

Impact of Biological Factors on Product Effectiveness

CMDA 4864 Capstone

Clean Data

October 14, 2022

General Stuff

- ▶ You can make lists
 - ▶ Sub-items are indented
 - ▶ So are sub-sub-items
- ▶ And you can do in-line LaTeX: $e^{i\pi} + 1 = 0$
- ▶ Or in-line R syntax: `mean(mtcars$mpg)`
- ▶ LaTeX blocks are also supported:

$$\sum_{i=1}^n \phi_i \frac{\mathbf{u}_i^T \mathbf{b}}{\sigma_i} \mathbf{v}_i$$

Code Example

- Code outputs with normal font size can use up vertical space quickly

```
# This output is normal size and takes up space  
head(mtcars)
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

Smaller Code

- ▶ The size parameter can be used to change code and output size
- ▶ It accepts standard LaTeX sizes:
 - ▶ Huge > huge > LARGE > Large > large > normalsize > small > footnotesize > scriptsize > tiny

This output is footnotesize and takes up less space

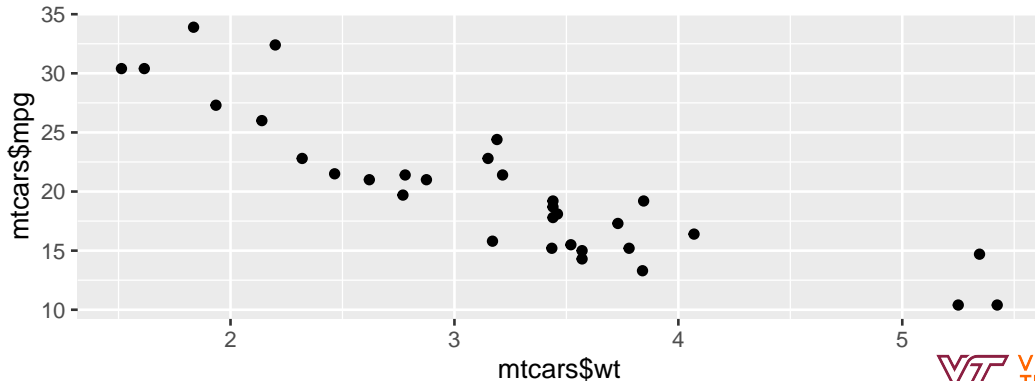
```
head(mtcars)
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

Plot Example

- Use `fig.width / fig.height` to scale plots

```
# Code with {r fig.width = 6, fig.height = 2.25}  
qplot(x = mtcars$wt, y = mtcars$mpg)
```



Handling Overflow I

- ▶ Sometimes code output will be too long for a single slide
- ▶ Adding `{.allowframebreaks}` to the title of a slide lets it overflow onto a second slide
- ▶ For this slide the header is `## Handling Overflow {.allowframebreaks}`

```
# Intentionally long output
```

```
head(mtcars, 18)
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4

Handling Overflow II

Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4
Merc 280C	17.8	6	167.6	123	3.92	3.440	18.90	1	0	4	4
Merc 450SE	16.4	8	275.8	180	3.07	4.070	17.40	0	0	3	3
Merc 450SL	17.3	8	275.8	180	3.07	3.730	17.60	0	0	3	3
Merc 450SLC	15.2	8	275.8	180	3.07	3.780	18.00	0	0	3	3
Cadillac Fleetwood	10.4	8	472.0	205	2.93	5.250	17.98	0	0	3	4
Lincoln Continental	10.4	8	460.0	215	3.00	5.424	17.82	0	0	3	4
Chrysler Imperial	14.7	8	440.0	230	3.23	5.345	17.42	0	0	3	4
Fiat 128	32.4	4	78.7	66	4.08	2.200	19.47	1	1	4	1

- ▶ Output is continued to the second slide automatically
- ▶ The slide title automatically incremented
- ▶ The navigation dot does not advance

About References

- ▶ The References slide is created from a BibTeX (.bib) file declared at the top of this file
- ▶ Citation style is defined from a .cs1 file also declared at the top of this file
- ▶ Use `nocite` to include a citation in the bibliography without referencing it directly
- ▶ References can be cited in the presentation with `@referenceName` eg `@ggplotBg`:
Nagraj (2016)
- ▶ Zotero is a good tool for building citation files: <https://zbib.org/>
- ▶ There are 1400+ citation style files available:
<https://github.com/citation-style-language/styles>
- ▶ `{.allowframebreaks}` can be useful if there are many citations

References

“Get, Set, and Modify the Active Theme - Theme_get.” n.d. Accessed December 13, 2021.

https://ggplot2.tidyverse.org/reference/theme_get.html.

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<https://bookdown.org/yihui/rmarkdown/>.

Kaplan, Jacob. n.d. *R Markdown Crime by the Numbers: A Criminologist's Guide to R*. Accessed

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Nagraj, V. P. 2016. “Transparent Ggplot2 Plot Backgrounds.”

<https://www.nagraj.net/notes/transparent-background-with-ggplot2/>.

“R - Code Chunk Font Size in Rmarkdown with Knitr and Latex - Stack Overflow.” n.d. Accessed

December 13, 2021. <https://stackoverflow.com/questions/25646333/code-chunk-font-size-in-rmarkdown-with-knitr-and-latex/46526740#46526740>.