

Tkinter Tutorial

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CS251: Data Analysis and Visualization

Lecture 3

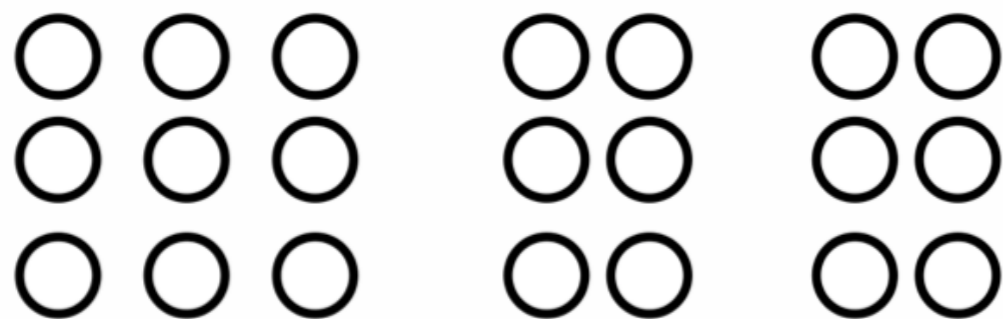
Spring 2019

Plan

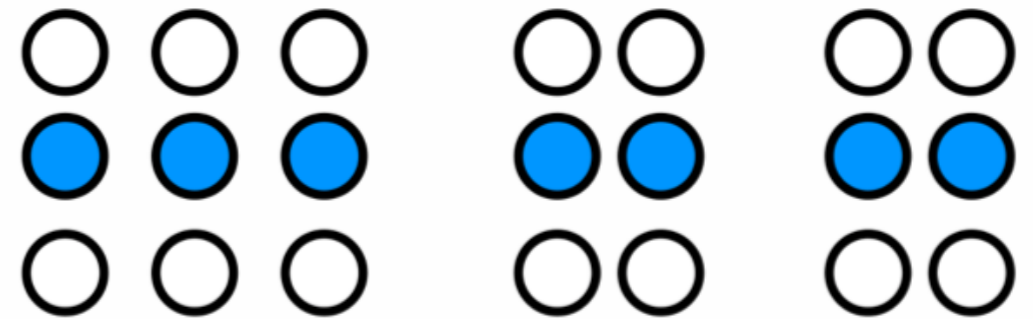
- Finish impact of perceptual factors on data visualization
- Tutorial on creating a GUI for a data visualization app with Tkinter.

Gestalt Rules

- **Gestalt Rules:** Competing factors that influence how we **group** collections of visual elements.
- Gestalt means “whole” in German. (*Gestalt rules emerged from psychophysical experiments performed by mostly German psychologists in the early 1900s*).



Proximity



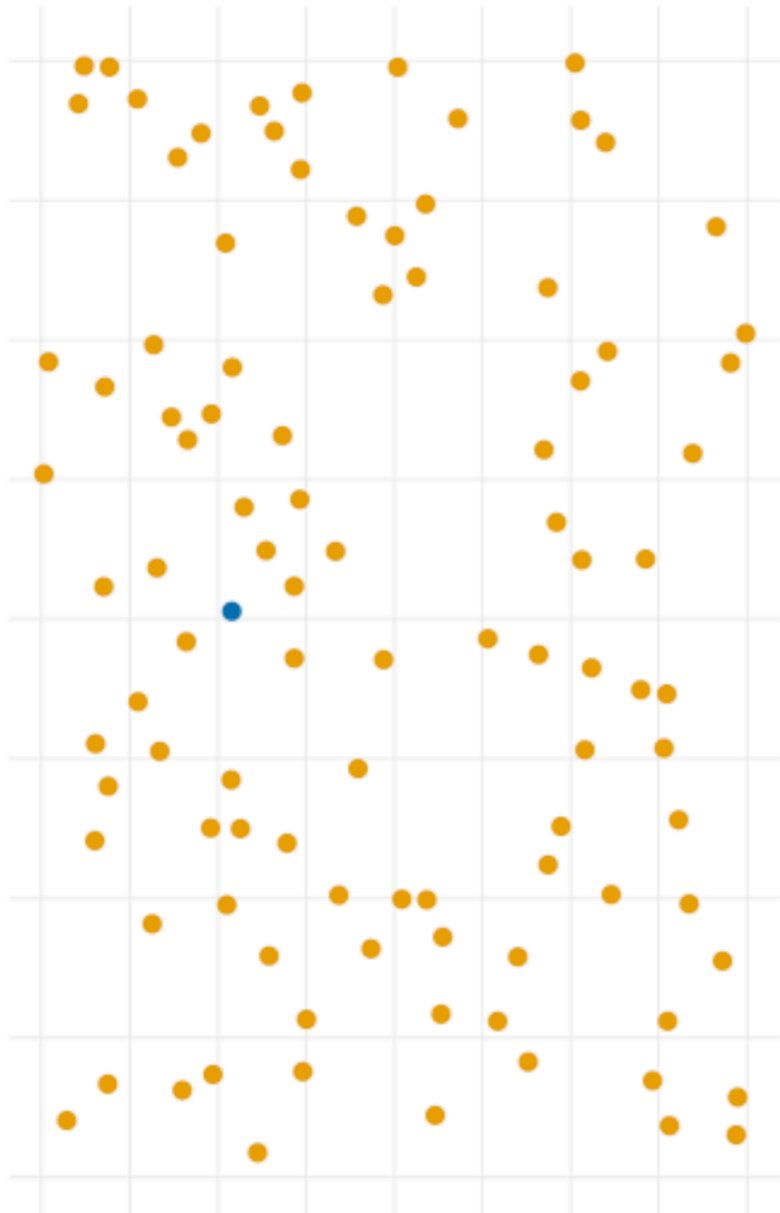
Similarity

Pop-out vs. visual search

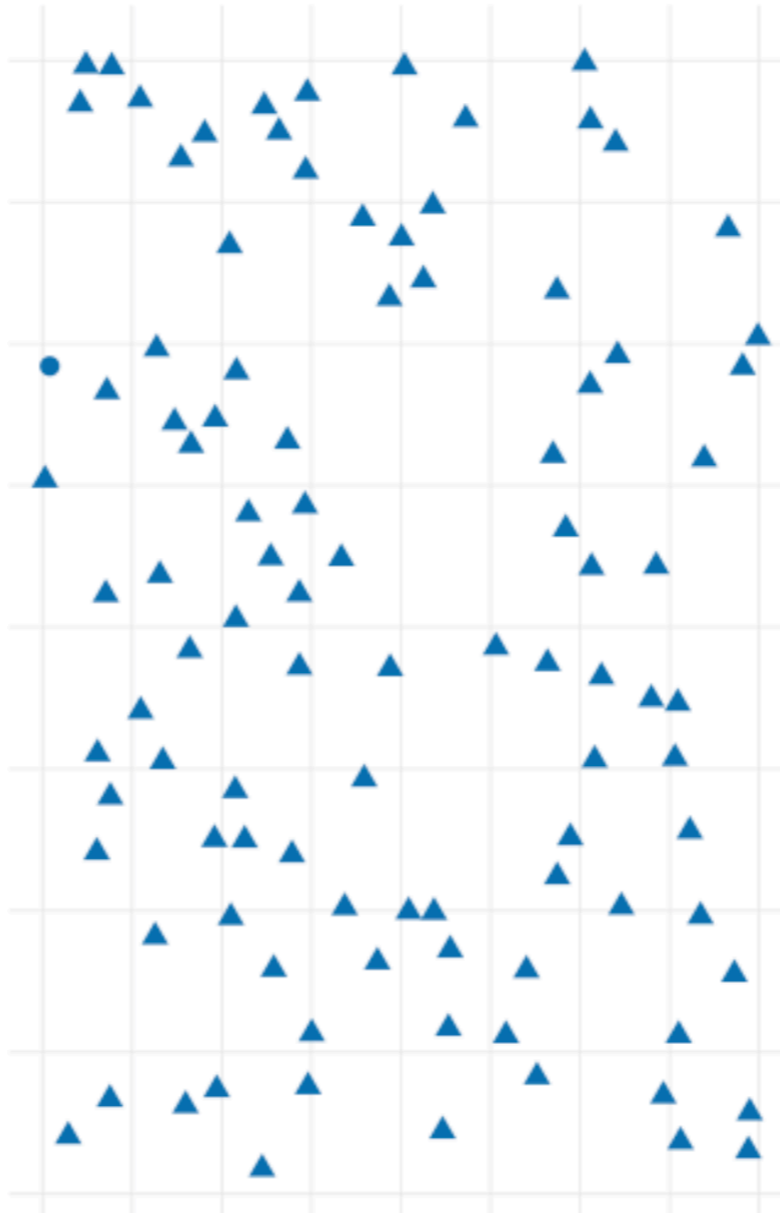
- Visual system processes *shape* and *color* using different **channels** (subsystems).

Where is the blue circle?

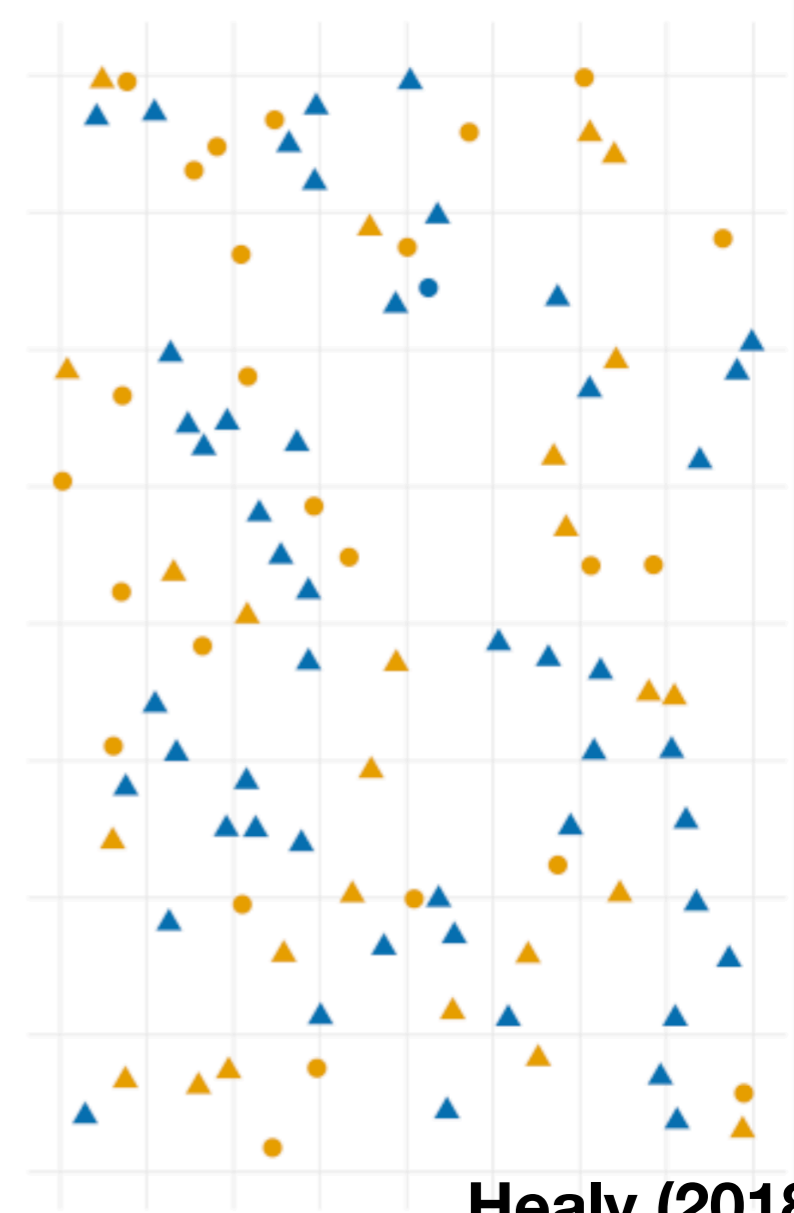
Color Only, N=100



Shape Only, N=100



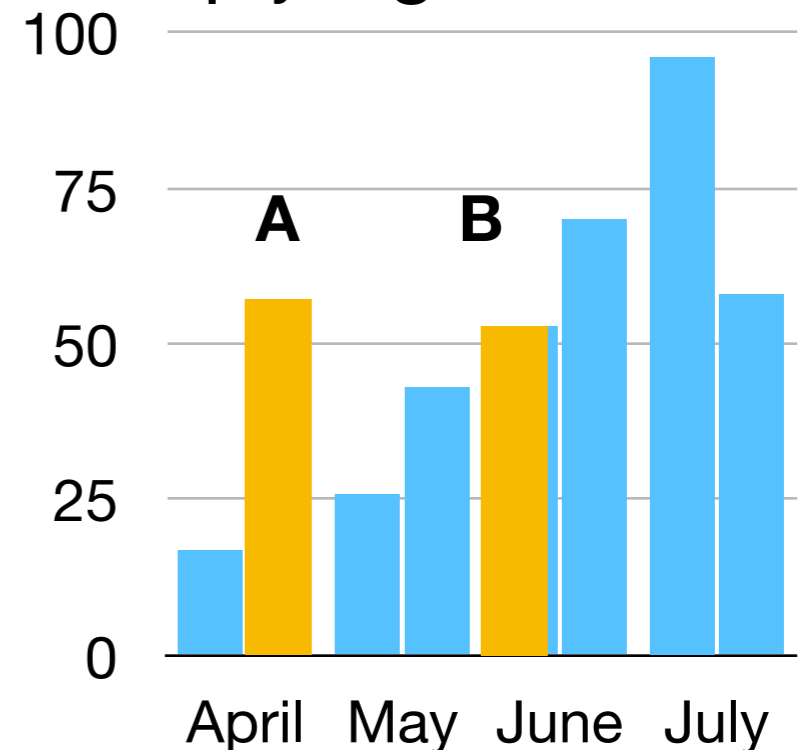
Color & Shape, N=100



Psychophysics

- **Psychophysics:** In an experiment, measuring human perception through a series of quantitative, objective judgments.
- Cleveland & McGill (1984) ran psychophysical experiments on human subjects to measure how effectively people decode different data visualization aesthetics.
- *Task:* View two plots, humans make a fast snap judgments about which of two values is greater.

A > B?



Visualization aesthetics studied



Position

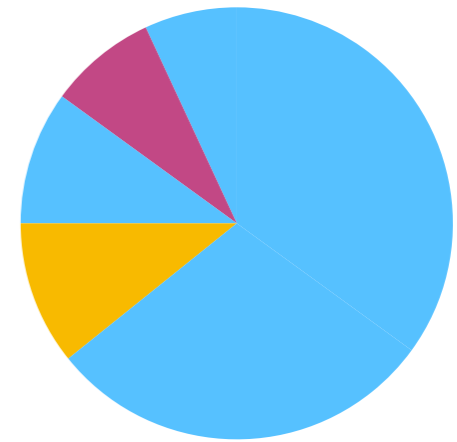
(Adjacent, separated, thickness)

Common reference

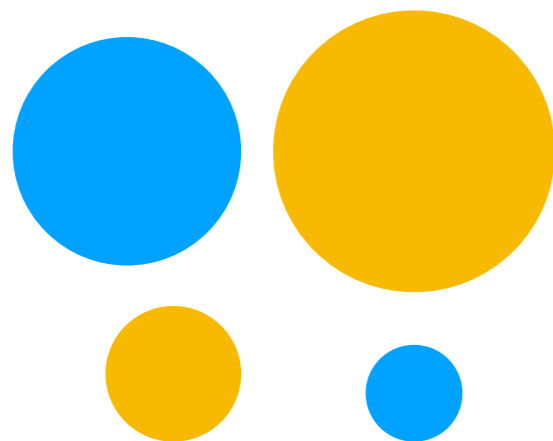


Length

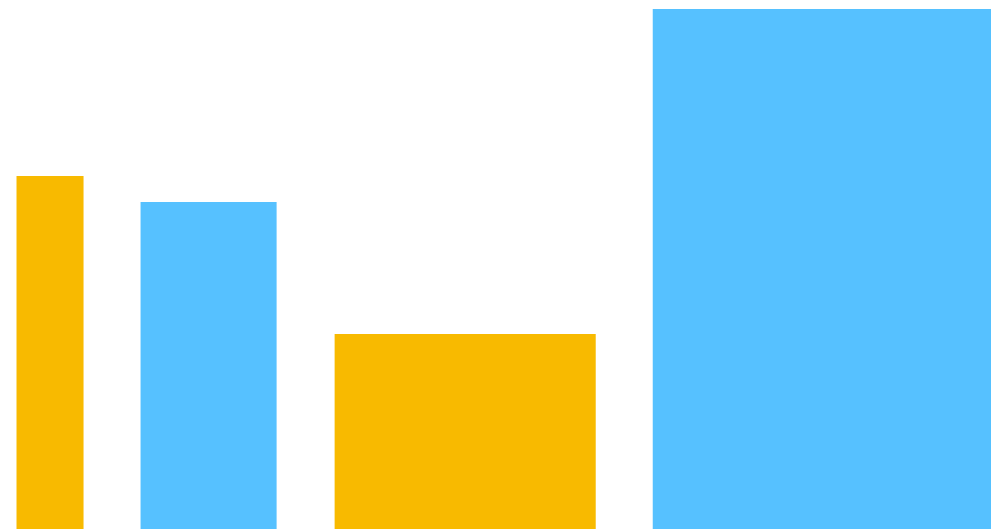
(No common reference)



Angle



Circular Area



Rectangular Area

Psychophysical results

