W7. Check List — Junyi

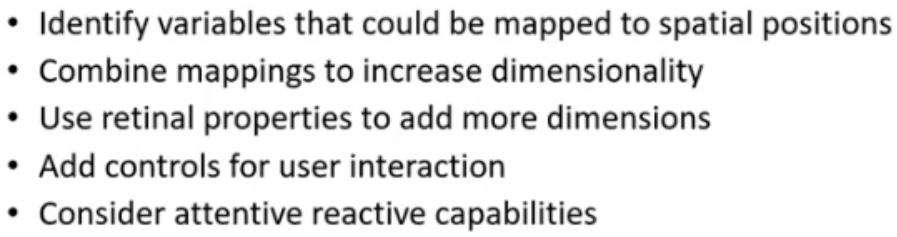
- What is the best way to show a knowledge graph?
  - The improvement in user understanding → the effective use of the following elements.

> understanding results from the effective use of the following elements./ First, the visualization presents more information in a display than the user might be able to remember at one time. / Second, it takes away the burden from the user for having to look for important pieces of information. / Third, by placing relevant data next to each other, it enhances the ability to make comparisons./ Fourth, it keeps track of user's attention as they are navigating the information. / Fifth, it provides a more abstract view of a situation through omission and recoding of information. Finally, by letting the user interact and manipulate the visualization, it helps the user in deeply engaging and immersing in the information.

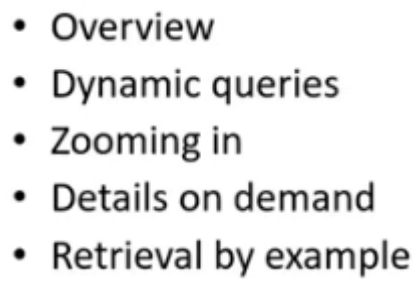
  - The design of a visual structure involves mapping the desired information into a combination of ways for visual encoding:
    - spatial substrate, marks, connection and enclosure, retinal properties, and temporal encoding.
  - We can group the visualizations into four categories:
    - simple, composed, interactive, and attentive reactive.
  - visualization techniques
    - general principles
      - amplify the user understanding of data
        - present more information
        - unburden: look for information
        - place relevant data next to each other
        - provide more abstract view through omission and recording of information
        - allow a user to interact with and manipulate
      - design choices
        - spatial substrate
        - marks

- connections and enclosures
- retinal properties
- temporal encoding

- best practice
  - five step design process



  - design template



- best practices

- Query interface
  - structured query interface
    - queries conform to a pre-defined grammar
    - system uses auto-completion in response to user's input
    - improvement
      - improving the range of queries requires - expand the grammar
      - well-suited only for limited domains
  - natural language query interfaces
    - semantic parsing technology
      - semantic parsing system
        - executor

        - ▼ grammar
        - ▼ model
        - ▼ parser
        - ▼ learner
    - ▼ extremely difficult problem
    - ▼ requires amassing a large amount off training data

▼ Some of the questions may be known upfront, while some questions users may never think of themselves →

- ▼ whether the interaction is initiated by the user (ie, Pull), or in response to information presented to the user (ie, Push), and whether the questions are known in advance vs questions are not known in advance.