3 Adv Data Viz

1 Data Visualization
1. ggplot2 = Grammar of Graphics
   - ggplot2 builds plots by layering components
2. Aesthetics = Visual Mappings
   - inside aes(), you map variables to features of the plot
   - if it varies by data, it goes inside aes(); if it's fixed, it goes outside
3. Common Geoms
   - scatterplot: geom_point()
   - line plot: geom_line()
   - bar chart (counts): geom_bar()
   - bar chart (values): geom_col()
   - histogram: geom_histogram()
   - boxplot: geom_boxplot()
   - smooth/regression: geom_smooth()
4. Facetting = Small Multiples
   - show subsets of data in separate panels
5. Scales Control How Data Maps to Aesthetics
   - scales modify axes, colors, transformations, limits
6. Labels and Titles
   - use labs()
7. Themes Control the Overall Look
   - themes change backgrounds, grids, fonts, spacing
8. The ggplot2 Workflow
   - start with ggplot() and a geom
   - add aesthetics
   - add more layers (points, lines, smoothing)
   - use facetting to compare groups
   - adjust scales if needed
   - add labels
   - apply a theme
9. Typical Mistakes to Avoid
   - forgetting aes()
   - putting fixed aesthetics inside aes()
   - missing + at the end of lines
   - using wrong geoms for data type