Using Microsoft Excel for data management and analysis

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Outline

- Advantages and limitations to using Microsoft Excel
- Descriptive statistics
- Common formulas
- Basic charts
- Pivot tables
- Additional resources

Advantages and limitations

- Spreadsheets and workbooks
- Sorting and filtering
- Data types and data validation

Descriptive Statistics

- **Descriptive statistics**: To describe or summarize quantitative features

- **Inferential or inductive statistics**: To derive or predict values

- Mean, median, and mode are each **a measure of central tendency** involving a single variable
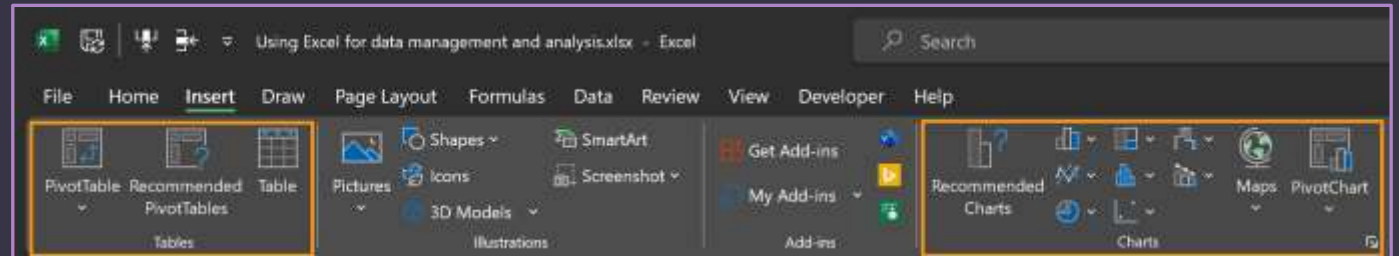
Common Functions

- **MEDIAN**(number1, [number2], …)
- **MODE.SNGL**(number1, [number2], …)
- **MODE.MULT**(number1, [number2], …)
- **SUM**(number1, [number2], …)
- **COUNT**(number1, [number2], …)
- **AVERAGE**(number1, [number2], …)
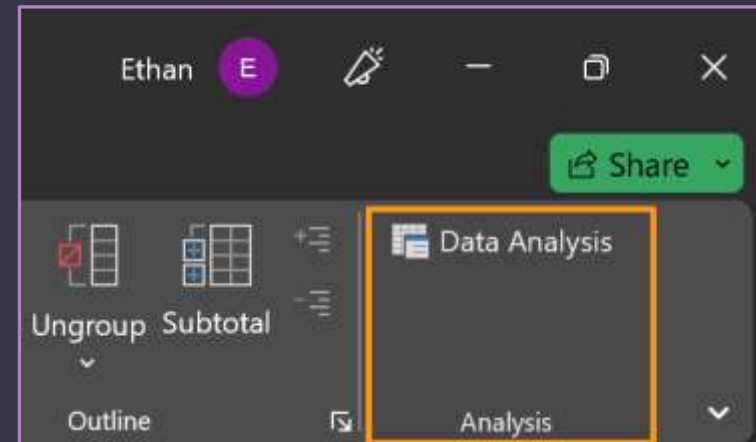
Ribbon Tabs and Groups

- **Insert**
  - Tables
  - Charts
- **Data**
  - Get & Transform Data
  - Data Analysis ([ToolPak](#))

Pivot Tables

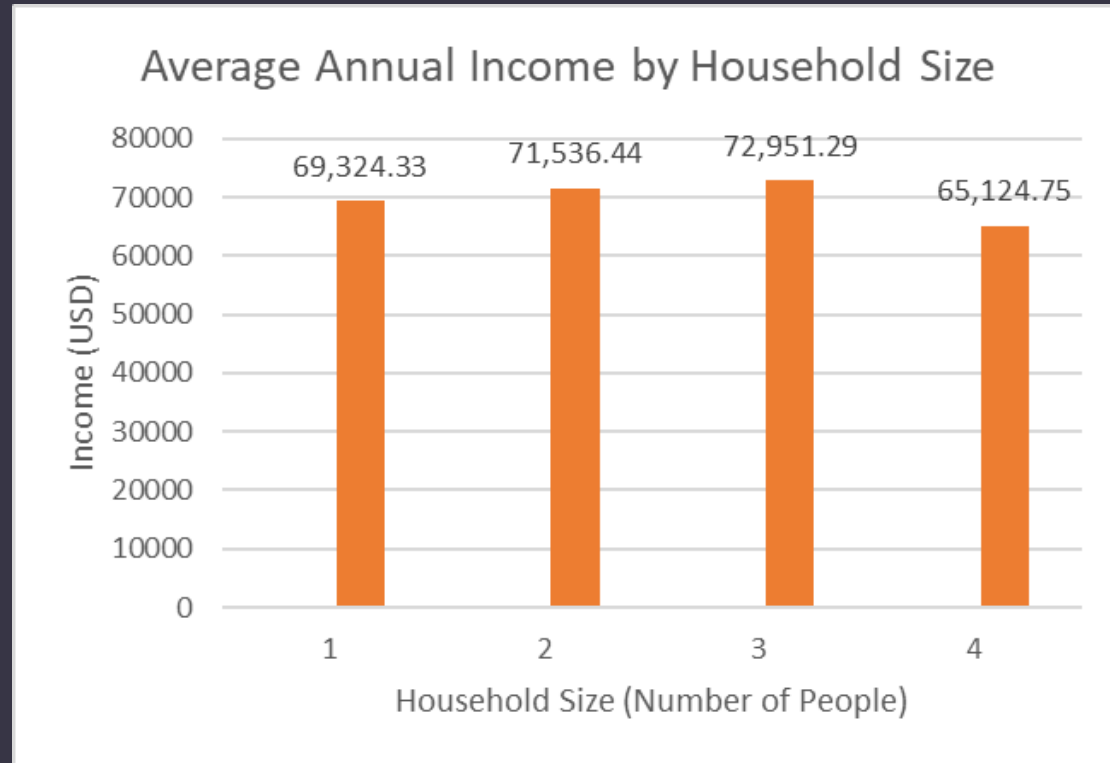- *"A PivotTable is an interactive way to quickly summarize large amounts of data. You can use a PivotTable to analyze numerical data in detail, and answer unanticipated questions about your data."* (Overview of PivotTables and PivotCharts)

	A	B	C	D
1	Row Labels ▼	Min of Annual Income	Average of Annual Income	Max of Annual Income
2	1	60386	69324.33	80446
3	2	60821	71536.44	79675
4	3	64773	72951.29	81323
5	4	61744	65124.75	73064
6	Grand Total	60386	70420.46	81323

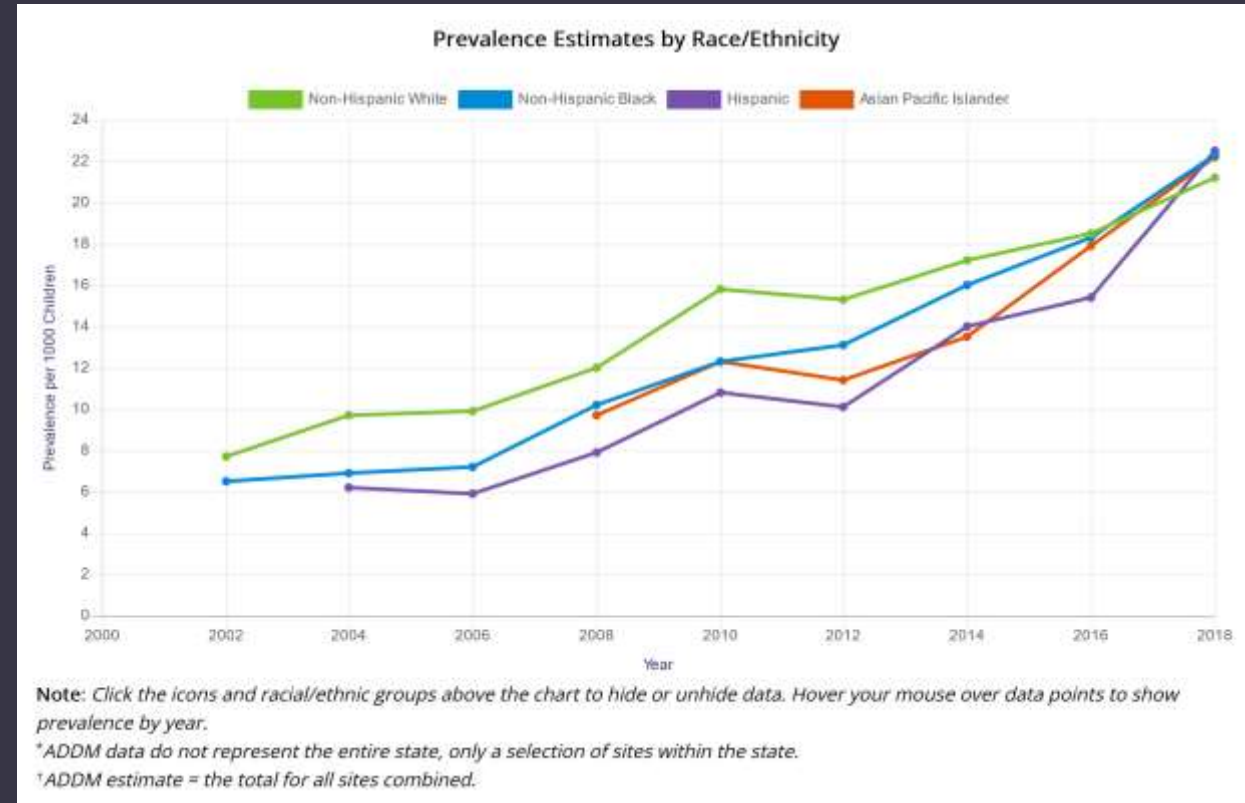# Overview of Simple Charts

- Bar or column chart
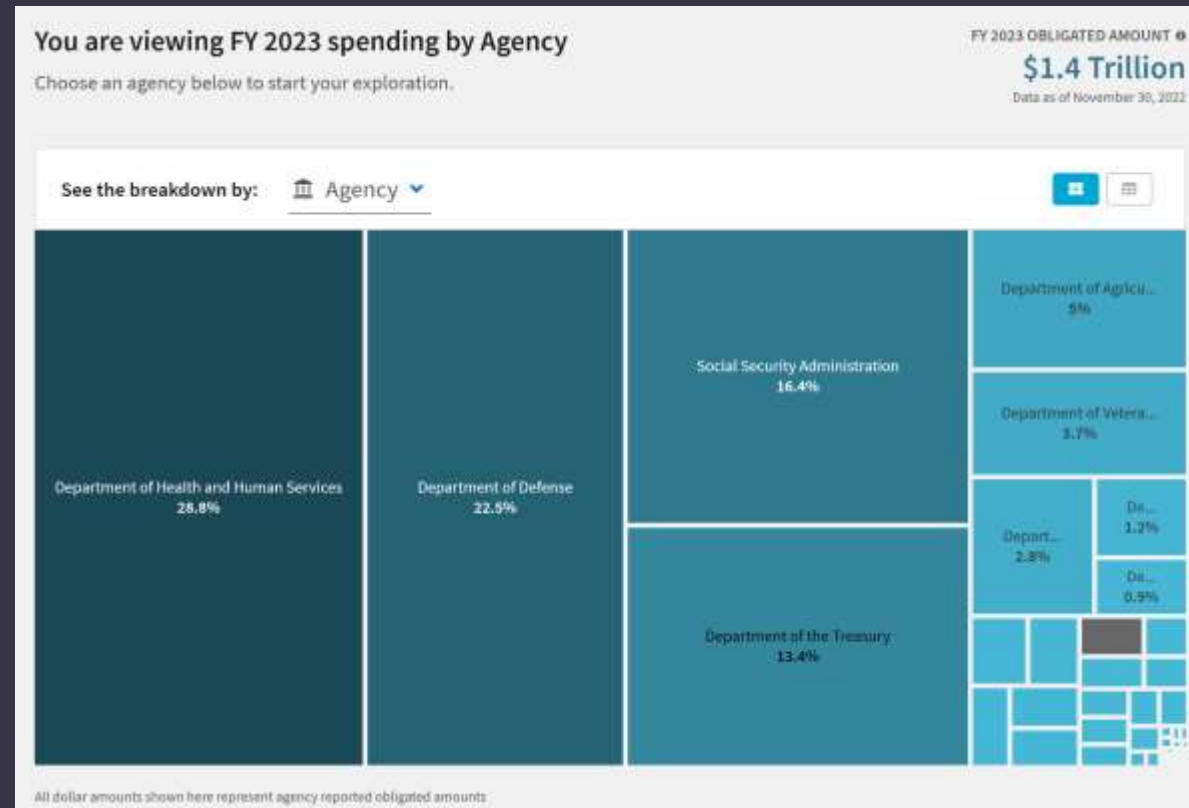- Line chart
- Pie chart

Overview of Simple Charts

- Bar or column chart
- Line chart
- Pie chart

Centers for Disease Control and Prevention. (2021). Autism data visualization tool. https://www.cdc.gov/ncbddd/autism/data/index.html

Overview of Simple Charts

- Bar or column chart
- Line chart
- Pie chart

U.S. Department of the Treasury. (n.d.). Spending explorer.
https://www.usaspending.gov/explorer/agency

Simple Charts in Excel

- Hovering will display a tooltip describing a chart's general use

Additional Resources

- **LibreOffice Calc and functions by category**
- **Microsoft**
- **Saylor Academy**: Spreadsheets, Spreadsheets II, Spreadsheets III