Data Visualization Series

Introduction to ggplot2

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29 SEPTEMBER 2021
What is ggplot2?

- Ggplot2 is a part of the R tidyverse and based on Wilkinson’s Grammar of Graphics.
- Incredibly useful, flexible, and relatively easy to implement with practice!
- It is maintained internationally by a team of developers through CRAN.
Advantages of using ggplot2

- Creates beautiful visualizations, with lots of options for colors, chart types, and more
- Works with many data types
- Useful for simple and complex data visualizations
- Excellent documentation; used extensively worldwide!
Ggplot2 Syntax

• Is simple and intuitive
• Graphics are creating by layering
• Includes options for storing your visualizations as R data objects, and for exporting them in different formats.
Ggplot2 Components

• Data

• Mapping (aesthetic attributes):
  ◦ Layers: geometric elements and statistical transformations
  ◦ Scales: map the values of the data to the values in the aesthetic space
  ◦ Coordinate system: how the data coordinates are transformed to the plane of the graphic
    Ex: Cartesian coordinate system
  ◦ Facets: how to subset or divide the data
  ◦ Themes: the font size, background colors, etc
Basic parts of ggplot

• No matter what visualization you are creating, it all begins with the basic function: ggplot()

• Ggplot(yourDataHere, aes() + moreFunctions())

• Works through layering and adding on each component of your plot.

• Today we will use geoms (geometric elements) to create line charts, boxplots, scatterplots, and bar charts.
Web-based Resources

- Ggplot2: Elegant Graphics for Data Analysis
- Ggplot2 cheat sheet
- Plotting anything with ggplot2 webinar
- R Graphics Cookbook
Resources at UGA

• Linked-in learning tutorials
• Previous and upcoming tutorials at the DigiLab
• DigiLab Data Consultations

DigiLab Data Consultations

Consultations for Data Cleaning, Structuring, and Visualizing

Whether just starting your work or trying to make sense of your research, schedule an appointment for our Data Consultations and bring your data (text, archival information, numerical data, etc.) for advice and guidance on your project. Expertise in corpus linguistics, Excel, and R, among other tools for data structuring and visualization.

To schedule an appointment visit:
DIGILAB.UGA.EDU/RESOURCES
Coming up next

Oct 6
Advanced ggplot2

Oct 13
Introduction to network analysis

Oct 20
Network analysis in Cytoscape

Oct 27
Mapping Geographical Data
Thanks for listening!

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Works Cited

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- Mejia, Mandy. 2013. 10 reasons to switch to ggplot. mandymejia.com
- Pederson, Thomas Lin. 2020. plotting anything with ggplot2 webinar. https://www.youtube.com/watch?v=h29g21z0a68