RStudio.Cloud

Dave Hurst

BARUG Sep-2020

Using RStudio Cloud to Teach and Collaborate

Dave Hurst

RStudio.cloud is a cloud-hosted R environment and project workspace that includes the the RStudio IDE. (Just like the RStudio IDE, there is a free version.) In this talk, we'll illustrate some of the features that make RStudio Cloud an ideal teaching environment with a mini-workshop on some of the fundamentals of the tidyverse.

What's in it in for me?

```
whats_in_it_4me = case_when(

    u_new_to_tidyverse == TRUE ~
        "Resources and the most fundamental operator"

    u_teach_students == TRUE ~
        "Resources and an amazing training platform

    u_hate_mucking_with environments == TRUE ~
        "Cloud based R platform"

    TRUE ~ NA )
```

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Tidyverse training resources

An incomplete list…

- Blog: Teaching the Tidyverse in 2020 - Part 1: Getting started Mine Çetinkaya-Rundel
  https://education.rstudio.com/blog/2020/07/teaching-the-tidyverse-in-2020-part-1-getting-started/

- education.rstudio.com
  - https://education.rstudio.com/trainers#info
  - https://education.rstudio.com/teach/

- https://datasciencebox.org/
  - "let them eat cake first"

- rstudio.cloud

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Tidyverse learning resources

An incomplete list…

- education.rstudio.com
  - https://education.rstudio.com/learn/

- R for Data Science: https://r4ds.had.co.nz/
  - Slack: r4ds.io/join

- **rstudio.cloud**

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Start with the core packages

Start with the core packages from https://www.tidyverse.org/packages/#core-tidyverse .

- **ggplot2**: data visualisation
- **dplyr**: data wrangling
- **readr**: reading data
- **tibble**: modern data frames
- **stringr**: string manipulation
- **forcats**: dealing with factors
- **tidyr**: data tidying
- **purrr**: functional programming

magrittr

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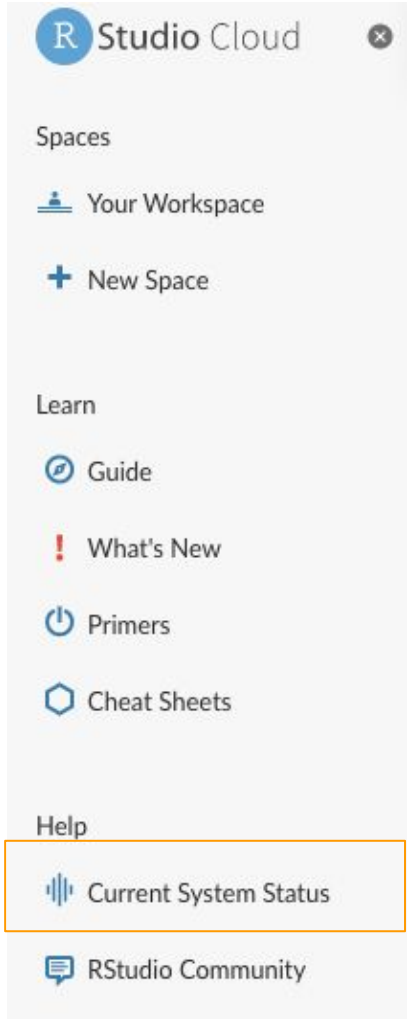
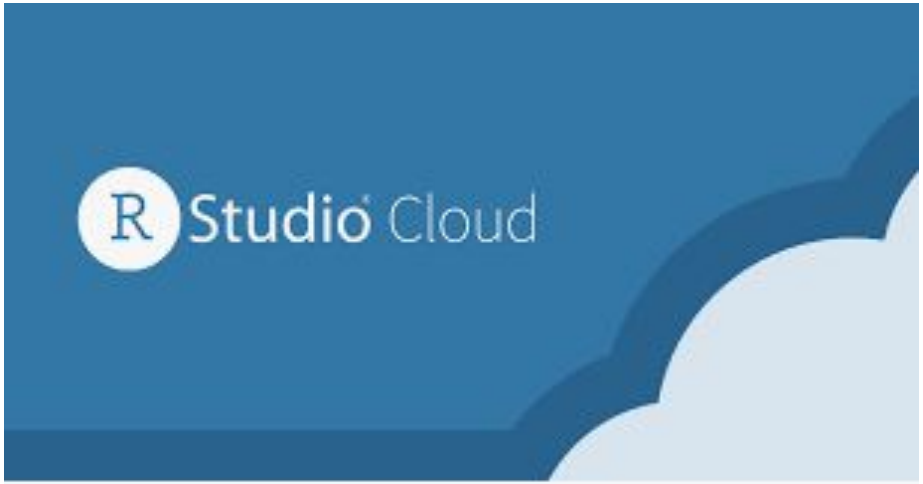


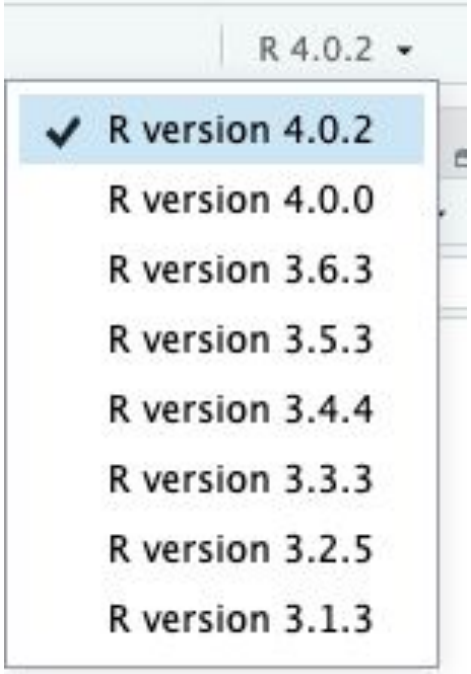
RStudio Cloud General Availability of the https://rstudio.cloud service.	Operational
shinyapps.io General Availability of the https://shinyapps.io service.	Operational
Global CRAN Mirror The cloud.r-project.org and cran.rstudio.com mirrors	Operational
RPubs R Markdown publishing platform at https://rpubs.com	Operational
Package Manager General Availability of the https://packagemanager.rstudio.com service	Operational

Managing your R environment

```
> sessionInfo()
R version 4.0.2 (2020-06-22)
Platform: x86_64-pc-linux-gnu (64-bit)
Running under: Ubuntu 16.04.6 LTS

Matrix products: default
BLAS:   /usr/lib/atlas-base/atlas/libblas.so.3.0
LAPACK: /usr/lib/atlas-base/atlas/liblapack.so.3.0

locale:
 [1] LC_CTYPE=C.UTF-8       LC_NUMERIC=C
 [3] LC_TIME=C.UTF-8        LC_COLLATE=C.UTF-8
 [5] LC_MONETARY=C.UTF-8    LC_MESSAGES=C.UTF-8
 [7] LC_PAPER=C.UTF-8       LC_NAME=C
 [9] LC_ADDRESS=C           LC_TELEPHONE=C
[11] LC_MEASUREMENT=C.UTF-8 LC_IDENTIFICATION=C

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods
[7] base

other attached packages:
[1] forcats_0.5.0   stringr_1.4.0   dplyr_1.0.2     purrr_0.3.4
[5] readr_1.3.1     tidyr_1.1.2     tibble_3.0.3    ggplot2_3.3.2
[9] tidyverse_1.3.0

loaded via a namespace (and not attached):
 [1] Rcpp_1.0.5       cellranger_1.1.0 pillar_1.4.6     compiler_4.0.2
 [5] dbplyr_1.4.4     tools_4.0.2      jsonlite_1.7.0   lubridate_1.7.9
 [9] lifecycle_0.2.0  gtable_0.3.0     pkgconfig_2.0.3  rlang_0.4.7
[13] reprex_0.3.0     cli_2.0.2        DBI_1.1.0        rstudioapi_0.11
[17] haven_2.3.1      withr_2.2.0      xml2_1.3.2       httr_1.4.2
[21] fs_1.5.0         generics_0.0.2   vctrs_0.3.4      hms_0.5.3
[25] grid_4.0.2       tidyselect_1.1.0 glue_1.4.2       R6_2.4.1
[29] fansi_0.4.1      readxl_1.3.1     modelr_0.1.8     blob_1.2.1
[33] magrittr_1.5     backports_1.1.9  scales_1.1.1     ellipsis_0.3.1
[37] rvest_0.3.6      assertthat_0.2.1 colorspace_1.4-1 stringi_1.4.6
[41] munsell_0.5.0    broom_0.7.0      crayon_1.3.4
>
```

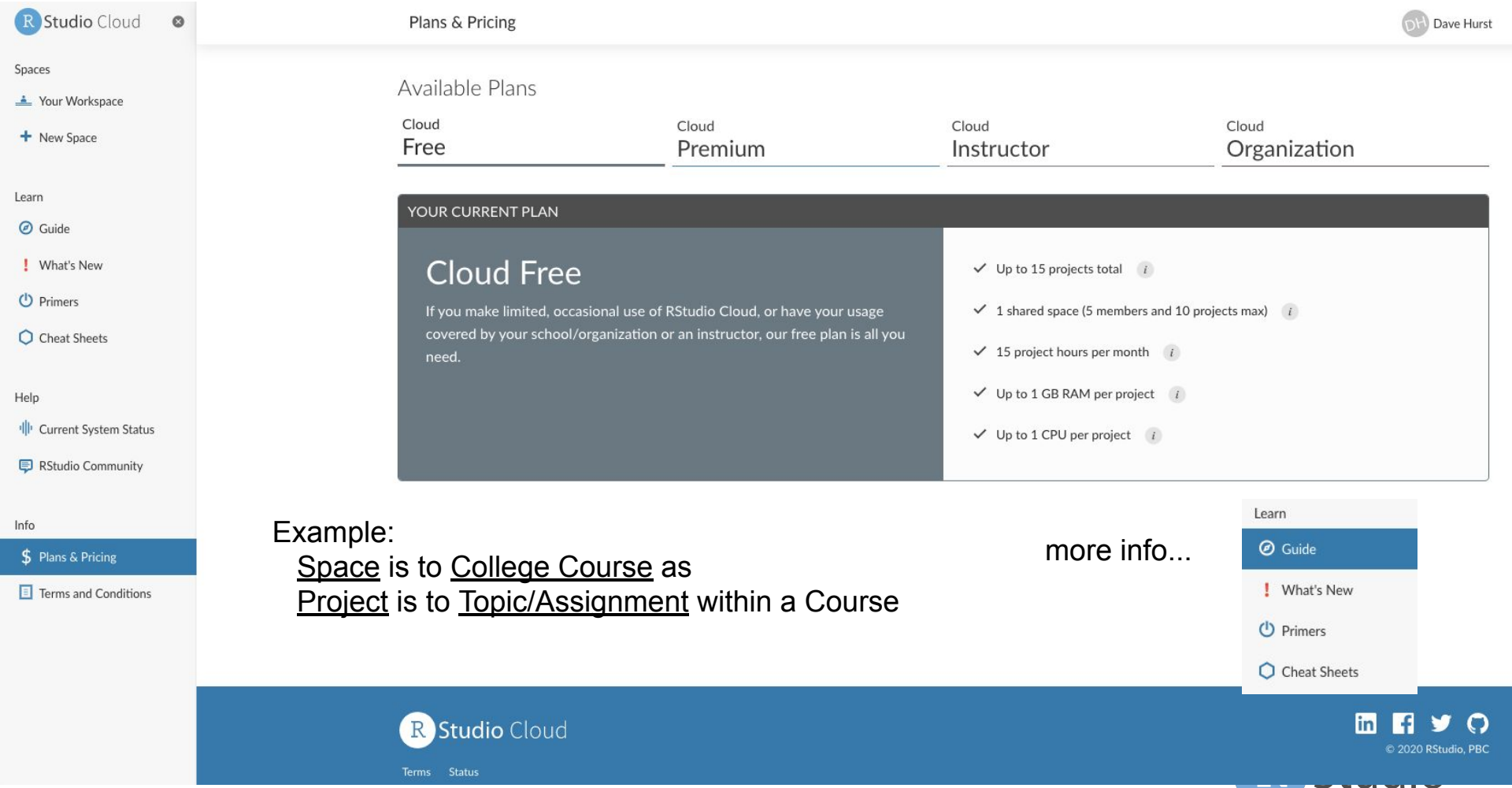
Managing your R environment






```
> library(tidyverse)
── Attaching packages ─────────────────────────────────── tidyverse 1.3.0 ──
✓ ggplot2 3.3.2     ✓ purrr   0.3.4
✓ tibble  3.0.3     ✓ dplyr   1.0.2
✓ tidyr   1.1.2     ✓ stringr 1.4.0
✓ readr   1.3.1     ✓ forcats 0.5.0
```

RStudio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Cloud Free
Cloud Premium
Cloud Instructor
Cloud Organization
YOUR CURRENT PLAN
Cloud Free
If you make limited, occasional use of RStudio Cloud, or have your usage covered by your school/organization or an instructor, our free plan is all you need.
Up to 15 projects total
1 shared space (5 members and 10 projects max)
15 project hours per month
Up to 1 GB RAM per project
Up to 1 CPU per project
Example:
Space is to College Course as
Project is to Topic/Assignment within a Course
more info...
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Guide
What's New
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Studio Cloud
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Status
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Spaces
- Your Workspace
- BARUG X-sessions
- CIS 435 Example
- Connect Forecasting Examp
- Data Product Examples
- Reproducible Finance
- RS BD
- New Space

Learn
- Guide
- What's New
- Primers
- Cheat Sheets

Help
- Current System Status
- RStudio Community
- Technical Support

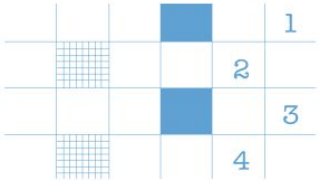
Studio Primers

Learn data science basics with the interactive tutorials below.

The Basics

Start here to learn the skills that you will rely on in every analysis (and every primer that follows): how to inspect, visualize, subset, and transform your data, as well as how to run code.

Work with Data

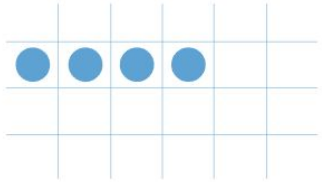


Learn the most important data handling skills in R: how to extract values from a table, subset tables, calculate summary statistics, and derive new variables.

Visualize Data

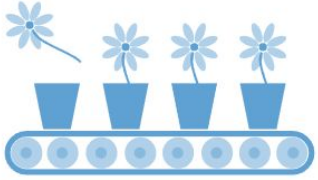
Learn how to use ggplot2 to make any type of plot with your data. Then learn the best ways to visualize patterns within values and relationships between variables.

Tidy Your Data



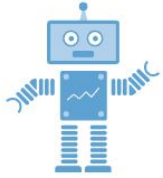
Unlock the tidyverse by learning how to make and use tidy data, the data format designed for R.

Iterate



Master a core programming paradigm with the purrr package: for each ____ do ____.

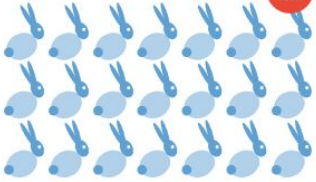
Write Functions



Functions are the key to programming in R. This primer will teach you how to write and use your own reusable functions.

Report Reproducibly

COMING SOON



Learn to report, reproduce, and parameterize your work with the best authoring format for Data Science: R Markdown.

Build Interactive Web Apps

COMING SOON

Say hello to Shiny, R's package for building interactive web apps. Learn to turn your analyses into elegant tools to share with others

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Space Usage

Stats 101 with R | Projects | Members | Info

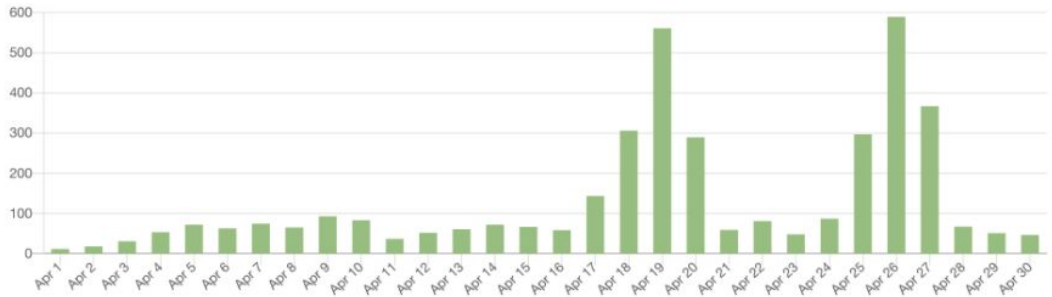
Go to the Space Usage area (by clicking the chart icon to the right in the top nav) to view usage metrics for the space.

You can view summary usage and activity information for the space, and data for individual members and their projects.

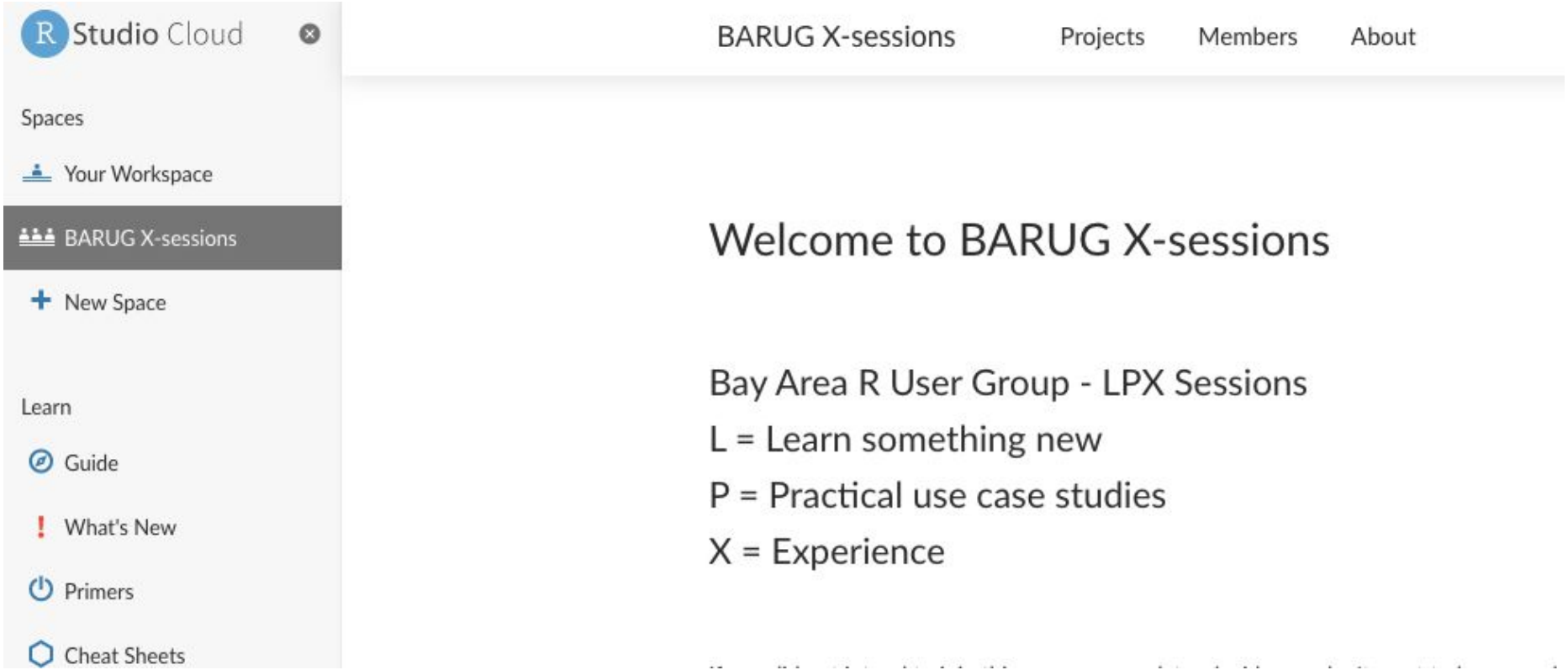
Overview

Project Hours	Active Members	Active Projects
3900.03	105	344
USED THIS PERIOD	THIS PERIOD	THIS PERIOD

Project Hours



http://bit.ly/barug_cloud



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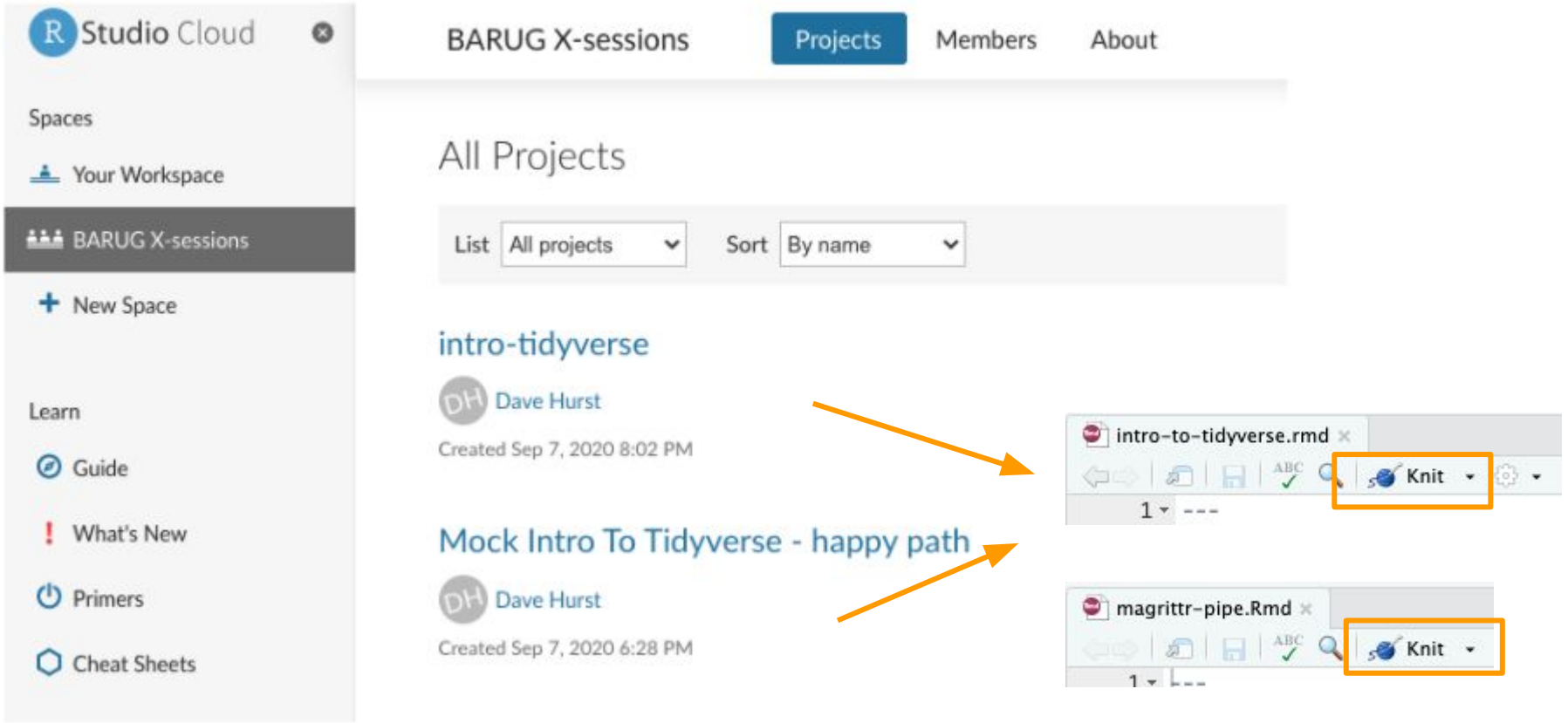
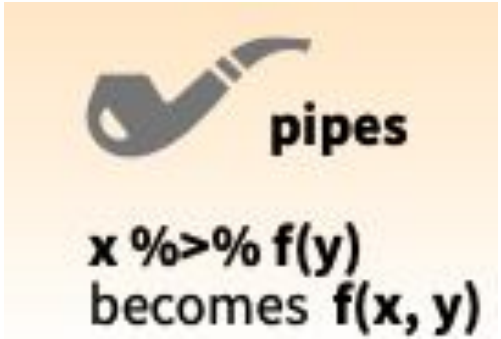


Q&A

%>%
Ceci n'est pas un pipe.
www.tidyverse.org


pipes
x %>% f(y)
becomes f(x, y)

Shift M

Ctrl

Data wrangling pipelines

```
trailing_4q <- rollify(sum, window = 4)

qtr_12mo <- all_open %>%
    group_by(account_name, fiscal_year, fiscal_quarter)%>%
    summarise(revenue = sum(total_price * is_won))%>%
    ungroup() %>%
    complete(account_name, fiscal_year, fiscal_quarter, fill = list(revenue = 0))%>%
    arrange(account_name, fiscal_year, fiscal_quarter)%>%
    group_by(account_name) %>%
    mutate(t12 = trailing_4q(revenue))
```

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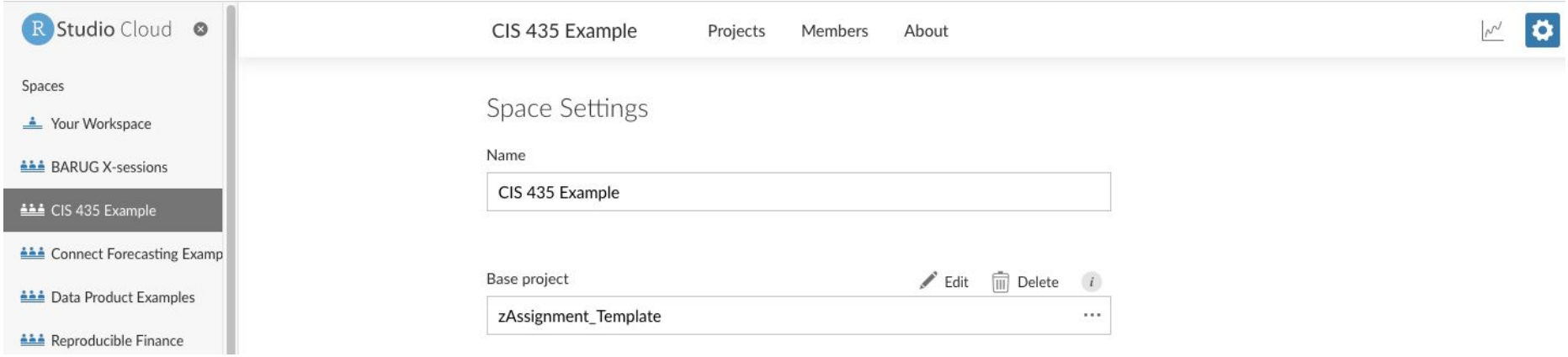
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Data Product Examples
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Edit
Delete
zAssignment_Template