MLExpResso Cheat Sheet

MI DATA LAB

Expression

Data

```
library(MLExpRessodata)
expr <- BRCA_mRNAseq_chr17[ ,-1]
group <- BRCA_mRNAseq_chr17[ ,-1]
group <- ifelse(group=='LumA', 'LumA', 'other')
```

Tests

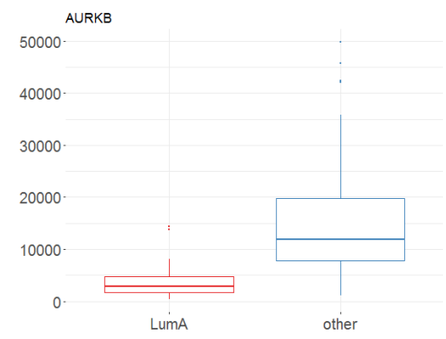
Testing for differences.

MLExpResso::calculate_test(data=expr, condition=group, test='lrt')

'ttest'	student's t-test
'nbinom2'	negative binomial test
'lrt'	likelihood-ratio test
'qlf'	quasi-likelihood F-test

Plots

MLExpResso::plot_diff_boxplot(data=expr, condition=group, gene='AURKB')



Methylation

Data

Tests

Plots

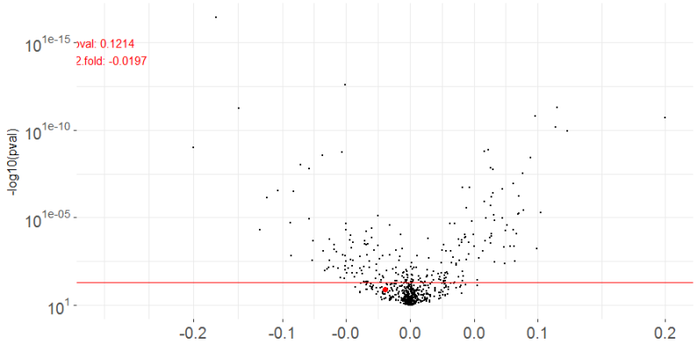
Visualizations

Plot_volcanoes()

CACNA1G

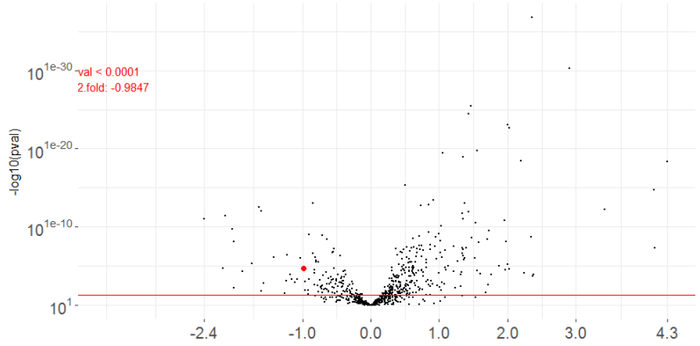
Methylation

	min	1st Q	med	mean	3rd Q	max	count
LumA	0.05	0.14	0.19	0.21	0.27	0.49	155
other	0.04	0.13	0.2	0.23	0.31	0.63	166

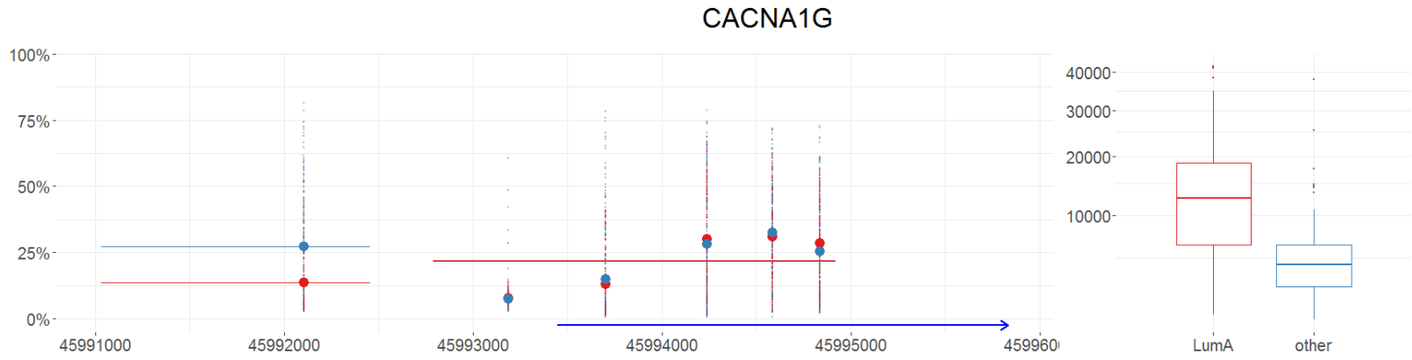


Expression (cpm)

	min	1st Q	med	mean	3rd Q	max	count
LumA	977	6351	12628	14302	18716	41717	47
other	752	2556	4360	6185	6314	37883	53



Plot_gene()



Four Column layout Cheat Sheet

Your LOGO

Basics

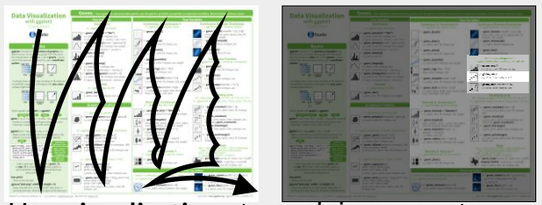
Thank you for making a new cheatsheet for R! These cheatsheets have an important job:

Cheatsheets make it easy for R users

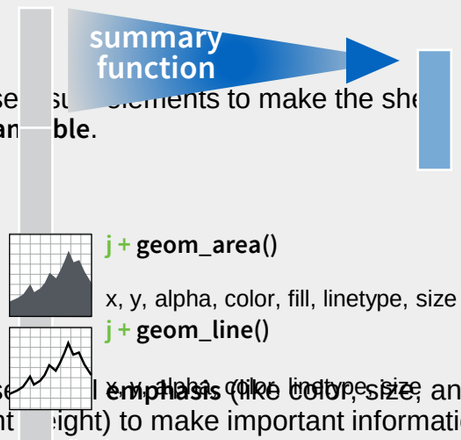
to look up useful information.

Remember that the best cheatsheets are **visual**—not written—documents. Whenever possible use visual elements to make it easier for readers to find the information they need.

1. Use a **layout** that flows and makes it easy to zero in on specific topics.



2. Use **visualizations** to explain concepts quickly and concisely.



3. Use **emphasis** (like color, size, and font weight) to make important information easy to find.

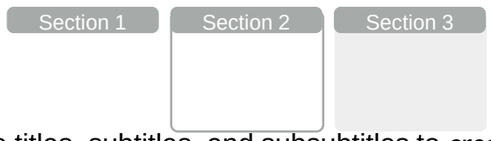
dplyr::**bind_rows(y, z)**

Append z to y as new rows.

Title - Group sections with titles, subtitles, and subsubtitles to create a visual hierarchy

Layout suggestions

Use headers, outlines, and/or backgrounds to **separate or group together sections**.



Use titles, subtitles, and subsubtitles to **create a visual hierarchy** that will help users navigate the page.

Title

Subtitle

Subsubtitle

Fit sections to content. Try several different layouts.

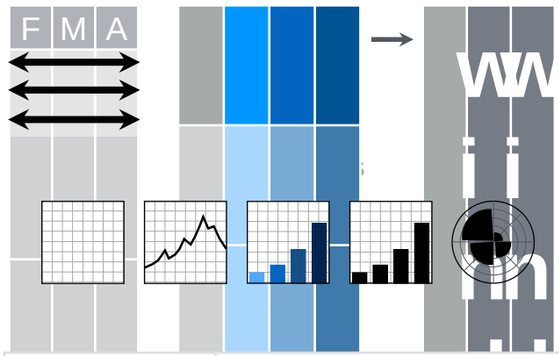
Use numbers or arrows to link sections if the order/**flow** is confusing.

Useful elements

icons

These are just font awesome characters

Mock tables



expect_equal()	is equal within small numerical tolerance?
expect_identical()	is exactly equal?
expect_match()	matches specified string or regular expression?
expect_output()	prints specified output?

Subtitle

Example code

Where possible, use **code that works** when run.

dplyr::**lead**
Copy with values shifted by 1.
dplyr::**lag**
Copy with values lagged by 1.
dplyr::**dense_rank**
Ranks with no gaps.
dplyr::**min_rank**
Ranks. Ties get min rank.
dplyr::**percent_rank**
Ranks rescaled to [0, 1].
dplyr::**row_number**
Ranks. Ties got to first value.
dplyr::**ntile**
Bin vector into n buckets.
dplyr::**between**
Are values between a and b?
dplyr::**cume_dist**
Cumulative distribution.

Color Scheme

Please use the following **color scheme** when designing new cheatsheets to be distributed through http://www.rstudio.com/resources/cheatsheets/

Greys - Programming topics

Purples - Reporting topics (knitr, R Markdown, etc.)

Blues - Shiny or RStudio related

Greens - Data Visualization

Warm Colors - Data Manipulation and modeling topics

Keynote

I make my cheatsheets in **Apple Keynote**, and not latex or R Markdown, because presentation software makes it much easier to tweak the visual appearance of a document

Code snippets

```
ggplot(mpg, aes(hwy, cty)) +
 geom_point(aes(color = cyl)) +
 geom_smooth(method ="lm") +
 coord_cartesian() +
 scale_color_gradient() +
 theme_bw()
```

Word balloons — can be useful for — explaining code

Keynote tips

- **Select multiple elements** by holding down shift and then selecting each. Click on a selected element before letting go of shift to unselect it.
- To **group elements together.** Select them all , then click Arrange > Group
- To **evenly space multiple objects**, select them all then Right Click > Align objects or Right Click > Distribute objects
- Click on a table, then visit Format >Table > Row and Column Size to make **even width rows/columns**.

Fonts

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Three Column layout Cheat Sheet

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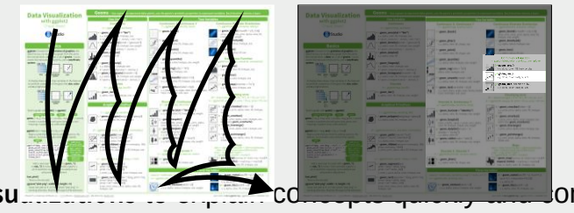
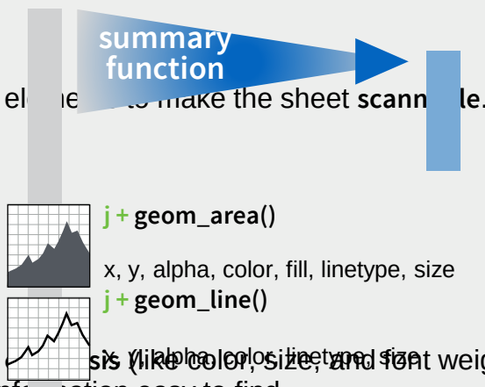


2. Use **visu** **co** **oncisely.**

3. Use visual el **e** **s** make the sheet **scann** **le.**



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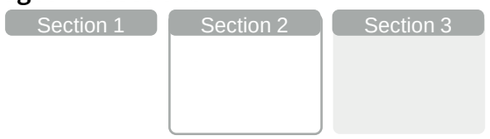
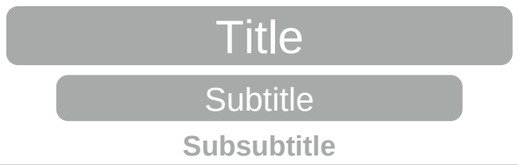


Create a visual hierarchy. Help users navigate the page with titles, subtitles, and subsubtitles



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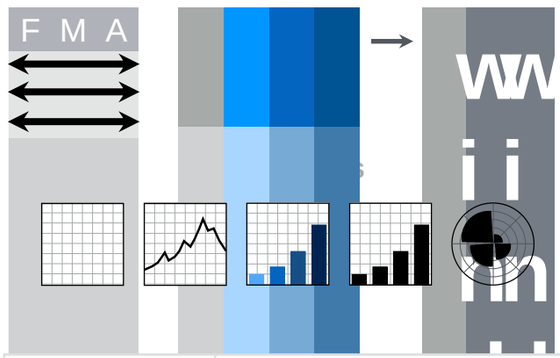

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