Chapter 1: Introduction

What is tidyverse?

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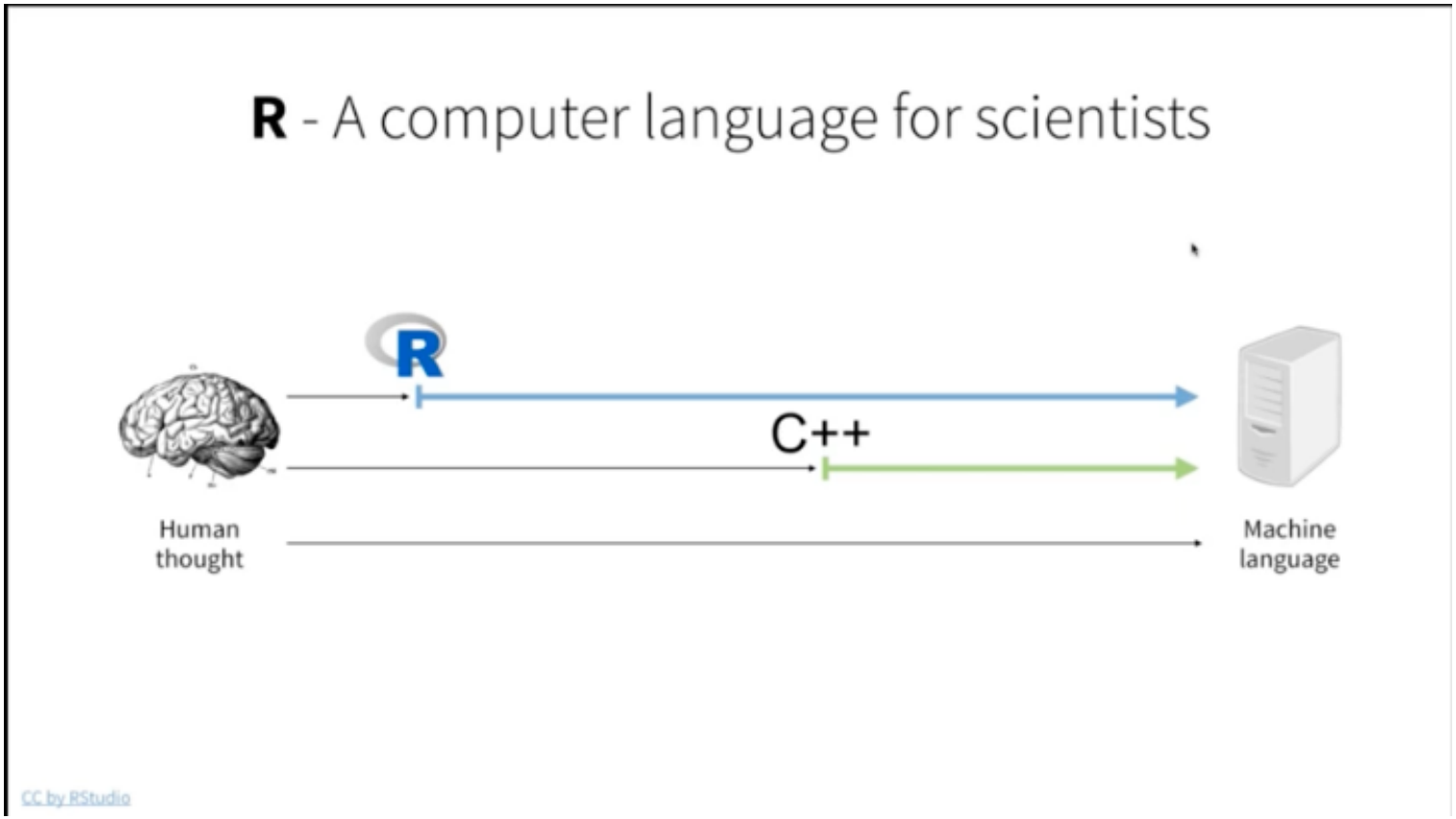
1. What is `R` and `tidyverse`?
2. Differences between Base R and tidyverse
3. Summary

Section 1

What is R and tidyverse?

What is R?

A programing language!



Source: RStudio

Then, what is `tidyverse`?

- A collection of R packages
- A dialect of the Base R programming language
- Support natural workflow of data analysis
- Data import, tidying, manipulation, visualization, programming

Then, what is tidyverse?

Source: Slyvia Canelon

Section 2

Differences between Base R and tidyverse

Load tidyverse

```
#install.packages(tidyverse)
library("tidyverse")
```

Example

```
UNpop <- read.csv("~/Dropbox/QSS/qss-inst-tidyverse/Introducti
UNpop
```

```
##   year world.pop
## 1 1950   2525779
## 2 1960   3026003
## 3 1970   3691173
## 4 1980   4449049
## 5 1990   5320817
## 6 2000   6127700
## 7 2010   6916183
```

Let's calculate the % of population increase from 1950!

Base R syntax

```r
## calculate the ratio compared to 1950
UNpop$ratio <- UNpop$world.pop / UNpop$world.pop[1]

## convert to percentage increase and round
UNpop$percent <- round((UNpop$ratio - 1) * 100, 1)
```

tidyverse syntax

```
UNpop %>%
  # calculate the ratio compared to 1950
  mutate(ratio = world.pop / first(world.pop),
  # convert to percentage increase and round
  percent = round((ratio - 1) * 100, 1))
```

```
##   year world.pop    ratio percent
## 1 1950   2525779 1.000000     0.0
## 2 1960   3026003 1.198047    19.8
## 3 1970   3691173 1.461400    46.1
## 4 1980   4449049 1.761456    76.1
## 5 1990   5320817 2.106604   110.7
## 6 2000   6127700 2.426063   142.6
## 7 2010   6916183 2.738238   173.8
```

Same task, with different syntax

Base-R

```
UNpop$ratio <- UNpop$world.pop / UNpop$world.pop[1]
UNpop$percent <- round((UNpop$ratio - 1) * 100, 1)
```

tidyverse

```
UNpop %>%
  mutate(ratio = world.pop / first(world.pop),
         percent = round((ratio - 1) * 100, 1))
```

Section 3

Summary

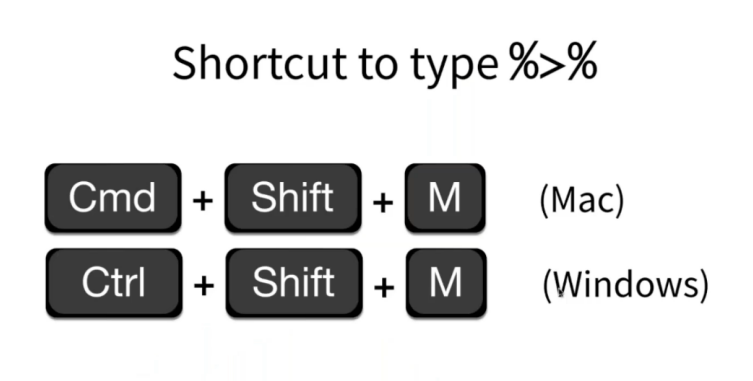
Summary

How to distinct between base R/tidyverse?

- Base R: Lots of **$** and **[[ ]]**
- Tidyverse: **%>%** (Forward pipe operator)

Why tidyverse?

- Resemble human language
- Intuitive and logical
- Combination of both base R and tidyverse



Source: RStudio

Reference

- Quantitative Social Science: An Introduction to tidyverse
- RStudio
- Slyvia Canelon