

code style

R and whitespace

“R doesn’t care” until it does

- Some languages are very picky about where whitespace (like spaces between words, tabs, and line breaks) go. R doesn’t care about those things!

```
newDF$ratio<-(Feelings[Feelings$InGroup=="FALSE" | Feelings$InGroup=="No", ]$percents)-(Feelings[Feelings$InGroup=="TRUE" |  
Feelings$InGroup=="Yes", ]$percents)
```

```
newDF$ratio <- (Feelings[Feelings$InGroup == "FALSE" | Feelings$InGroup == "No", ]$percents) -  
                (Feelings[Feelings$InGroup == "TRUE" | Feelings$InGroup == "Yes", ]$percents)
```

- Code style suggests adding whitespace for readability.
 - around both sides of assignment operators, <- and =
 - around logical and boolean operators like ==, <, &, |
 - after a comma, just like in English
- But, no whitespace around parentheses for regular function calls

R and whitespace

“R doesn’t care” until it does

- Like most computer languages, R **does** care about spaces in variable names, file names, and folder (directory) names.
- Instead of spaces:
 - use snake_case with underscores to separate words (periods have additional meaning in R, so that can be confusing). This is what the tidyverse guide advocates!

or

 - use CamelCase and capitalize words. This may be more accessible to screen readers

Line length

Shorter lines are easier for humans to read

- Add line breaks wherever logical
- After `|>` in `dp1yr` chains
- After `+` in `ggplot2` graphics

```
ggplot(comic_characters) + geom_histogram(aes(x = year, fill = publisher), binwidth = 1, color = "white", lwd = 0.1) +  
facet_wrap(~publisher) + theme_fivethirtyeight() + scale_fill_manual(values = c("#008fd5", "#ff2700")) + labs(title = "New Comic  
Book Characters Introduced Per Year")
```

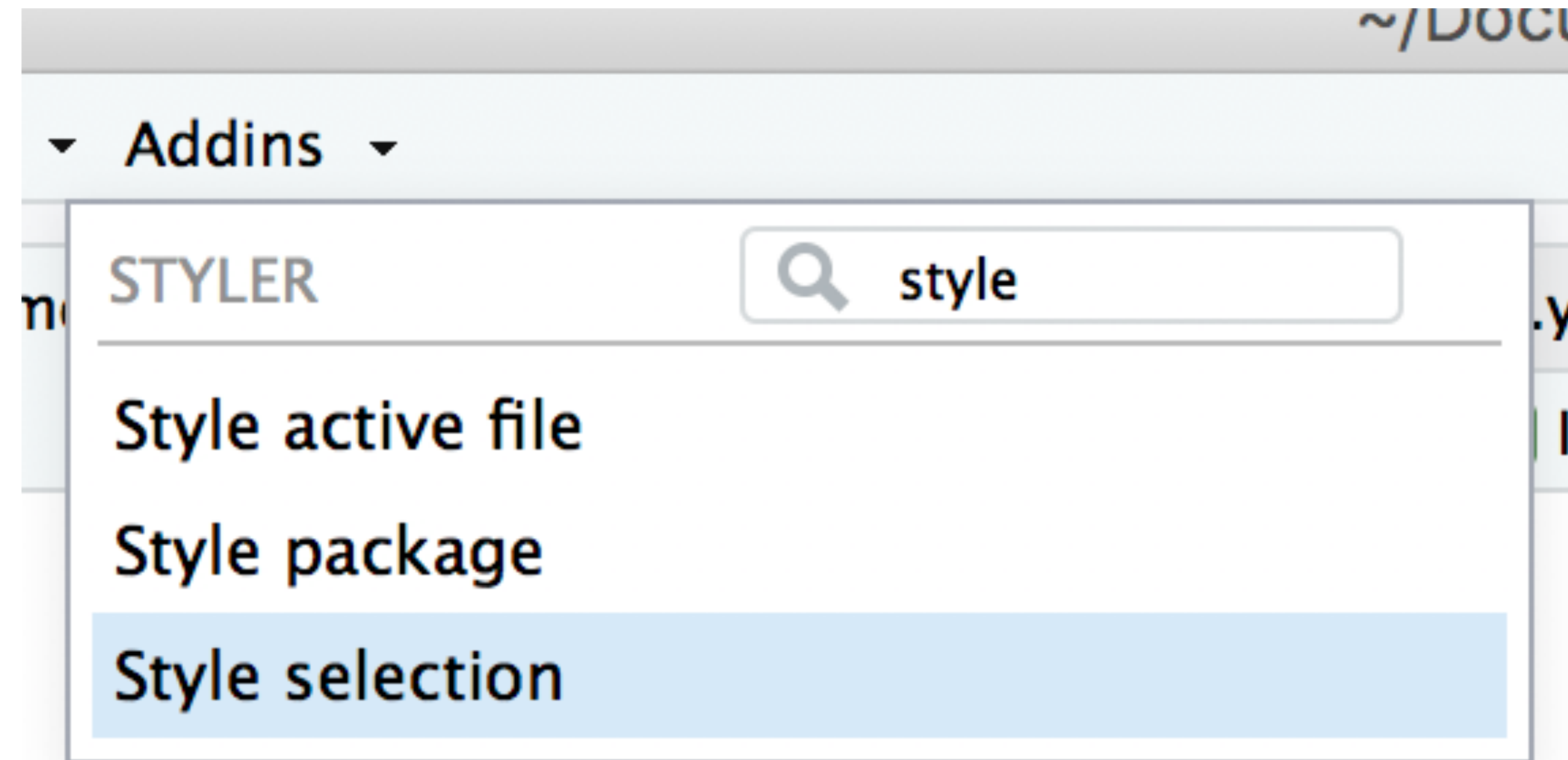
```
ggplot(comic_characters) +  
  geom_histogram(aes(x = year, fill = publisher), binwidth = 1, color = "white", lwd = 0.1) +  
  facet_wrap(~publisher) +  
  theme_fivethirtyeight() +  
  scale_fill_manual(values = c("#008fd5", "#ff2700")) +  
  labs(title = "New Comic Book Characters Introduced Per Year")
```

Styling code

The styler package make styling code easy!

```
library(styler)
```

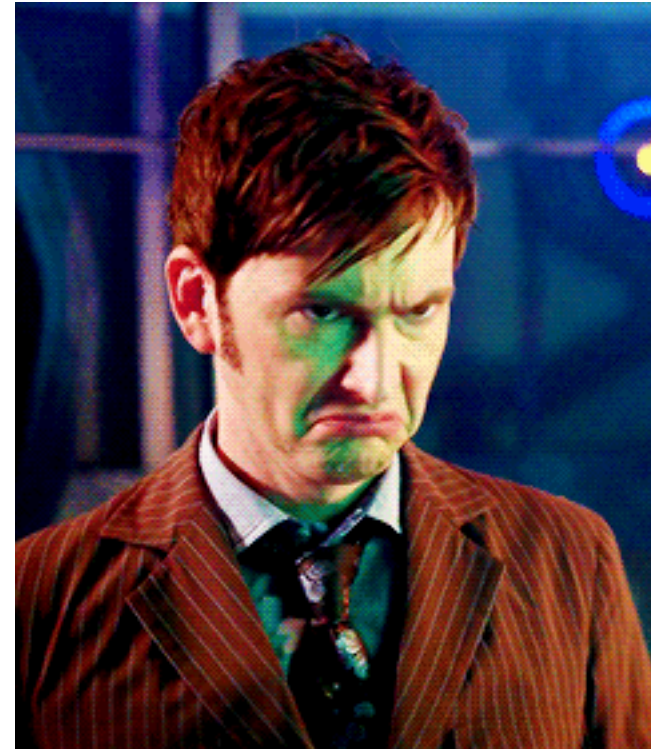
- Load the package
- Use the add-in!



Never use attach()

~~Where are y'all learning this?!~~

```
> cyl
Error: object 'cyl' not found
> attach(mtcars)
> cyl
[1] 6 6 4 6 8 6 8 4 4 6 6 8 8 8 8 8 8 4 4 4 4 8 8 8 8 4
```



- attach() is extremely bad R practice
- **Every time** you run attach() a new version of the data is attached into your Environment, but invisibly. This means you may have hundreds of versions of the same dataset floating around in there!


```
> attach(mtcars)
> cyl
[1] 6 6 4 6 8 6 8 4
```

```
> detach(mtcars)
```

```
> mtcars$cyl
[1] 6 6 4 6 8 6 8 4
```

```
> mtcars %>%
  pull(cyl)
[1] 6 6 4 6 8 6 8 4
```



If you have been using `attach()` it's time to clean up

```
> search()  
[1] ".GlobalEnv"      "mtcars"          "package:ggthemes"  
[4] "package:fivethirtyeight" "package:lubridate" "package:forcats"  
[7] "package:stringr"  "package:dplyr"   "package:purrr"  
[10] "package:readr"    "package:tidyr"   "package:tibble"  
[13] "package:ggplot2"  "package:tidyverse" "tools:rstudio"  
[16] "package:stats"    "package:graphics" "package:grDevices"  
[19] "package:utils"    "package:datasets" "package:reprex"  
[22] "package:testthat" "package:devtools" "package:usethis"  
[25] "package:methods" "Autoloads"        "package:base"
```

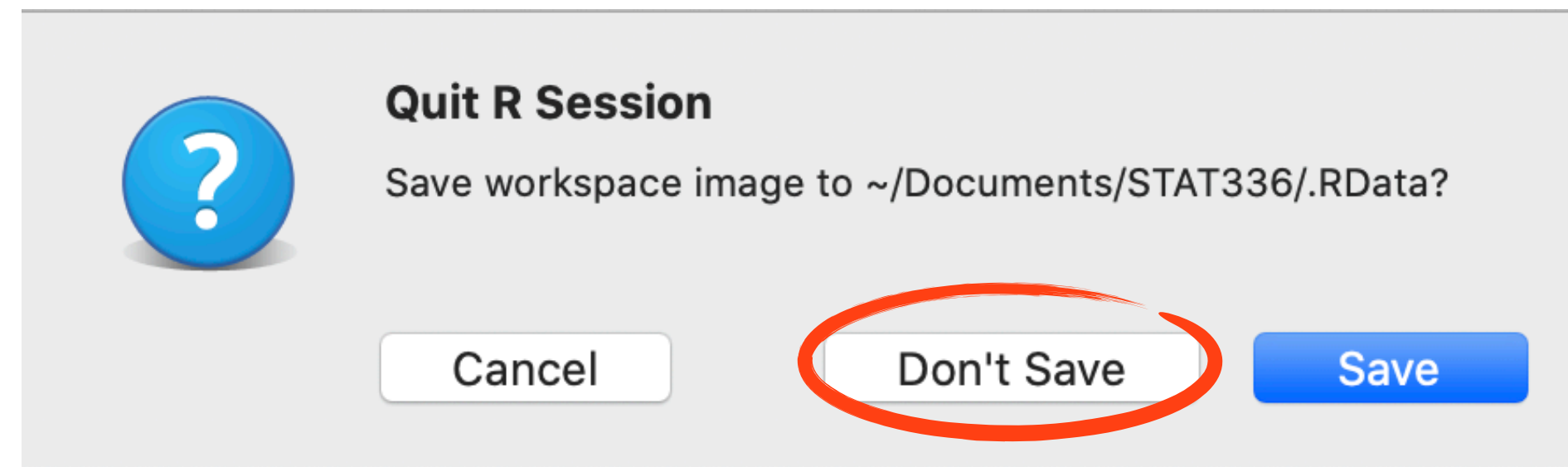
- Use `search()` to see what you have attached
 - `.GlobalEnv` and `Autoloads` are fine
 - anything that starts with `package:` or `tools:` is also fine
- Use `detach()` to remove any data that is attached

```
> detach(mtcars)
```


Don't save your Workspace

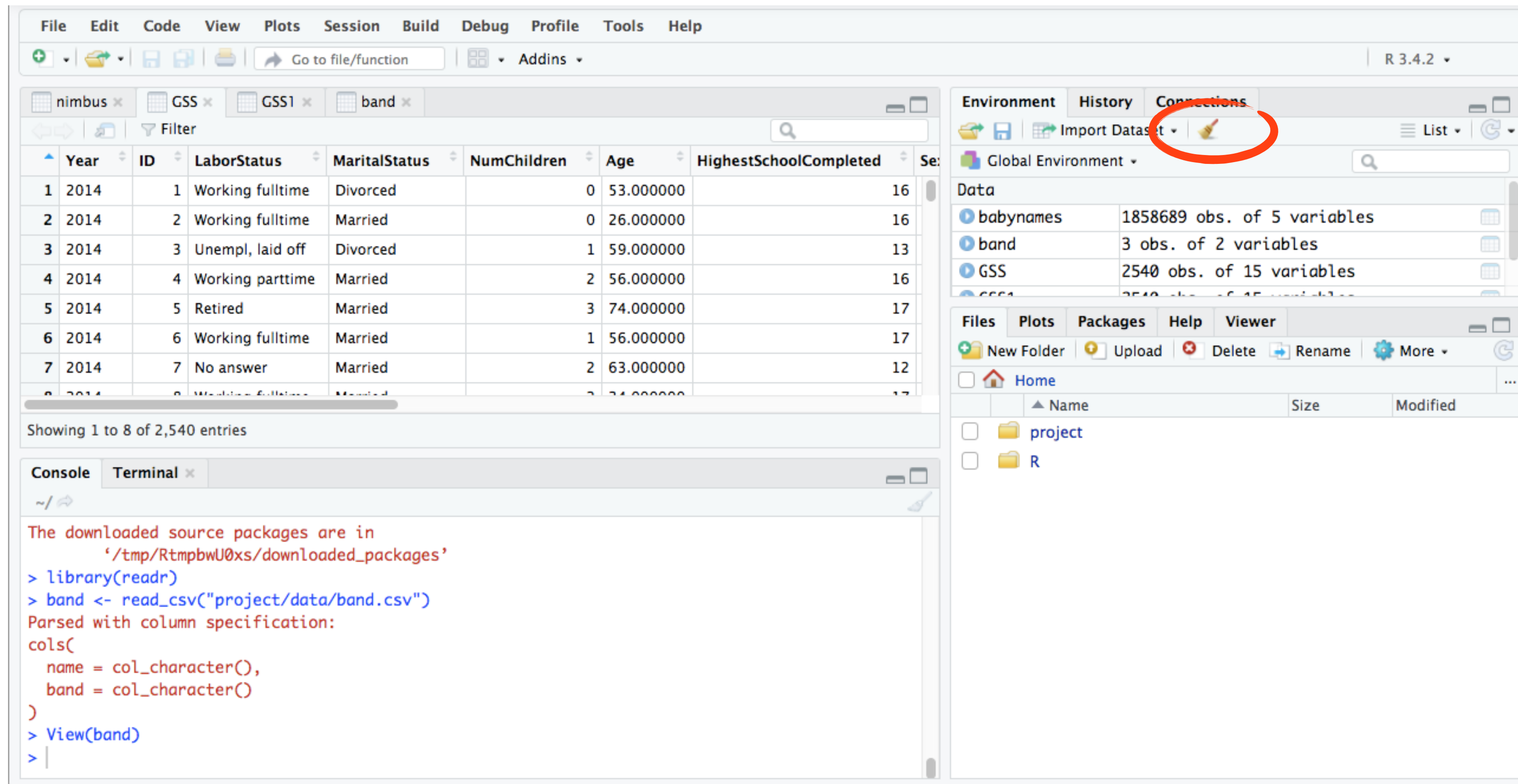
That's why we save code!

- When you quit RStudio, you should be selecting “Don't save” on the dialog box



- If you haven't been doing this, it's again time for a clean up!

First, clean up your Environment



The screenshot shows the RStudio interface with the following components:

- Environment Panel:** The 'Connections' tab is selected and circled in red. It shows the 'Global Environment' with a search bar and a 'List' button.
- Data Panel:** Lists loaded data objects: 'babynames' (1858689 obs. of 5 variables), 'band' (3 obs. of 2 variables), and 'GSS' (2540 obs. of 15 variables).
- Files Panel:** Shows a file explorer view of the 'project' directory, containing a subdirectory 'R'.
- Console:** Contains the following R code:

```
The downloaded source packages are in
  '/tmp/RtmpbwU0xs/downloaded_packages'
> library(readr)
> band <- read_csv("project/data/band.csv")
Parsed with column specification:
cols(
  name = col_character(),
  band = col_character()
)
> View(band)
> |
```
- Table:** A data table with columns: Year, ID, LaborStatus, MaritalStatus, NumChildren, Age, HighestSchoolCompleted, and Sex. It shows 8 rows of data.

It's okay to remove all, we've got the code

The screenshot shows the RStudio interface with a dialog box titled "Confirm Remove Objects". The dialog contains a warning icon and the text: "Are you sure you want to remove all objects from the environment? This operation cannot be undone." Below this text is a checkbox labeled "Include hidden objects" which is currently unchecked. At the bottom of the dialog are two buttons: "Yes" and "No". The "Yes" button is circled in red.

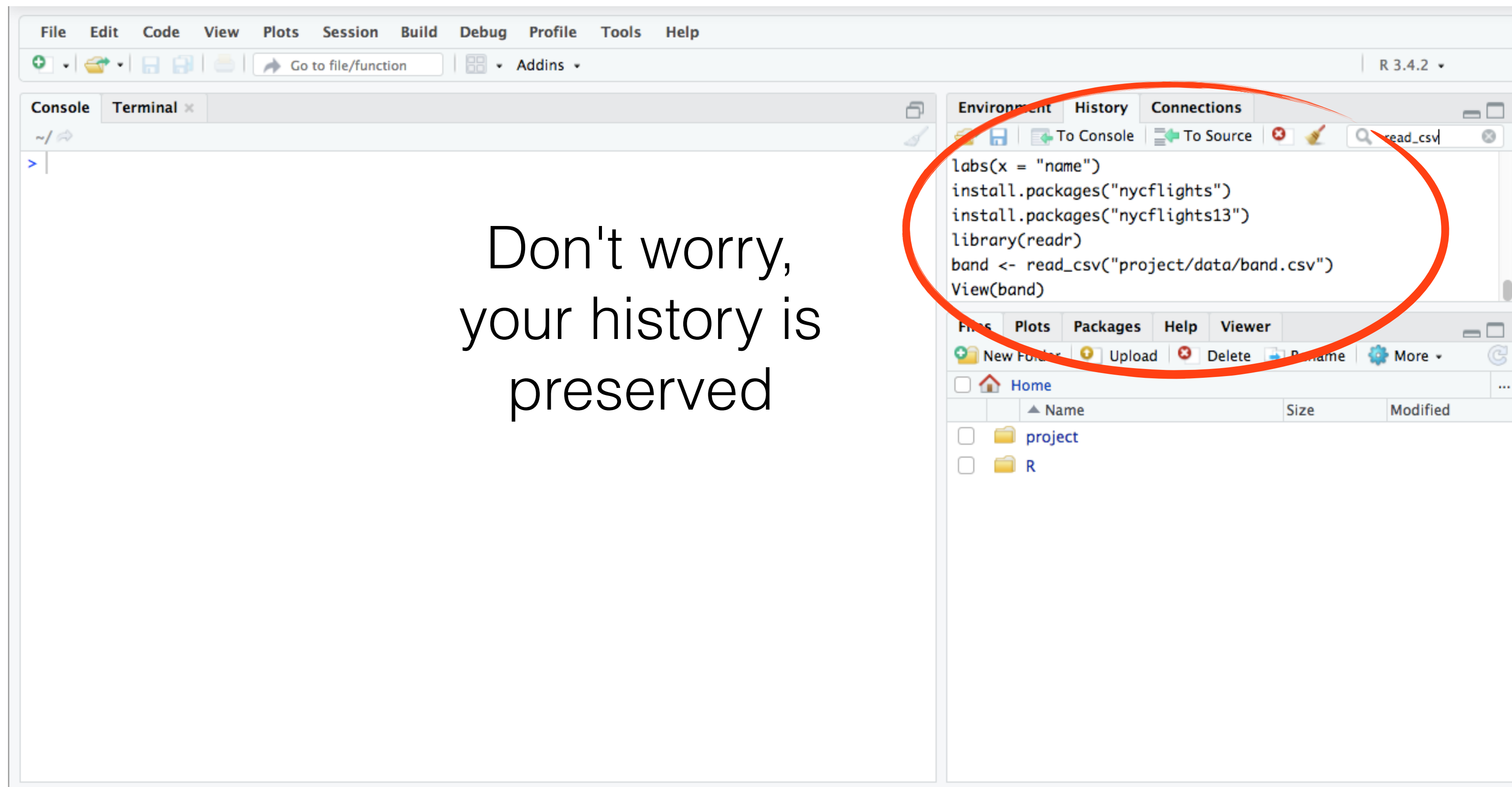
The background shows the RStudio environment with several open windows:

- Environment:** Lists objects in the Global Environment: `babynames` (1858689 obs. of 5 variables), `band` (3 obs. of 2 variables), and `GSS` (2540 obs. of 15 variables).
- Viewer:** Shows a file browser with folders like `project` and `R`.
- Console:** Shows the following R code:

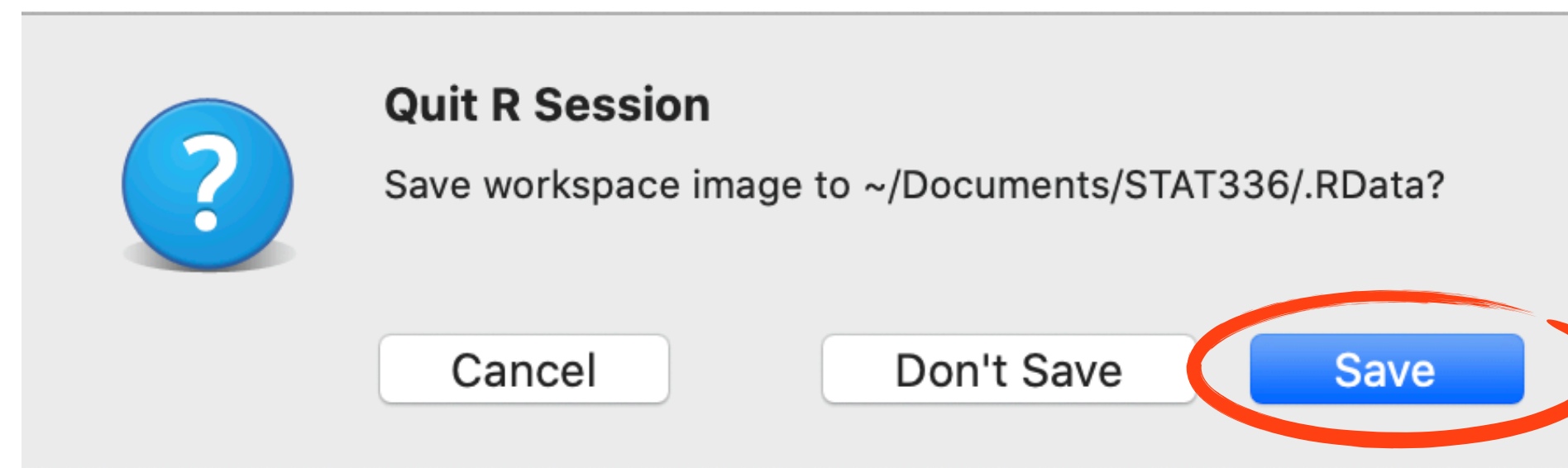
```
The downloaded source packages are in
  '/tmp/RtmpbwU0xs/downloaded_packages'
> library(readr)
> band <- read_csv("project/data/band.csv")
Parsed with column specification:
cols(
  name = col_character(),
  band = col_character()
)
> View(band)
>
```

Your History is always preserved

Don't worry,
your history is
preserved

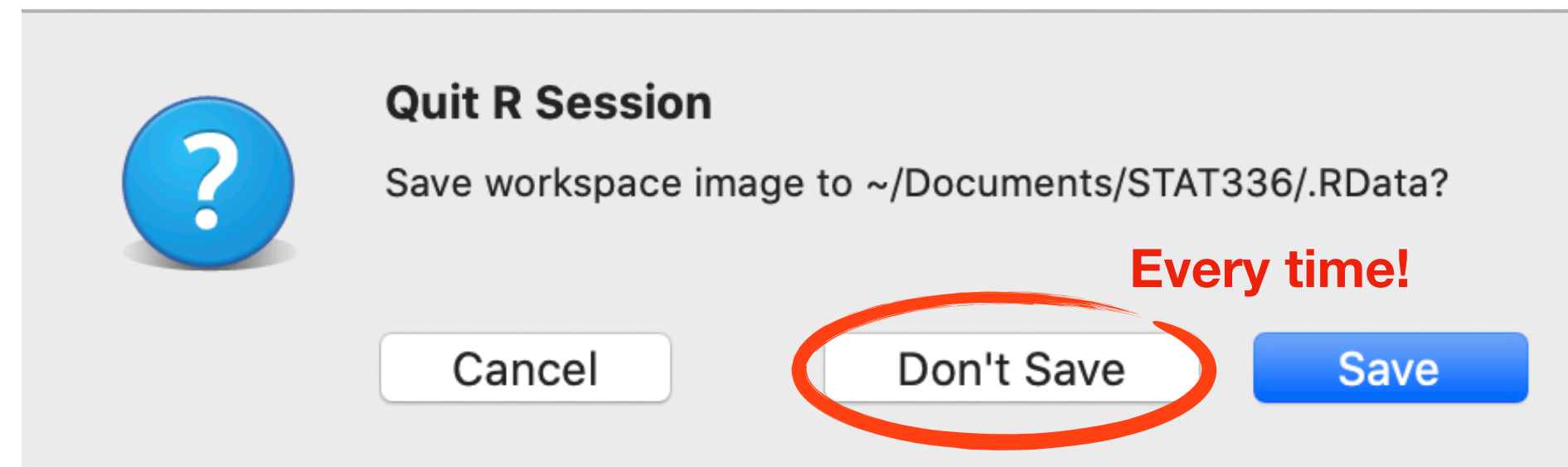


Now, quit RStudio and **this one time** say **Save**

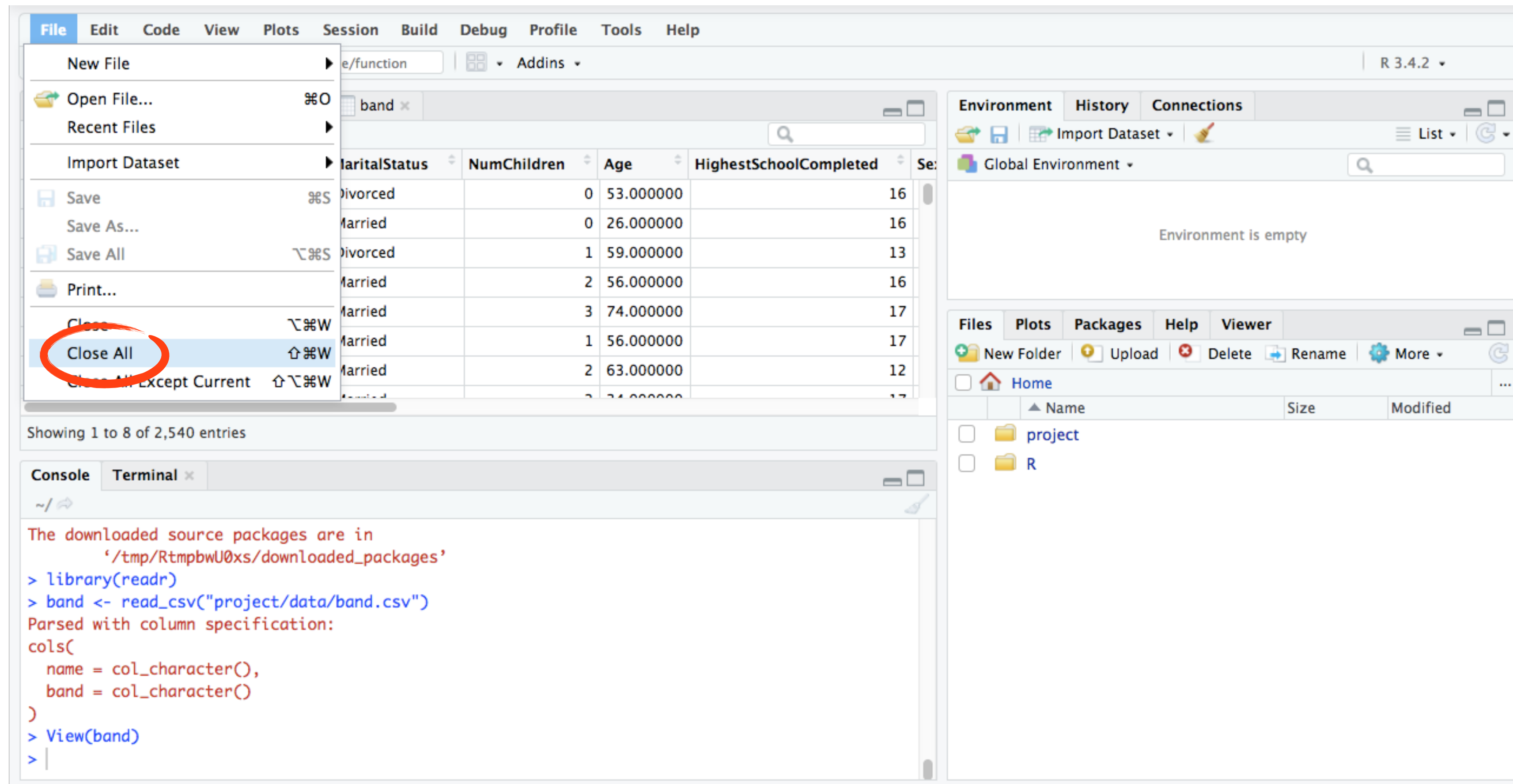


Just this one time!!

Going forward, **always** say Don't Save



You also might want to close windows



The screenshot shows the RStudio interface with the File menu open. The 'Close All' option is highlighted with a red circle. The main editor window displays a data frame named 'band' with columns: MaritalStatus, NumChildren, Age, and HighestSchoolCompleted. The Environment pane shows 'Global Environment' and 'Environment is empty'. The Files pane shows a file browser view with folders 'project' and 'R'. The Console pane shows the following R code:

```
~/  
The downloaded source packages are in  
  '/tmp/RtmpbwU0xs/downloaded_packages'  
> library(readr)  
> band <- read_csv("project/data/band.csv")  
Parsed with column specification:  
cols(  
  name = col_character(),  
  band = col_character()  
)  
> View(band)  
>
```