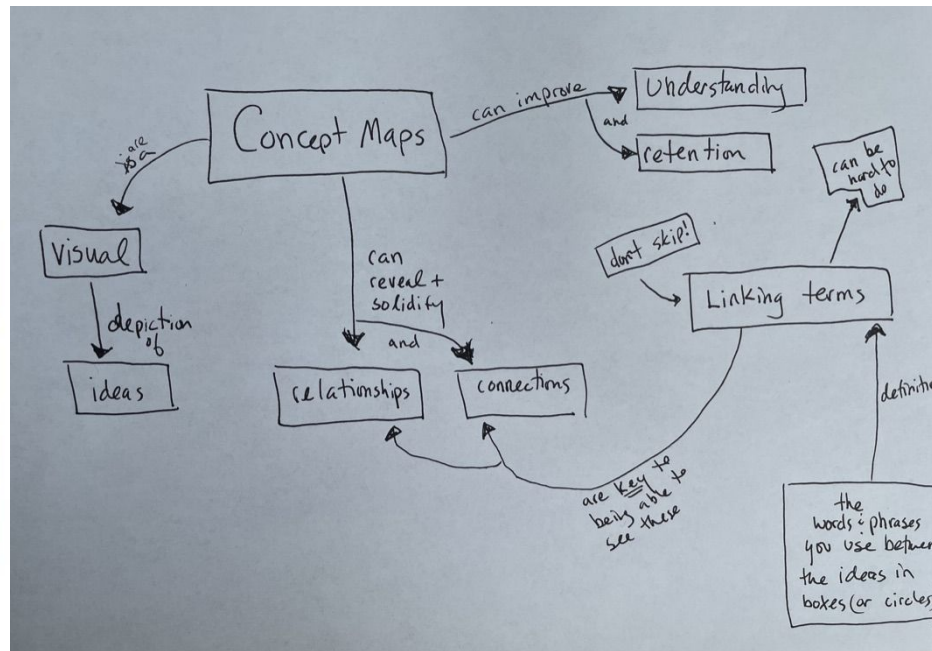
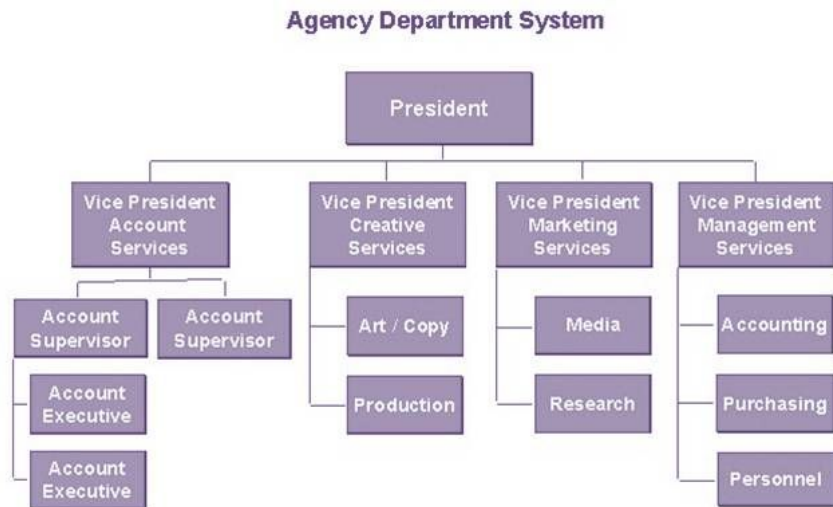
What is a diagram?

“a simplified drawing showing the appearance, structure, or workings of something; a schematic representation.” (Oxford English Dictionary)

“an icon of relation” (Peirce) where relations encode a physical resemblance to the signified. Diagram as distinct from an image or a metaphor.

“skeleton-like sketch of relations” (Stjernfelt on Peirce)

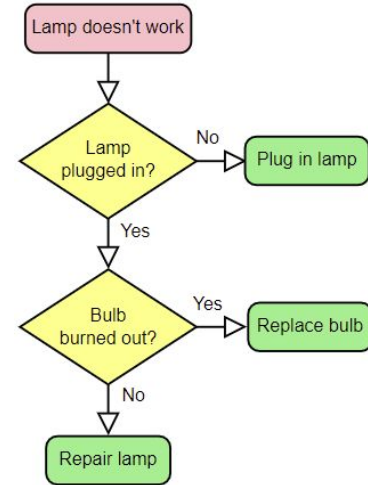
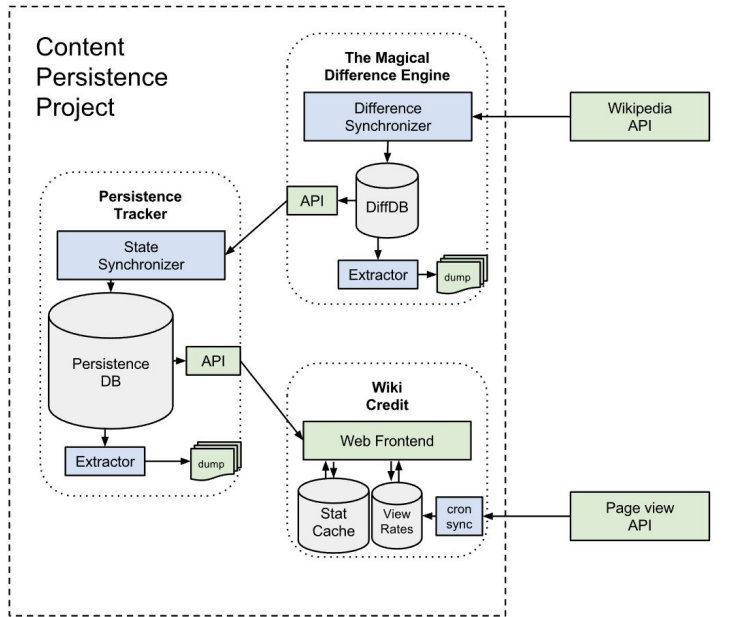
Agile-related diagrams 1



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Right by Cornell Learning Strategies Center <https://lsc.cornell.edu/how-to-study/studying-for-and-taking-exams/concept-maps/>

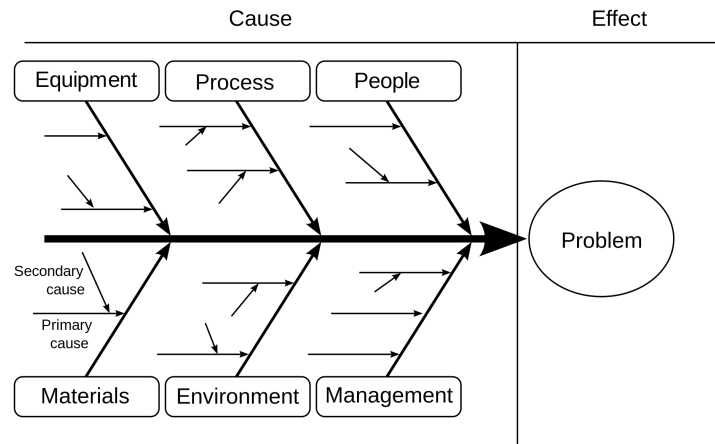
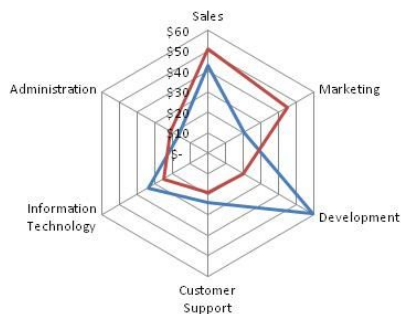
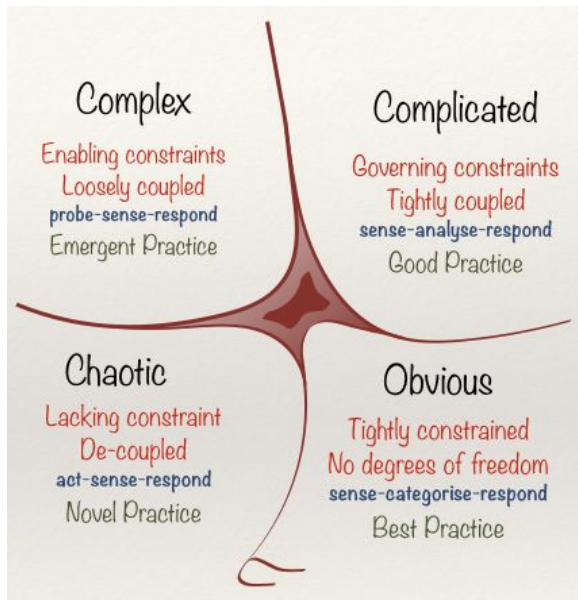
Agile-related diagrams 2



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Right as svg by Booyabazookaoriginal png by Wapcaplet, CC BY-SA 3.0, via Wikimedia Commons

Agile-related diagrams 3

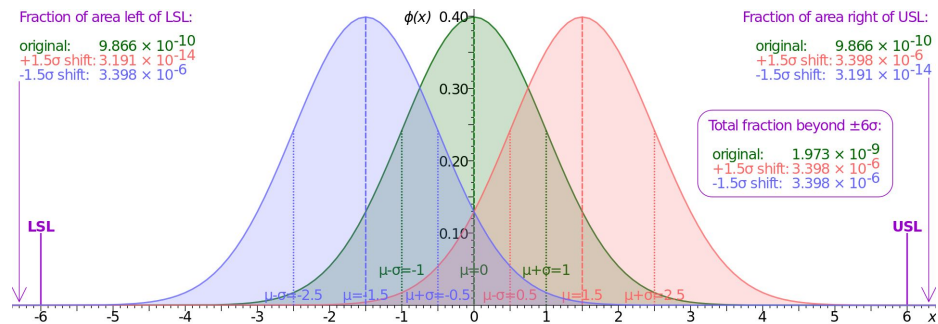
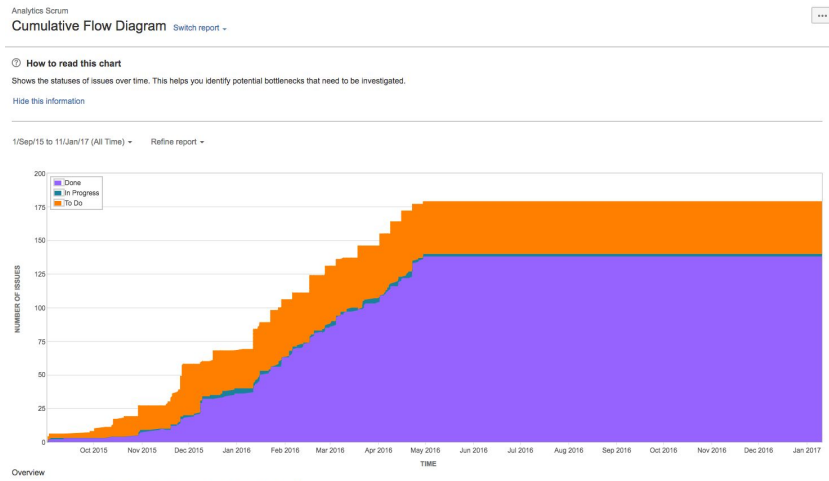


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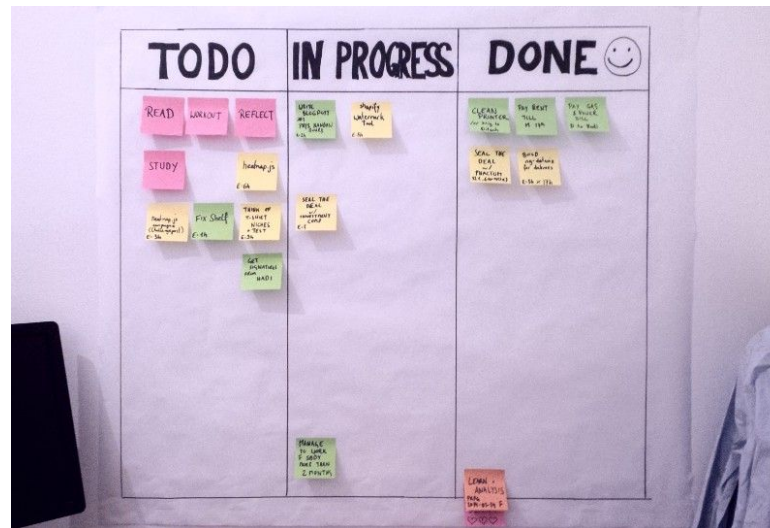
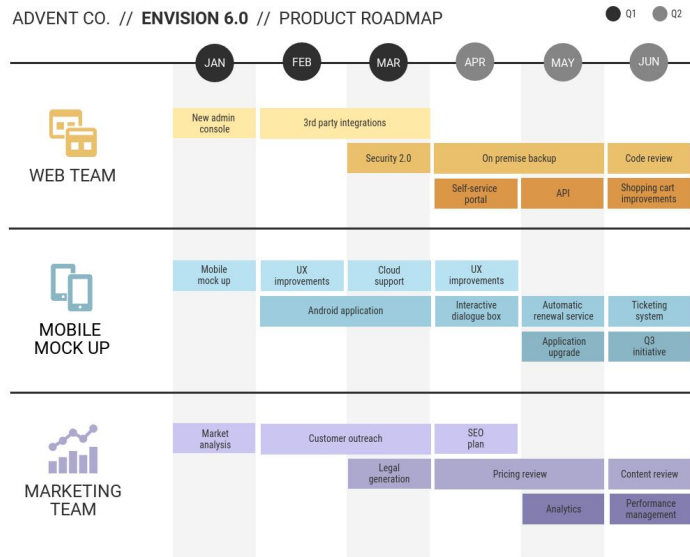
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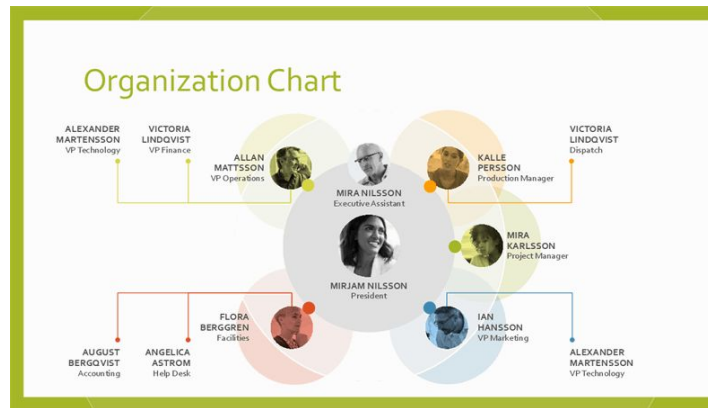
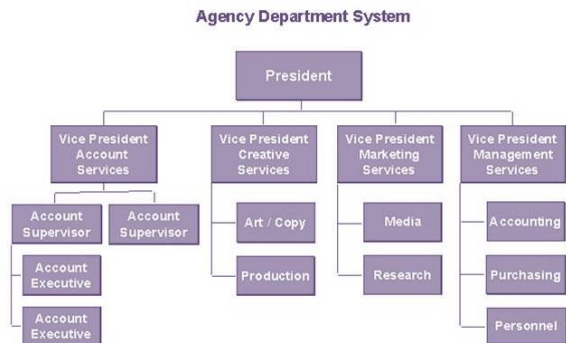
Agile-related diagrams 4



Agile-related diagrams 5



More about a specific domain



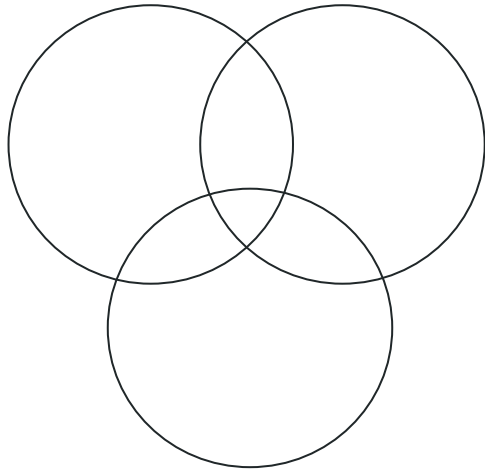
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Centre: <https://templates.office.com/en-us/team-organization-chart-tm33828058>

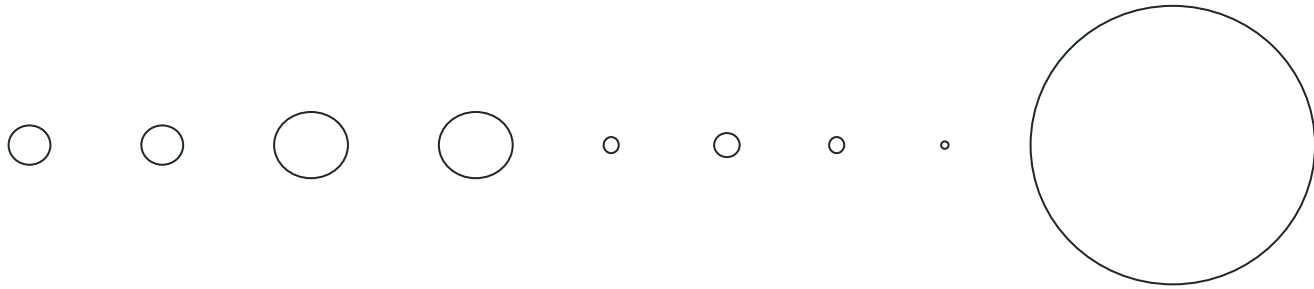
Right: <https://www.lucidchart.com/blog/circular-org-charts>

Diagrams can be simple. Here are some circles.

What does this tell you?



What might this represent?



Advantages of diagrams

- Are external representational support to cognitive processes (Clark, 1998)
- Make topics simpler, leading to reduced search space and fewer cases to be computed over, by including minimal salient information (Sloman, 1984)
- Are manipulated in order to profile known information in an optimal fashion (Tylen et al., 2014)
- Make abstract properties and relations cognitively accessible (Hutchins, 1995)
- Can be in a public space, therefore enabling collective and temporally distributed forms of thinking (Peirce, 1931)
- Facilitate perceptual “free rides” in inference, making relations evident that might not be obvious in a different representation (Shimojima, 2015)

A is to the left of B.

C is to the right of D.

C is below B.

Where is A in relation to D?

A B

D C

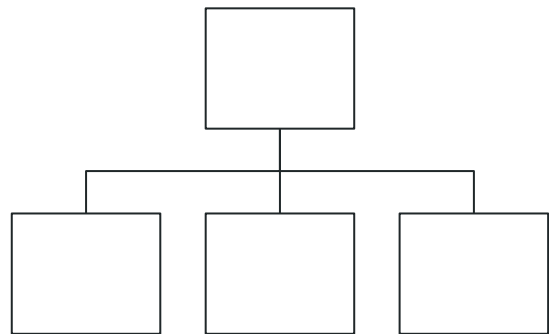
Where is A in relation to D?

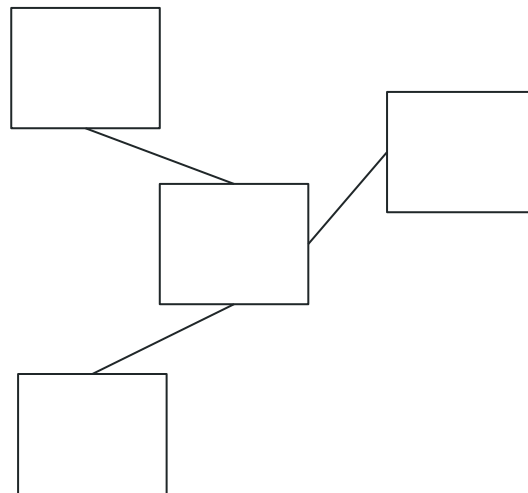
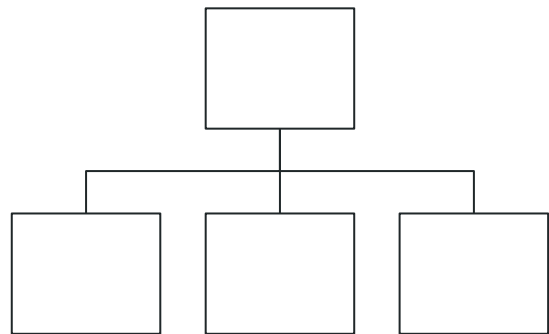
A	B
D	C

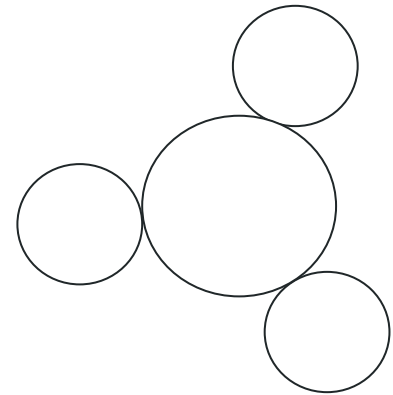
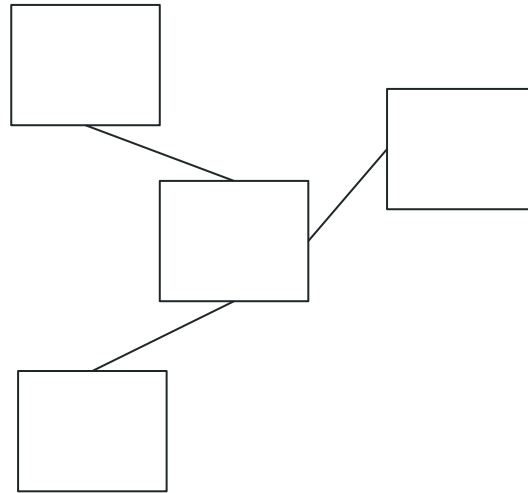
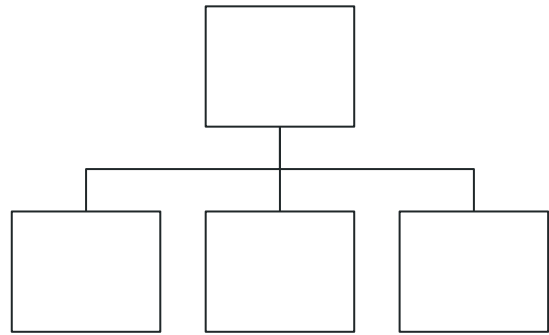
Where is A in relation to D?

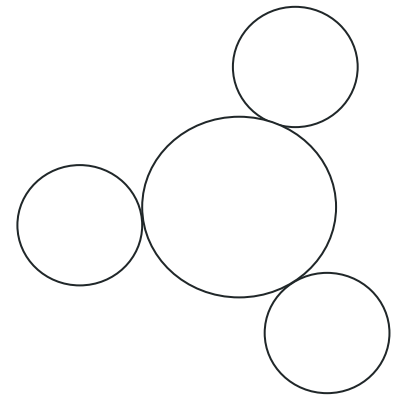
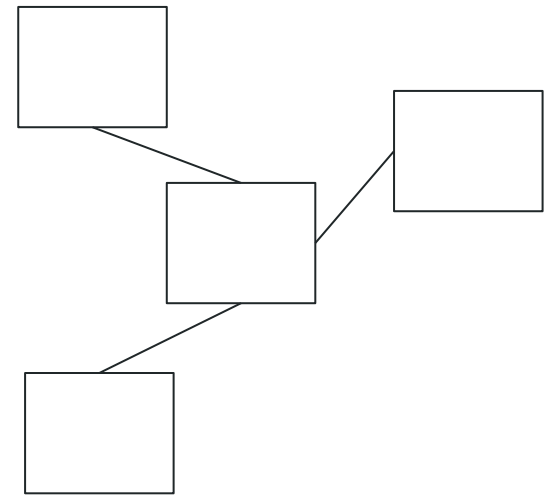
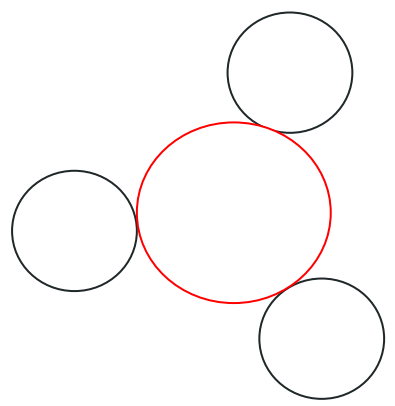
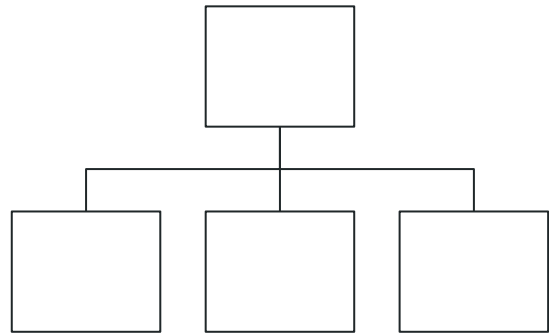
Relations and how they can be encoded: Research tips

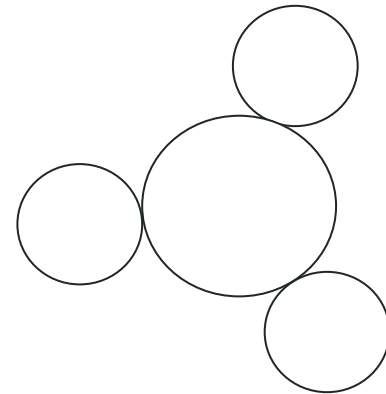
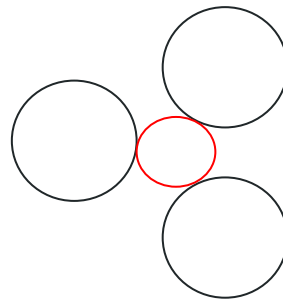
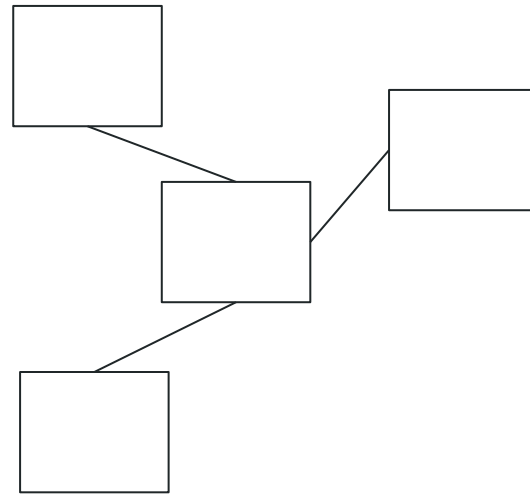
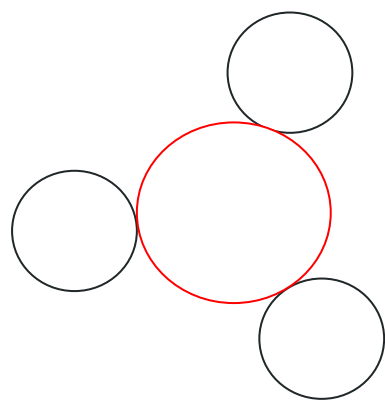
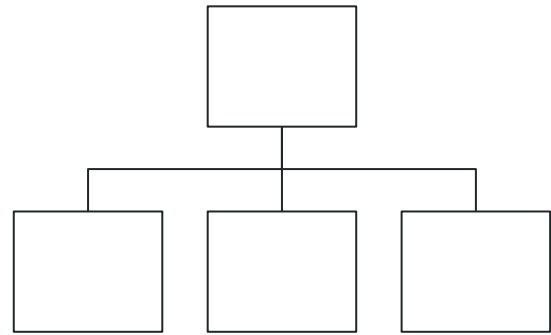
- “Data-ink” for meaningful encoding (Tufte, 2001)
- Researchers are trying to formalise diagrammatic encodings: e.g. VisDNA (Richards and Engelhardt, 2021)
- Understand what is happening now in order to improve things











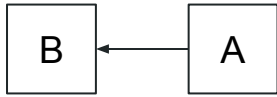
Draw some *really simple* diagrams

... and discuss

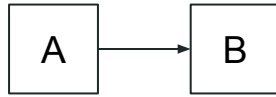


Are these the same?

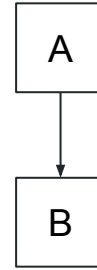
(i)



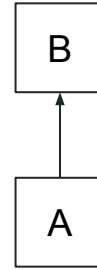
(ii)



(iii)



(iv)

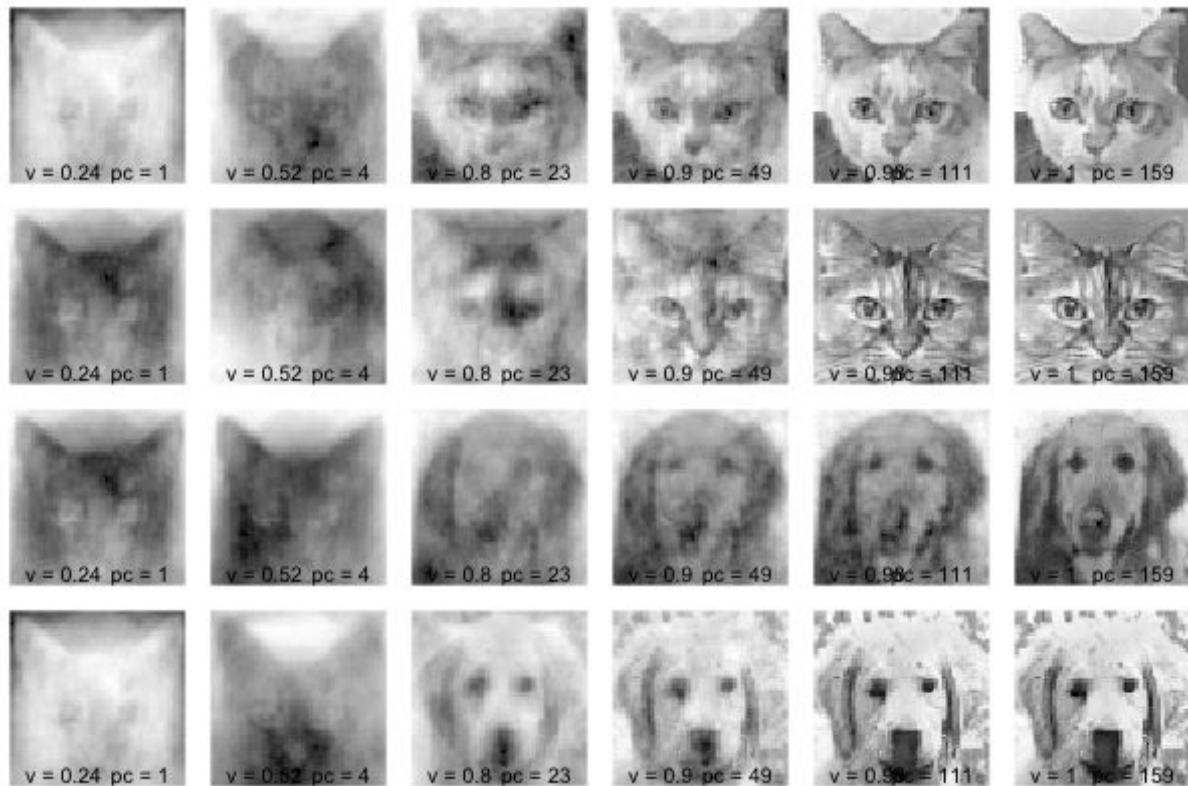


Why is visual encoding important?

- Effective communication
- Unambiguous communication
- Accessibility
- Unconscious bias
- ...

Diagrams are continuing to evolve

- Images > Schematics > 3D
- Interactive / dynamic / collaborative diagrams?
- Holistic “agile” diagrams to enable "optimising the whole"?
- Guy's PhD thesis: A framework for improved AI software diagrams
- ???



Session reflection

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- **ARTICULATE** more effectively through diagrams to communicate about complex topics

Acknowledgements:



Research + Consulting

thediagramsguy.com

