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Everything R and Rstudio

OVERVIEW

How to get involved!

- (In department) Econometrics/CS+Econ Courses
- (Out of Department) BSIS + DS
- Illinois Data Science Club
- STAT/CS/IS 107 "Data Science Discovery"
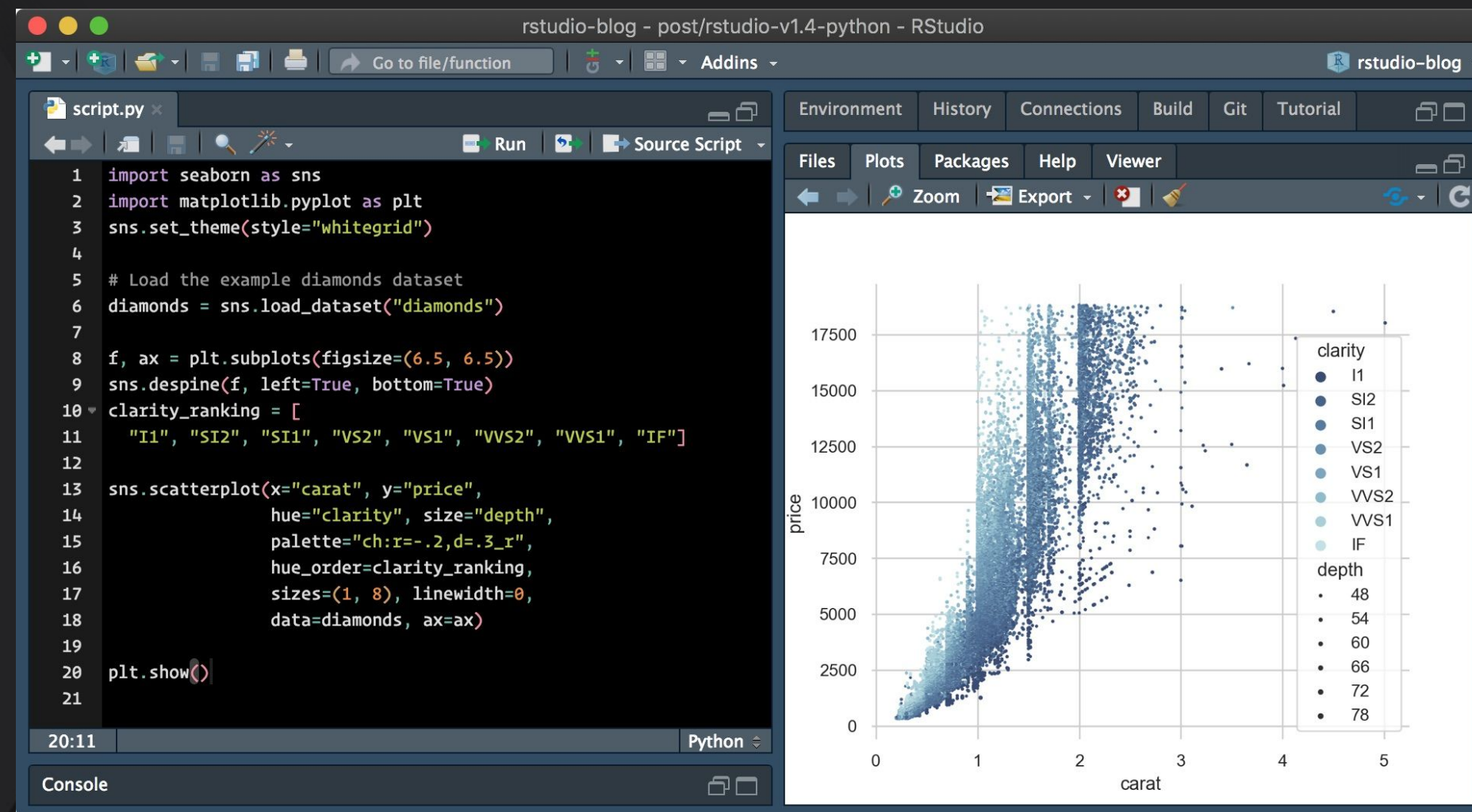- UIUC Datathon
- UIUC Anyware (STATA)

R

01

What is R?

R, or the R project for statistical computing, Is a language and environment designed for statistical computing and graphics

R as language

rstudio-blog - post/rstudio-v1.4-python - RStudio

rstudio-blog

script.py

Go to file/function   Addins

Run   Source Script

```python
import seaborn as sns
import matplotlib.pyplot as plt
sns.set_theme(style="whitegrid")

# Load the example diamonds dataset
diamonds = sns.load_dataset("diamonds")

f, ax = plt.subplots(figsize=(6.5, 6.5))
sns.despine(f, left=True, bottom=True)
clarity_ranking = [
    "I1", "SI2", "SI1", "VS2", "VS1", "VVS2", "VVS1", "IF"]

sns.scatterplot(x="carat", y="price",
                hue="clarity", size="depth",
                palette="ch:r=-.2,d=.3_r",
                hue_order=clarity_ranking,
                sizes=(1, 8), linewidth=0,
                data=diamonds, ax=ax)

plt.show()
```

20:11   Python

Console

Environment   History   Connections   Build   Git   Tutorial

Files   Plots   Packages   Help   Viewer

Zoom   Export

Why R?

R does a really good job at being simple yet effective

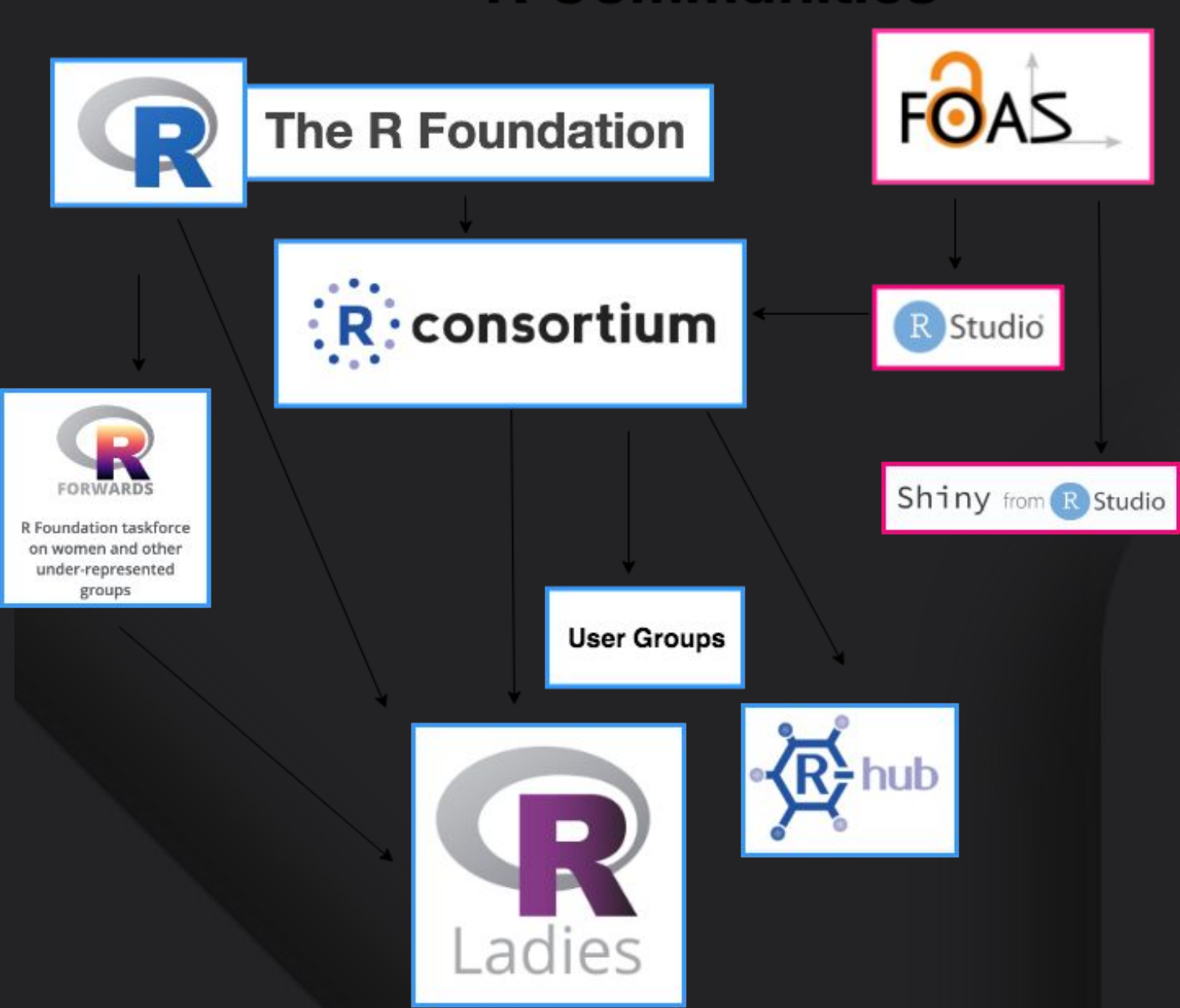The designers have taken great care in emphasizing user control and decision making

Its Free!

"

R is the world's largest most powerful programming language for statistical computing machine learning and graphics, and has a thriving global community of users, developers and contributors.

MRAN

(Microsoft R Open)

R Communities

Community!

The R Foundation

FOAS

NUMFOCUS
OPEN CODE = BETTER SCIENCE

R consortium

R Studio

FORWARDS
R Foundation taskforce on women and other under-represented groups

Shiny from R Studio

jupyter — Project Jupyter
Stan
julia — Julia
将軍 — Shogun
rOpenSci — rOpenSci
Open Journals
Bokeh
CONDA-FORGE — conda-forge

User Groups

R Ladies

R-hub

Colin Fay
@_ColinFay
...

#RStats: come for the language, stay for the community.

Tweet übersetzen

george berry, phd @george_berry · 23. Aug. 2019
A really good rule of learning to program is: go where the best community is.

Tools can improve. Frameworks can get rewritten to be faster. Communities are difficult to change.

R Studio Desktop

Setup

02

1. Download R/Rstudio Environment

2. Download Dataset from GitHub, specify folder, set working directory

3. Get to coding!

Live Demo

03

We're going to learn about a few things…

1. Linear Regression and Visualization

2. Time Series Analysis and Visualization

3. Implementing and calculating new variables

So let's get Started!

Additional Resources

- R-Documentation
  - https://www.rdocumentation.org/
- R-Survey
  - https://www.jetbrains.com/lp/devecosystem-2020/r/