

HUDK 4050: CORE METHODS IN EDM

News



Game On: Teachers Should Continue to Gamify Classrooms

Use Google, Microsoft and others to bring an element of fun to learning.



What Can Machine Learning Really Predict in Education?



States Are Adopting More Computer Science Policies. Are High Schools Keeping Up?



18 SEP 2018 NEWS

FBI Warns Parents of Edtech Security Risk



Research Dispels Myth that Adult Students Don't Cheat in Online Classes

Vectr

This week will not be anonymous...

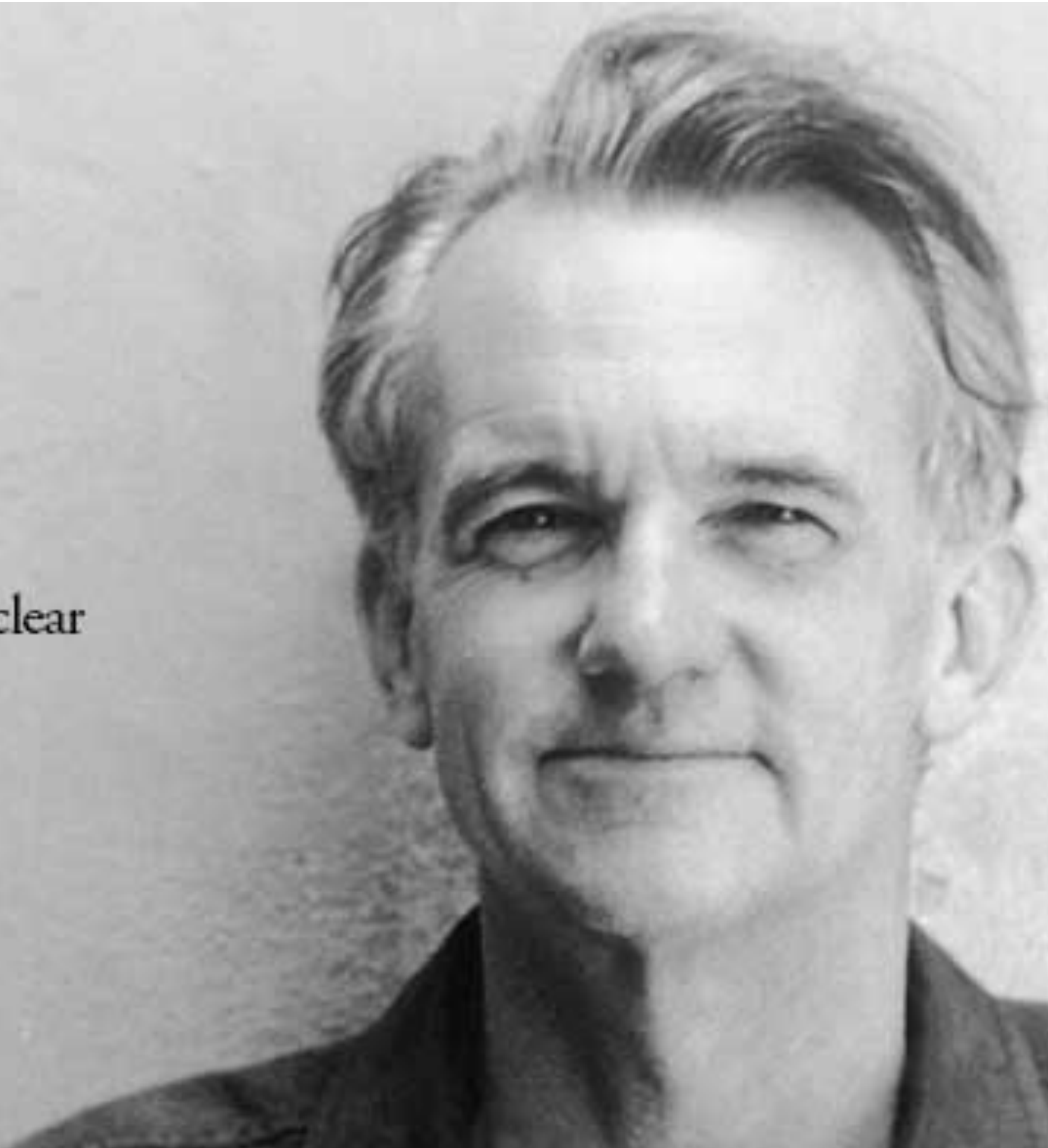
Events

Title	Date	Link
Changing the Airline Industry Beyond the Aircraft	5:00pm October 4	https://events.columbia.edu/cal/event/eventView.do?b=de&calPath=%2Fpublic%2Fcals%2FMainCal&guid=CAL-00bb9e24-655b8449-0165-5e0596df-00001917events@columbia.edu&recurrenceId=
Learning Analytics in Physical Spaces	12:00pm October 2	https://events.nyu.edu/#!/view/event/event_id/215979
Limits of Algorithmic Fairness	1:00pm October 5	https://events.columbia.edu/cal/event/eventView.do?b=de&calPath=%2Fpublic%2Fcals%2FMainCal&guid=CAL-00bb9e24-655b8449-0165-5e0596df-00001917events@columbia.edu&recurrenceId=
DSI Data Art Contest	Due October 5	https://events.columbia.edu/cal/event/eventView.do?b=de&calPath=%2Fpublic%2Fcals%2FMainCal&guid=CAL-00bb9e25-660aa178-0166-0c7f857a-00001aa1events@columbia.edu&recurrenceId=
Book Launch: Uberland	October 25	https://www.indiebound.org/book/9780520298576)
People centric approach to optimize Data Science, Commercial impact and Leadership	10:30am November 14	https://events.columbia.edu/cal/event/eventView.do?b=de&calPath=%2Fpublic%2Fcals%2FMainCal&guid=CAL-00bb9e24-655b8449-0165-5e0ea7e9-00001957events@columbia.edu&recurrenceId=
Big Data for Intelligence Symposium	Washington DC, October 16 - 17	http://bigdatasymposium.dsigroup.org/

Visualization II

"Good design is a lot like clear
thinking made visual."

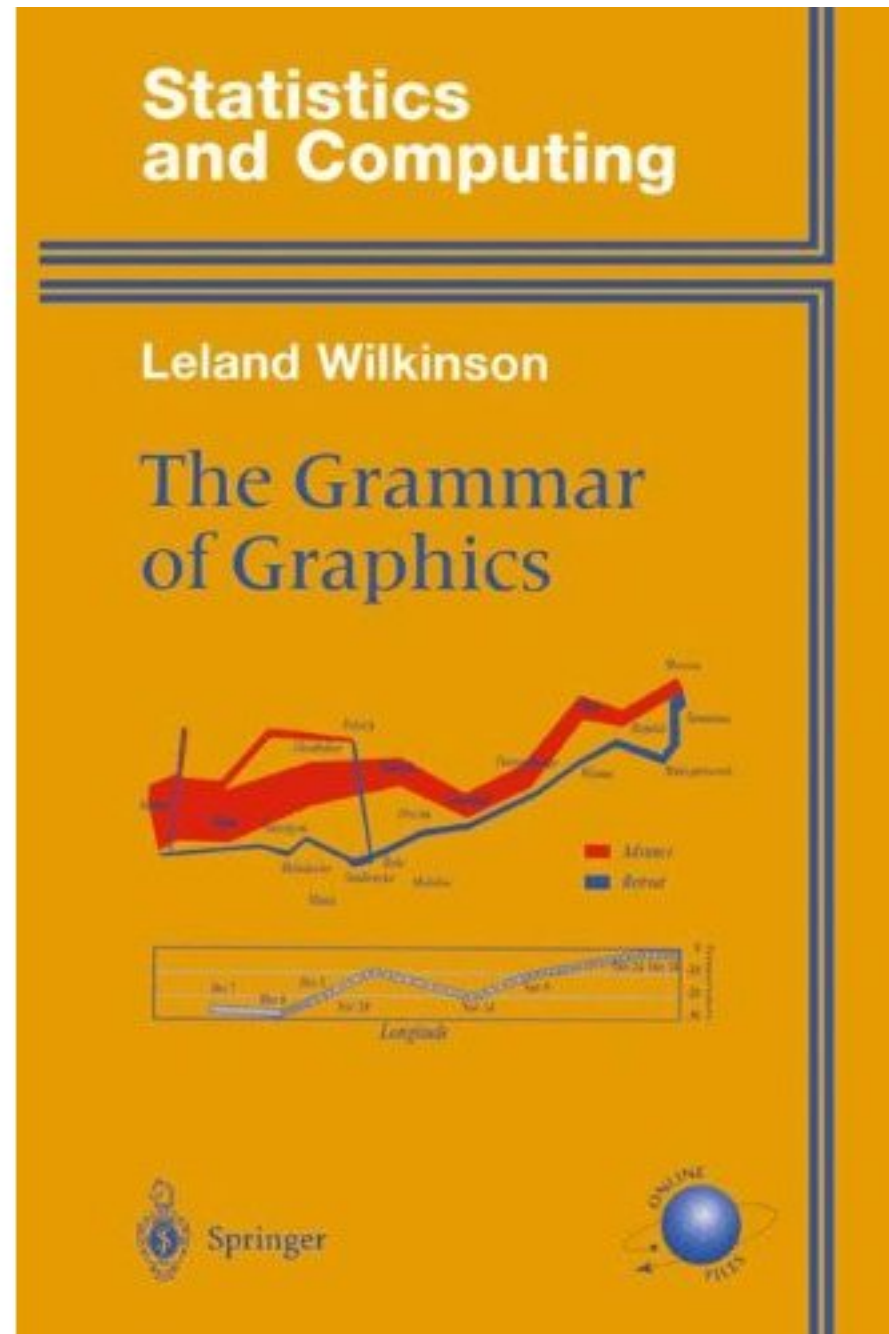
– Edward Tufte





Edward Tufte

- Got his start when he taught stats
- Hates powerpoint
- Chartjunk
 - Non-informative or obscuring parts of charts
- Lie factor
 - If something changes by a factor of 2, and the graphic shows that it changed by a factor of 4, then the lie factor is 2.
- Data-Ink Ratio
 - Portion of the graphic that can be erased without loss of meaning
- Data density
 - Portion of graph that is devoted to displaying data



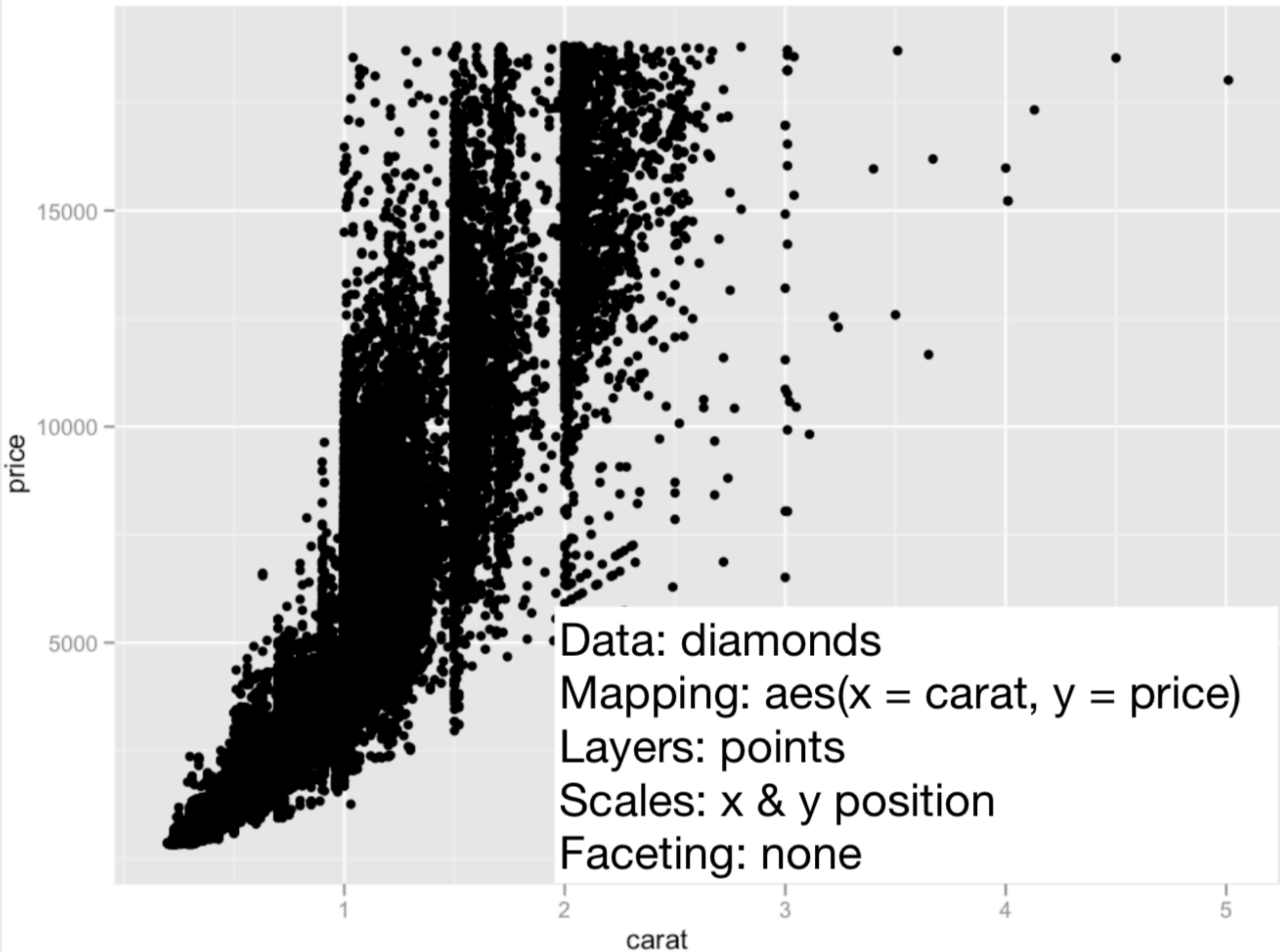
Leland Wilkinson

- Grammar of Graphics
- Make sense of/order graphical elements
- Make learning, testing and communicating about data easier



Hadley Wickham

- ggplot2
- Tries to implement the Grammar of Graphics in code
- Plots are made of: Layers
 - Data set
 - Aesthetic mapping
 - Scales for each aesthetic
 - Facets
 - Coordinate systems



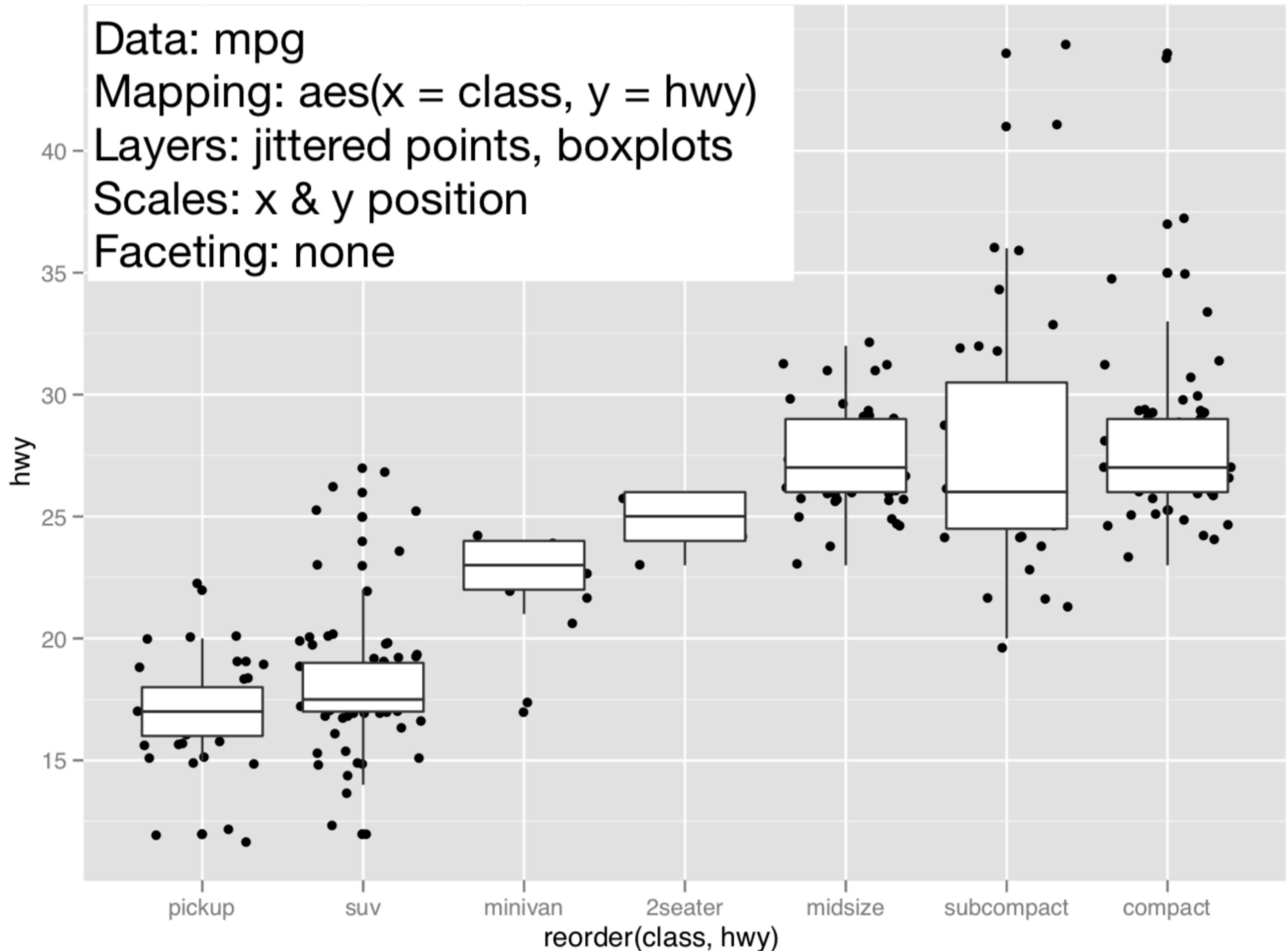
Data: mpg

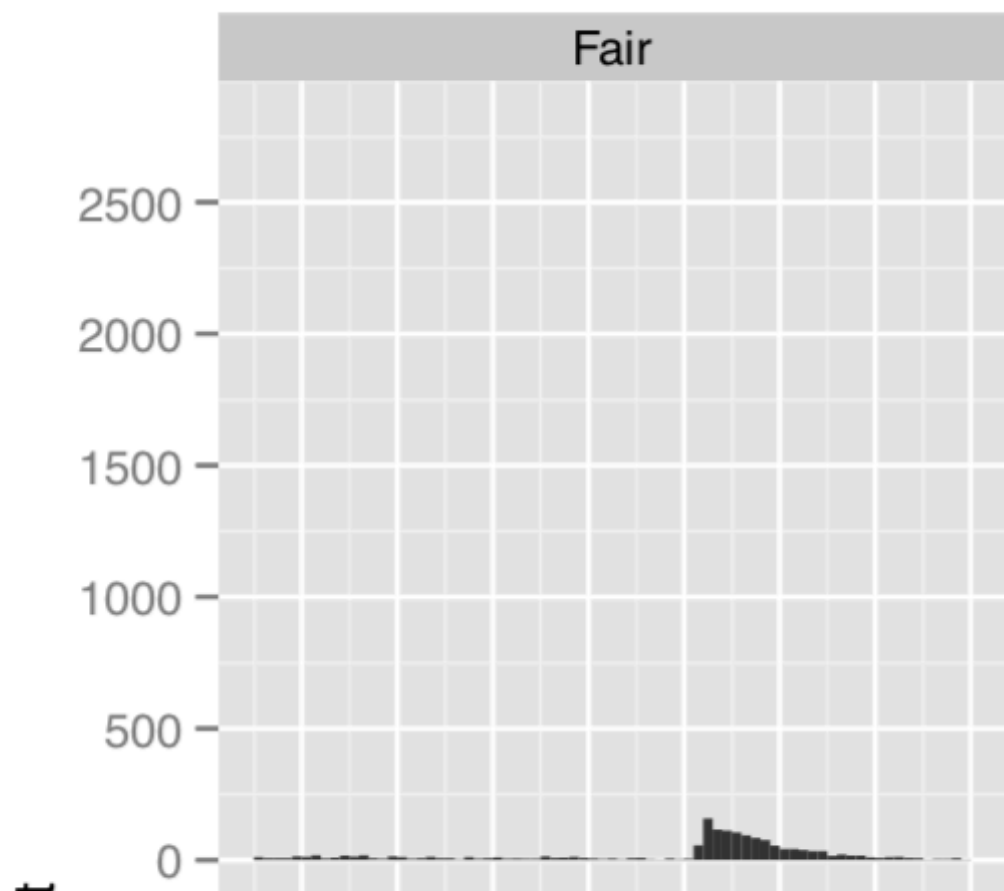
Mapping: aes(x = class, y = hwy)

Layers: jittered points, boxplots

Scales: x & y position

Faceting: none





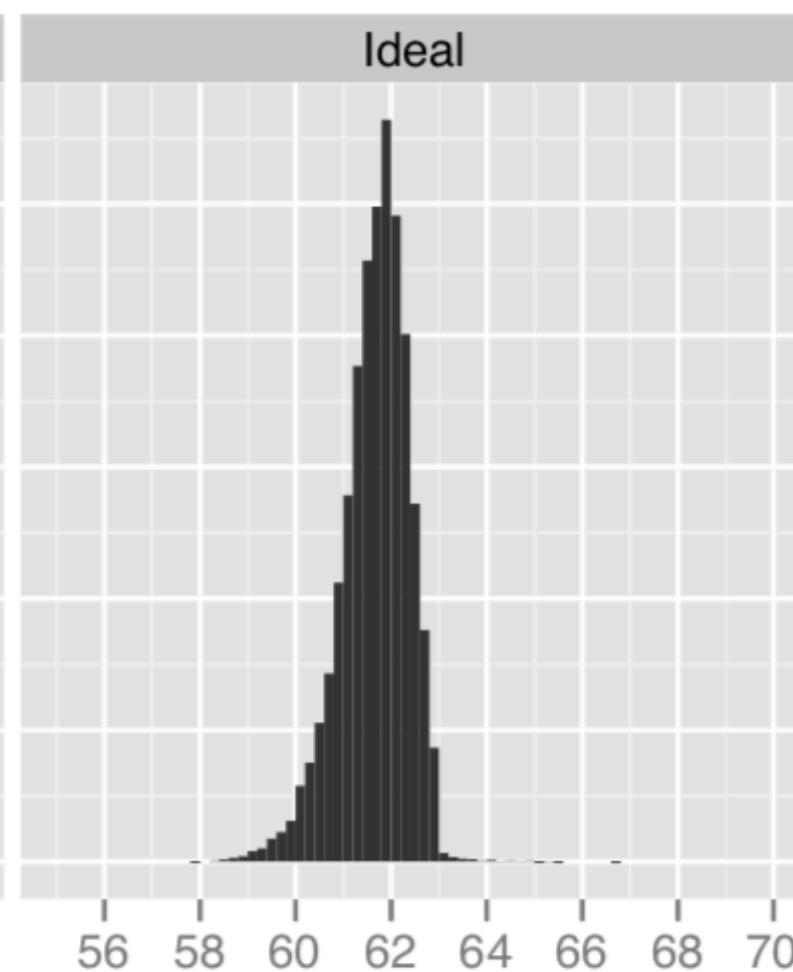
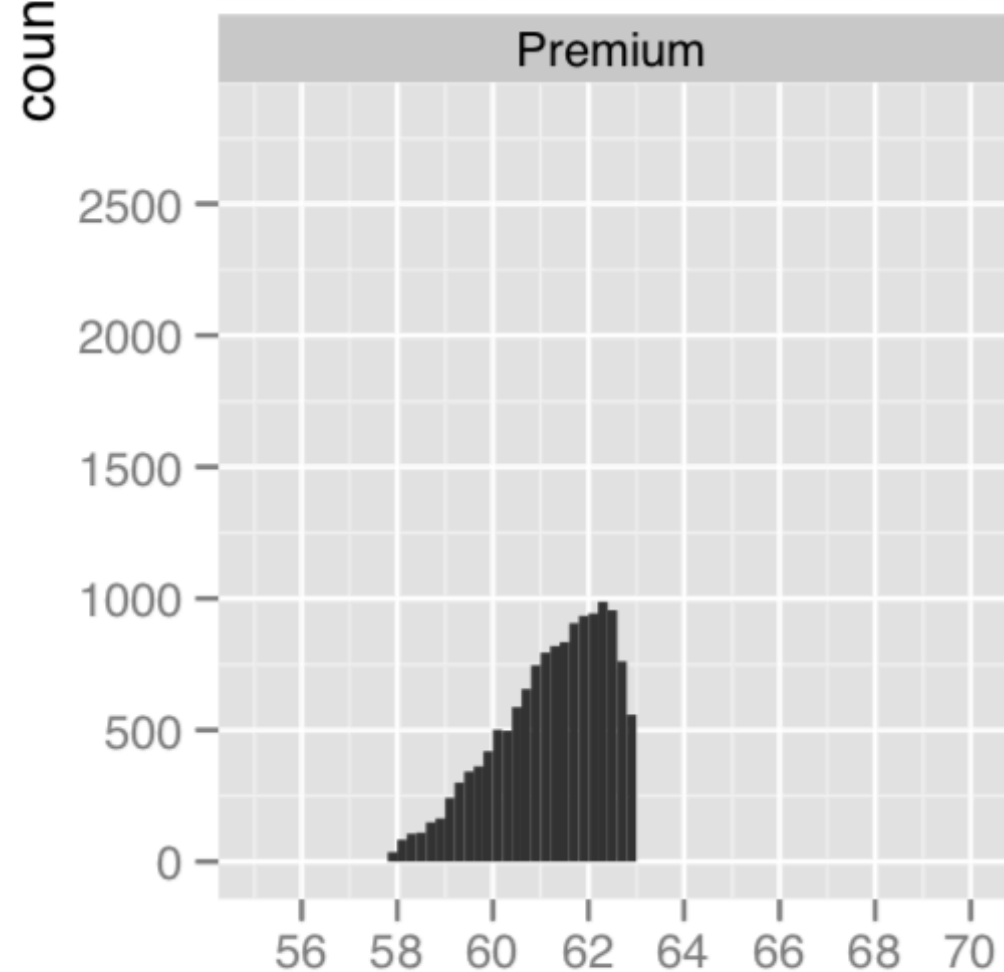
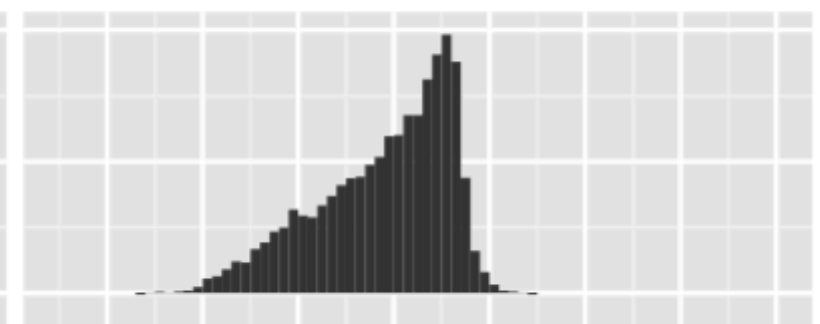
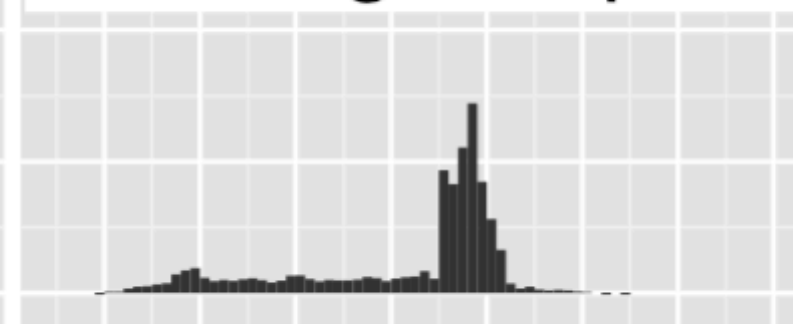
Data: diamonds

Mapping: aes(x = depth, y = ..count..)

Layers: histogram

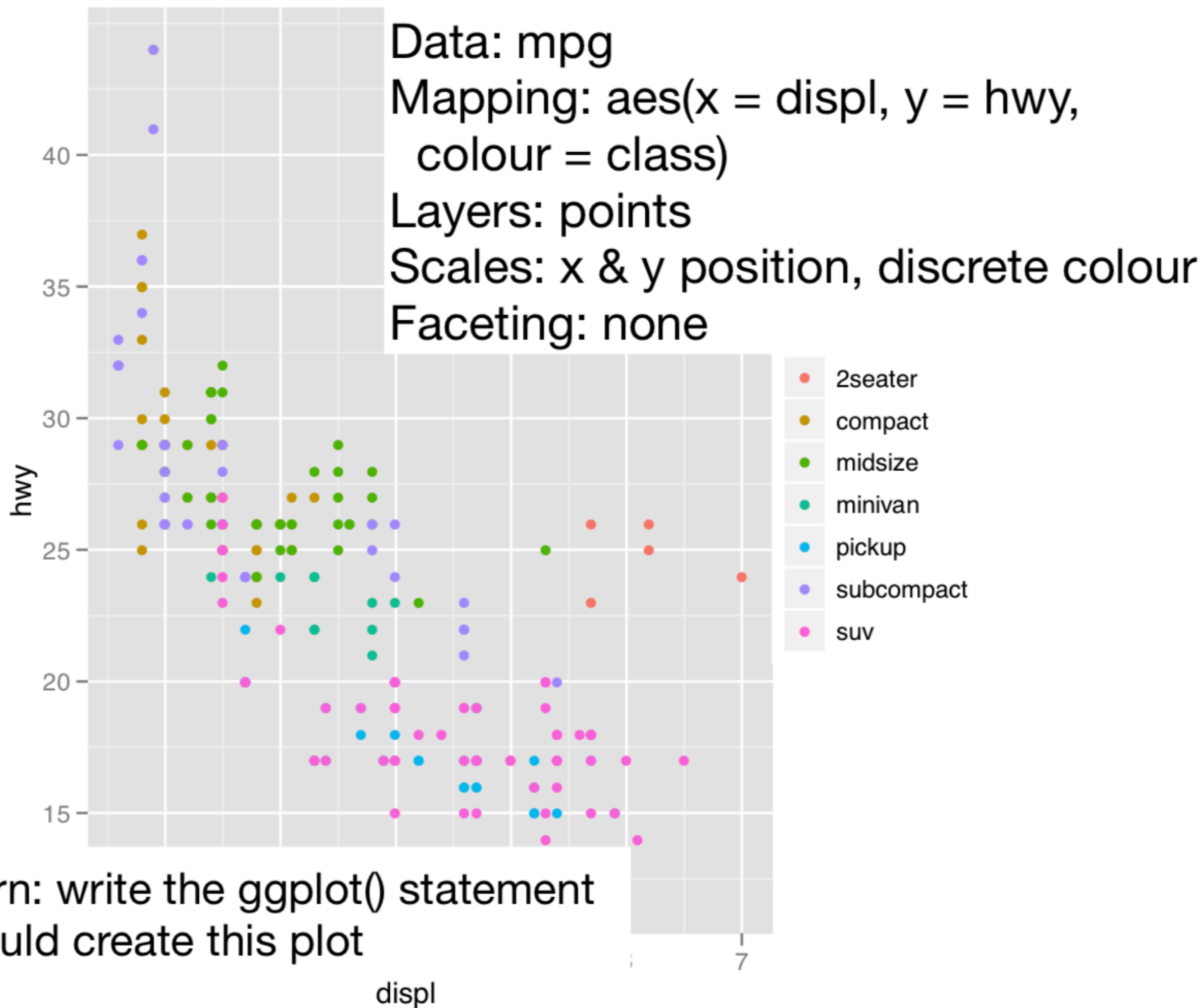
Scales: x & y position

Faceting: wrap cut



56 58 60 62 64 66 68 70

depth



Your turn: write the `ggplot()` statement that would create this plot

/class-activity-3

[https://ggplot2.tidyverse.org/
reference/index.html](https://ggplot2.tidyverse.org/reference/index.html)

<http://www.cookbook-r.com/Graphs/>