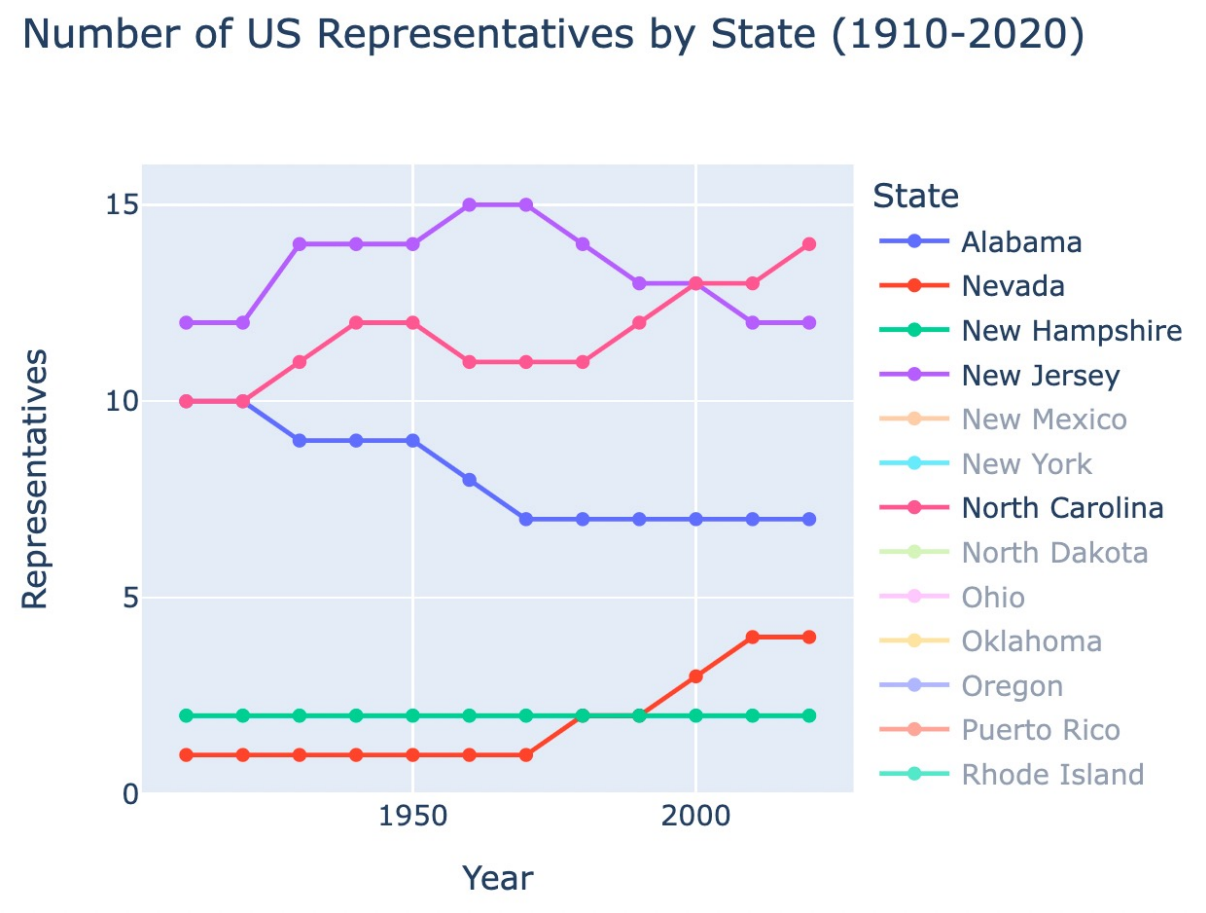
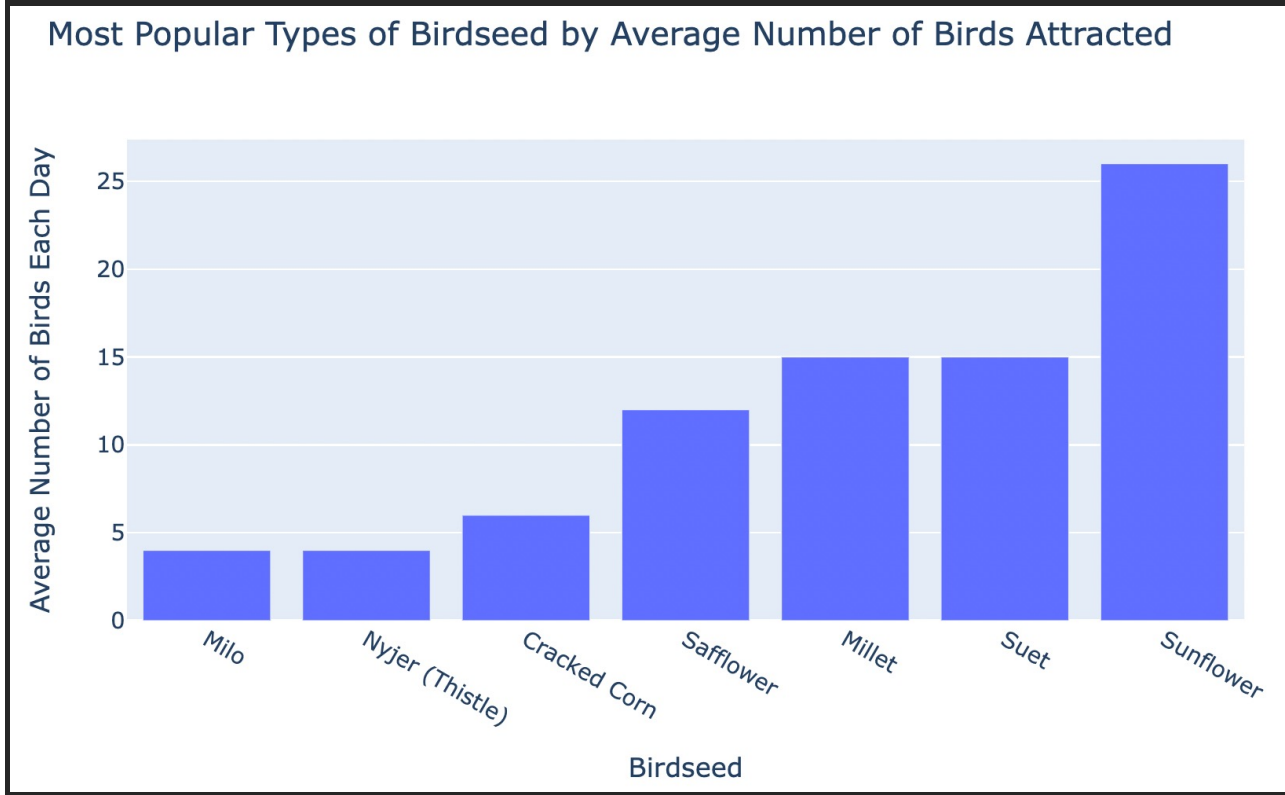
Bar Charts

One Way to Plot Categorical Data

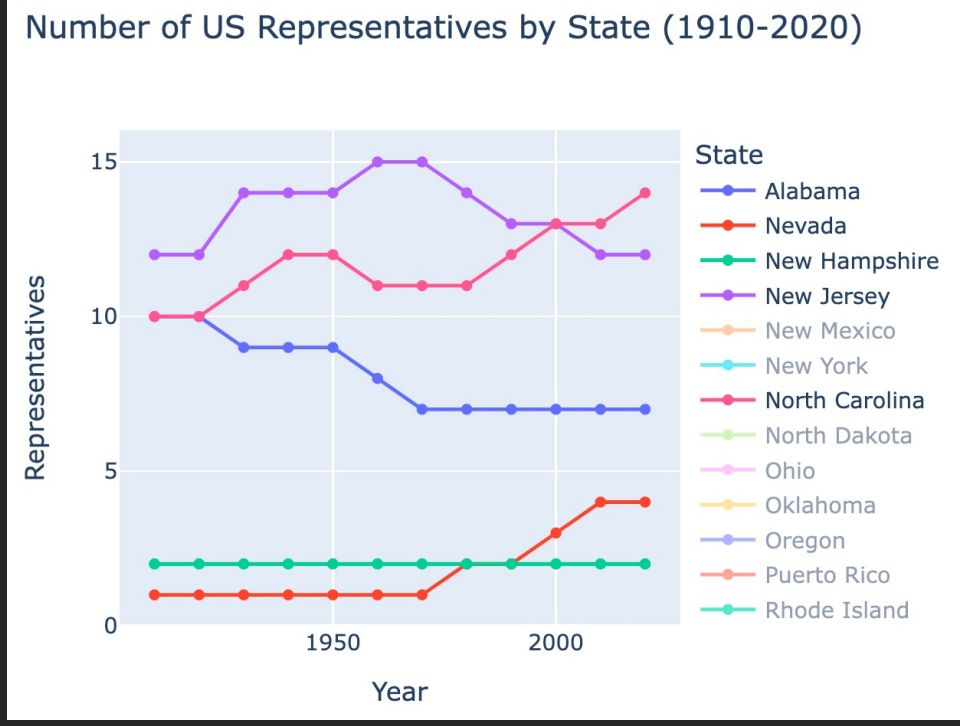
Think Share: Line Charts vs Bar Charts

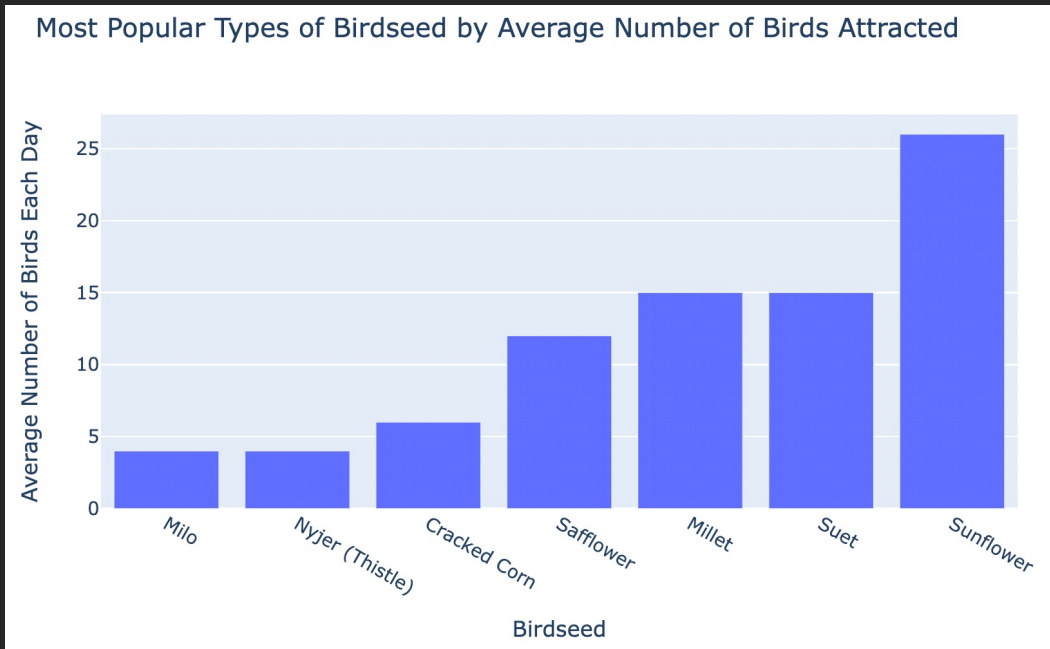




Line Charts vs Bar Charts

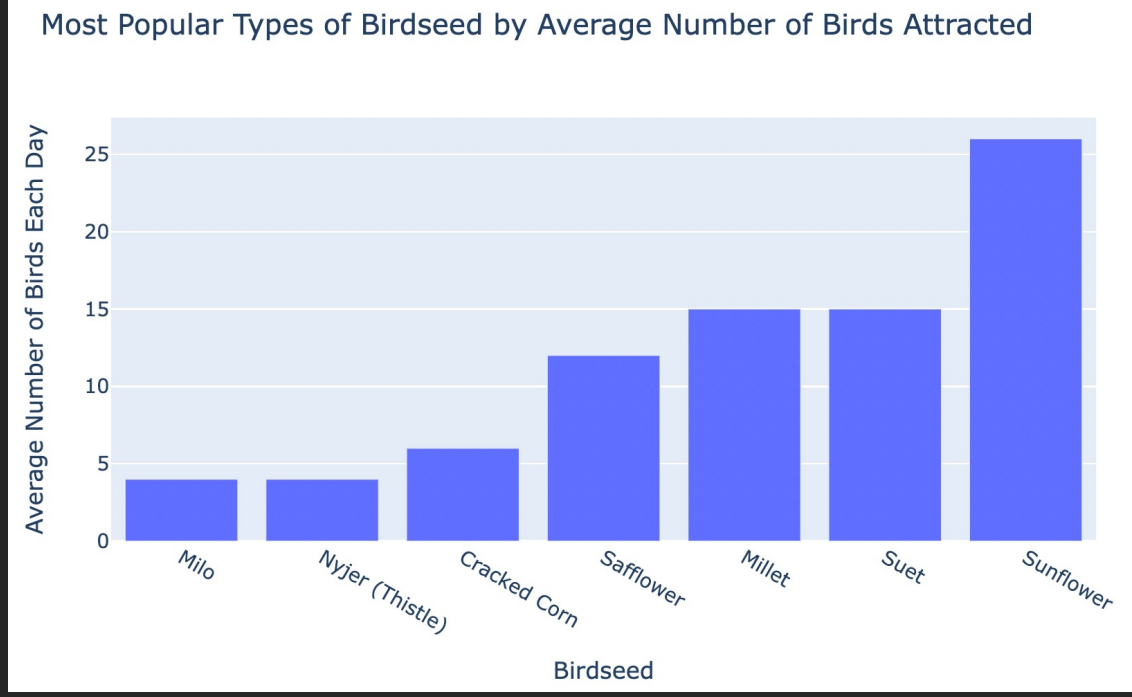
- Independent variable
  - Line: unit of time
  - Bar: any categorical data (or binned numerical data)
- Number of y values for each x (**Same!**)
  - Line: only one y for each x
  - Bar: only one y for each x
- Representation
  - Line: points connected by line
  - Bar: separate rectangles for each category where size indicates category's value

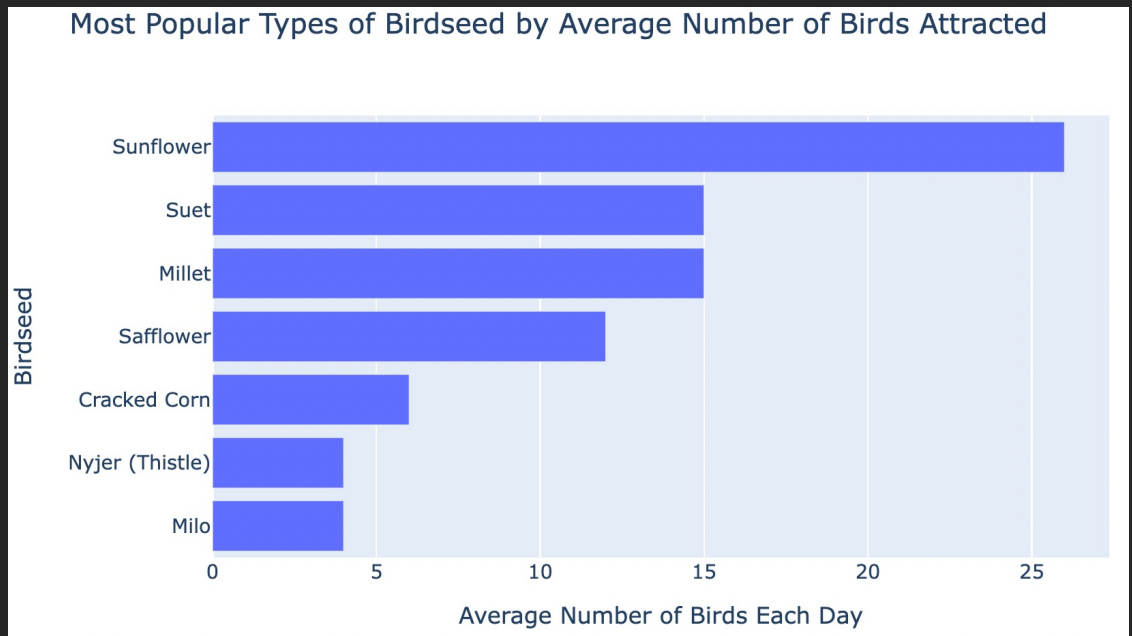




Bar Charts

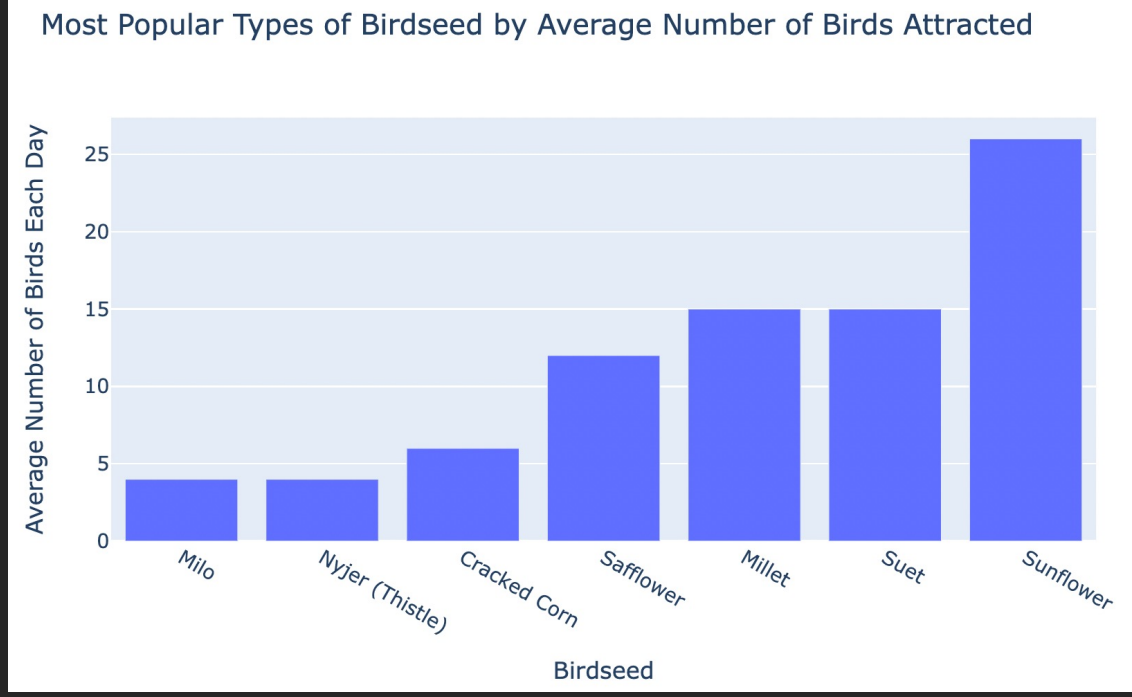
- Orientation can be vertical or horizontal!
- Still have independent and dependent variables but no longer synonymous with x and y
- Independent is the category, dependent is the category's value

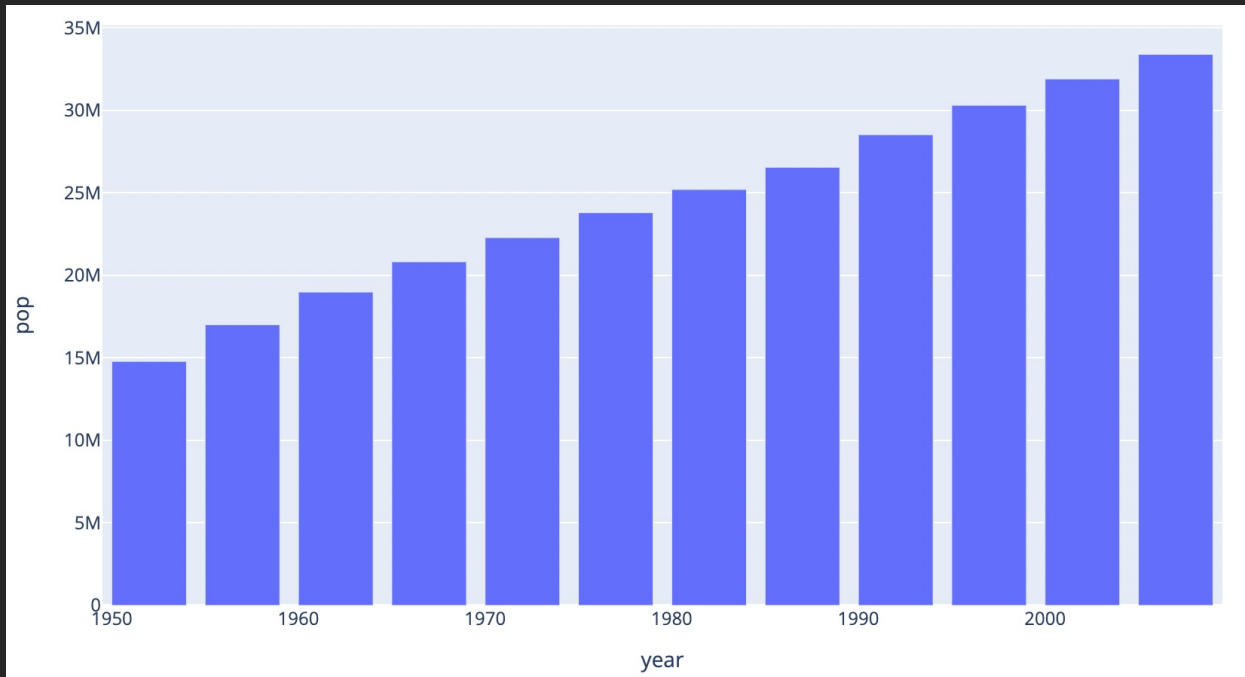




Bar Charts: Sorting

- In most cases, we want to sort the data to be able to show the strongest conclusions.
- We can sort by either category or values!
- If category has implicit ordering, we sort by that, otherwise by category values.





How-to: Make Bar Charts in Jupyter

1. Read CSV Data into Pandas Dataframe
   - Import Pandas Library
   - Read CSV data and Save in Variable
   - Sort Data
   - Display Dataframe Contents
2. Generate Plotly Line Chart
   - Import Plotly Express Library
   - Set Columns as category and value
   - Set Additional Plot Options (Optional)
   - Generate Chart

How-to: Switch Orientation of Bar Chart

- Vertical Orientation

```
px.bar(df, x=category, y=values, labels=labels, title=title)
```

How-to: Switch Orientation of Bar Chart

- Horizontal Orientation

```
px.bar(df, x=values, y=category, labels=labels, title=title)
```

Summary

- Bar charts
- Line charts vs bar charts
- Plotly bar charts with Blockly