

# Common Interaction Techniques

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Explore

# Taxonomy of Interactive Dynamics

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## Data and View Specification

**Visualize** data by choosing visual encodings.

**Filter** out data to focus on relevant items.

**Sort** items to expose patterns.

**Derive** values or models from source data.

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(Heer & Shneiderman, 2012)

# Taxonomy of Interactive Dynamics

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## View Manipulation

**Select** items to highlight, filter, or manipulate them.

**Navigate** to examine high-level patterns and low-level detail.

**Coordinate** views for linked, multidimensional exploration.

**Organize** multiple windows and workspaces.

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(Heer & Shneiderman, 2012)

# Taxonomy of Interactive Dynamics

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## Process and Provenance

**Record** analysis histories for revisitation, review and sharing.

**Annotate** patterns to document findings.

**Share** views and annotations to enable collaboration.

**Guide** users through analysis tasks or stories.

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(Heer & Shneiderman, 2012)

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Data and View Specification	<b>Visualize</b> data by choosing visual encodings. <b>Filter</b> out data to focus on relevant items. <b>Sort</b> items to expose patterns. <b>Derive</b> values or models from source data.
View Manipulation	<b>Select</b> items to highlight, filter, or manipulate them. <b>Navigate</b> to examine high-level patterns and low-level detail. <b>Coordinate</b> views for linked, multidimensional exploration. <b>Organize</b> multiple windows and workspaces.
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(Heer & Shneiderman, 2012)

# Fundamental Interactions

# Filter

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- Filter to focus on certain data (e.g., time segment, categories)



# Filter

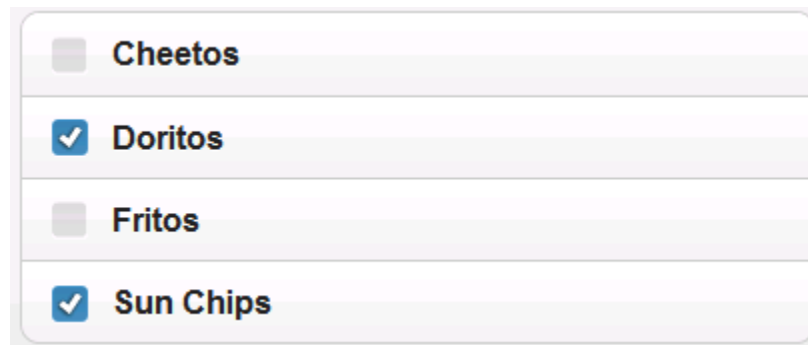
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When a **small** number of items:

- Radio buttons
- Check boxes



A vertical container with two radio buttons. The top button is selected (filled circle) and labeled "Male". The bottom button is unselected (empty circle) and labeled "Female".



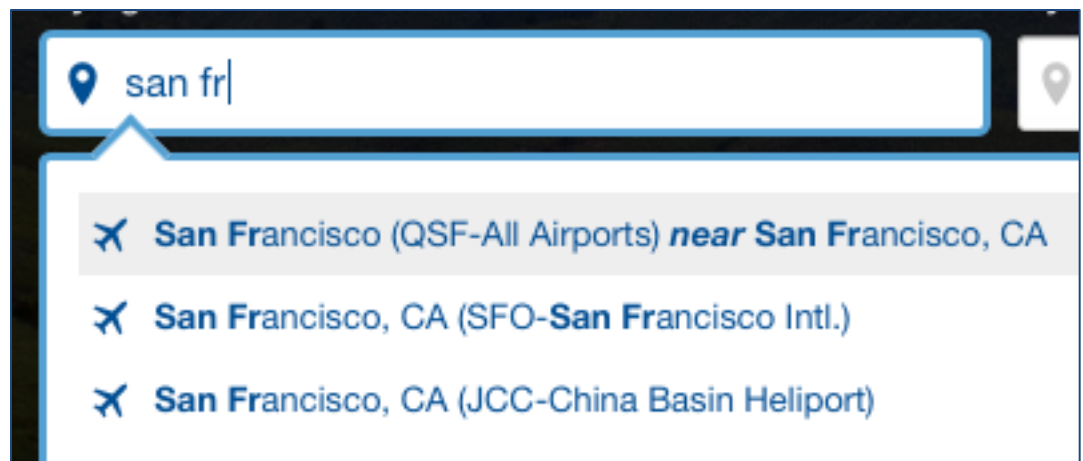
A vertical list of four items, each with a check box and a label. The first item is "Cheetos" with an unselected check box. The second item is "Doritos" with a selected check box (blue checkmark). The third item is "Fritos" with an unselected check box. The fourth item is "Sun Chips" with a selected check box (blue checkmark).

# Filter

When a **large** number of items:

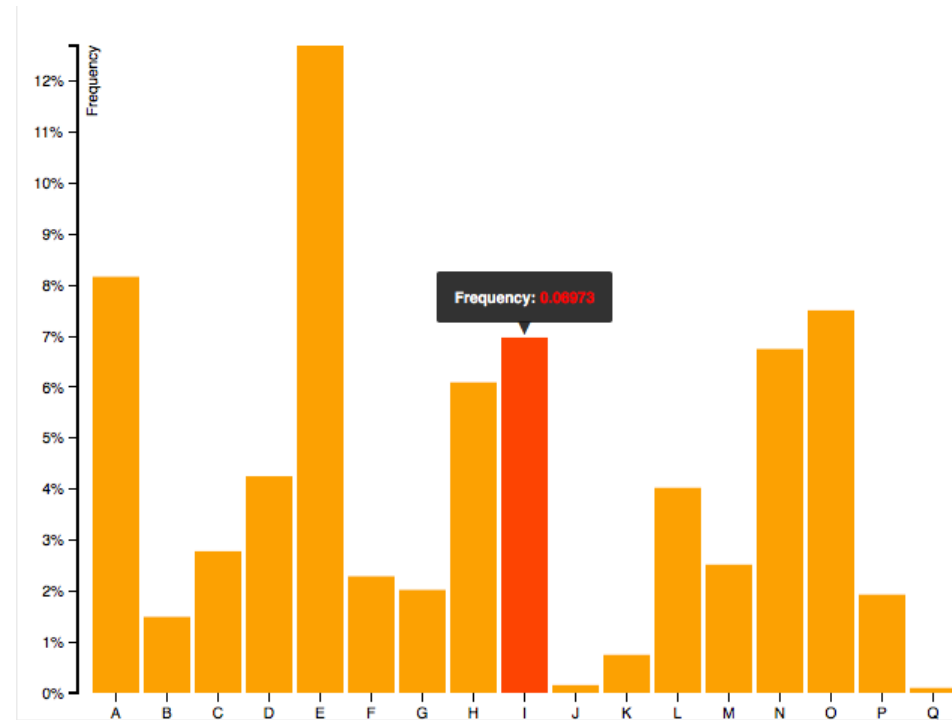
- Scroll
- Hierarchy
- Search with autocomplete

	A	B	C
1			
2		Select Location	
3			
4		Quebec	
5		Saskatchewan	
6		Nunavut	
7		Northwest Territories	
8		Yukon Territory	
9		District of Columbia	
10		Alabama	
		Alaska	

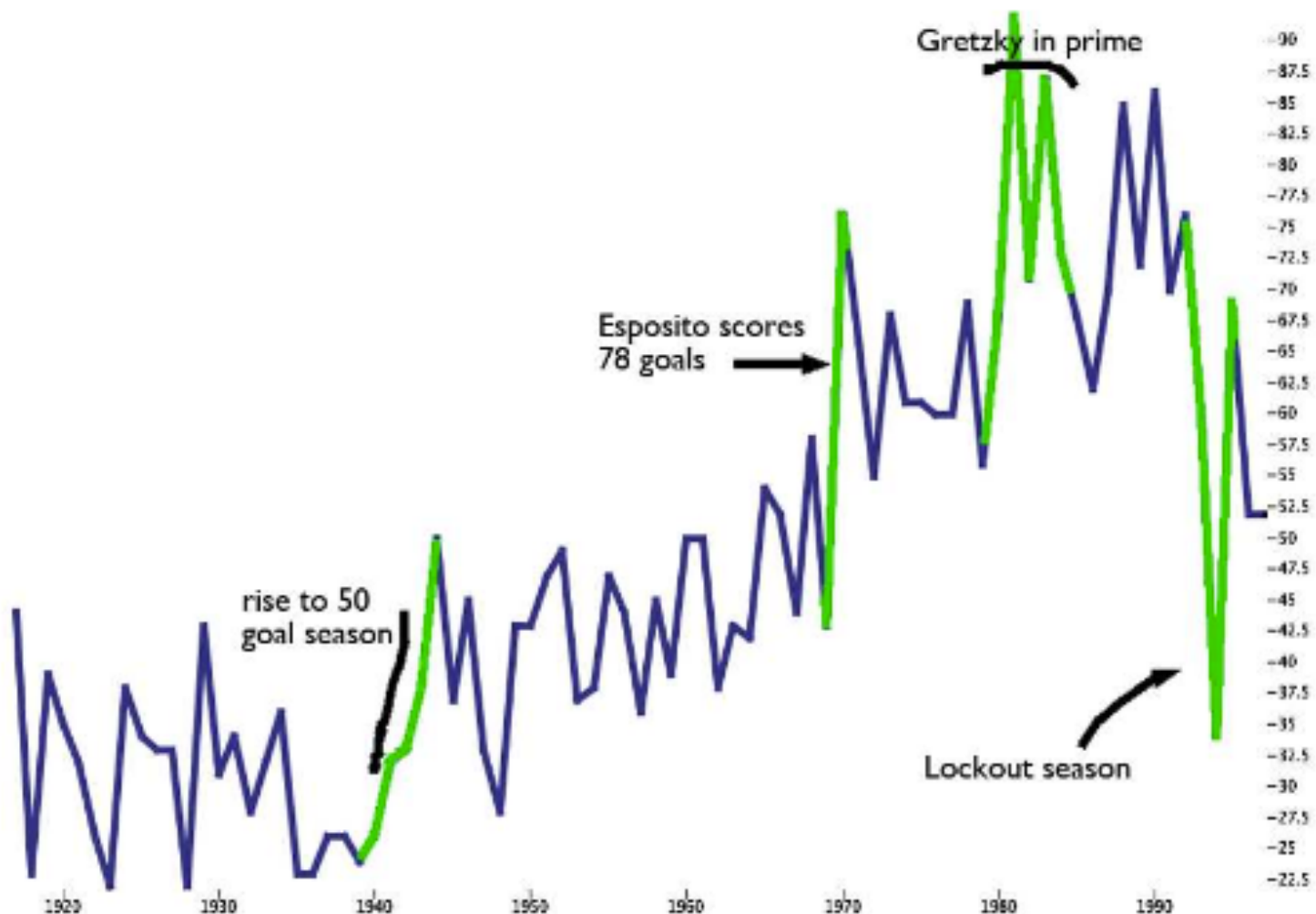


# Selection

- Mouseover/hover
- Sticky mouseover
- Tap/click
- Drag
- Keyboard  
(tab, keyboard  
cursor)



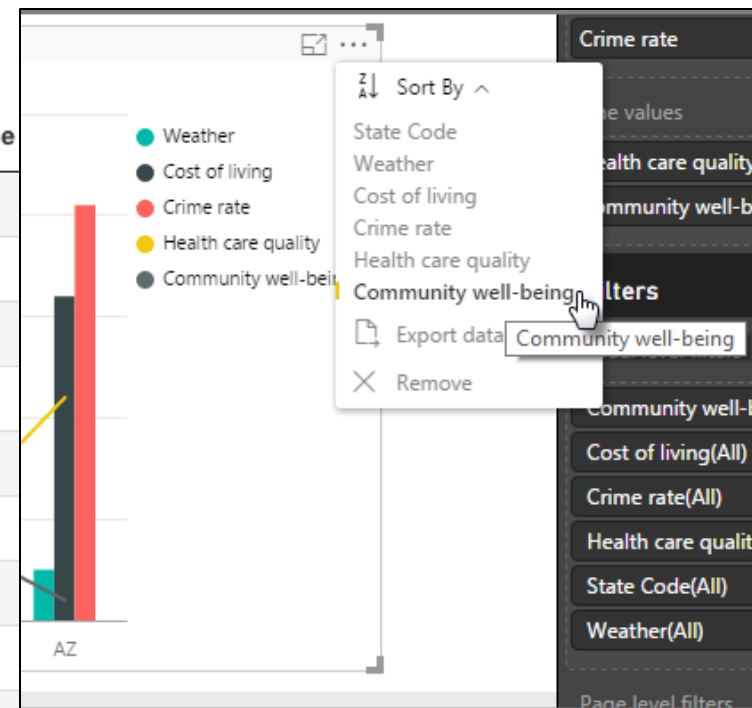
# Perceptual Annotation



# Sort

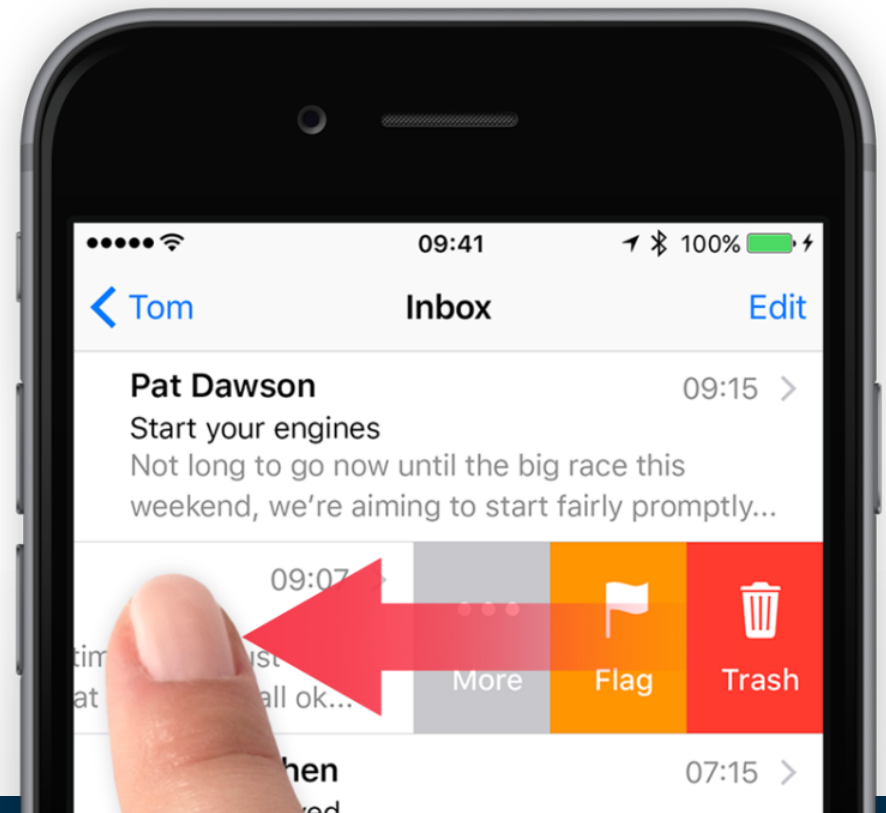
- Drag
- Keyboard (e.g., arrow keys)
- Sort by selection

Name	Position	Office	Age
Airi Satou	Accountant	Tokyo	33
Angelica Ramos	Chief Executive Officer (CEO)	London	47
Ashton Cox	Junior Technical Author	San Francisco	66
Bradley Greer	Software Engineer	London	41
Brenden Wagner	Software Engineer	San Francisco	28
Brielle Williamson	Integration Specialist	New York	61
Bruno Nash	Software Engineer	London	38
Caesar Vance	Pre-Sales Support	New York	21
Cara Stevens	Sales Assistant	New York	46
Cedric Kelly	Senior Javascript Developer	Edinburgh	22



# Deletion

- Select and apply
- Select and use keyboard (e.g., delete key)
- Drag out
- Swipe right or left



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