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 `dplyr` 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
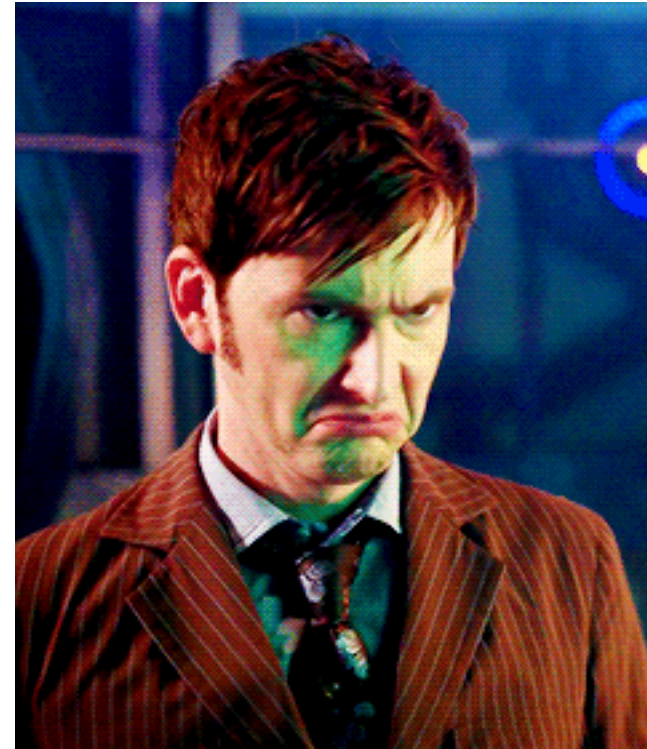## The styler package make styling code easy!

```
library(styler)
```

- Load the package

- Use the add-in!
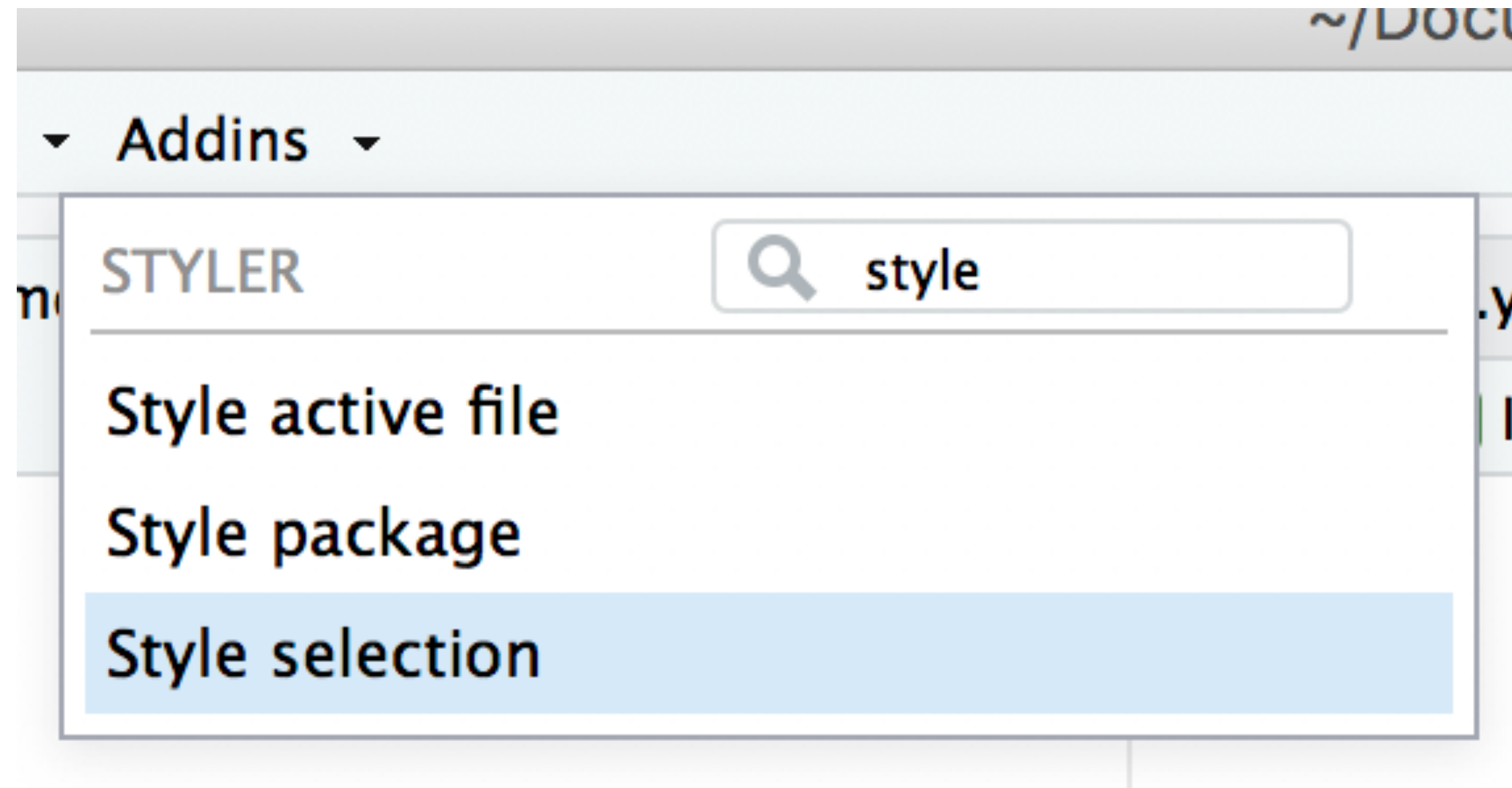
Never use attach()
Where are y'all learning this?!

```
> 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!
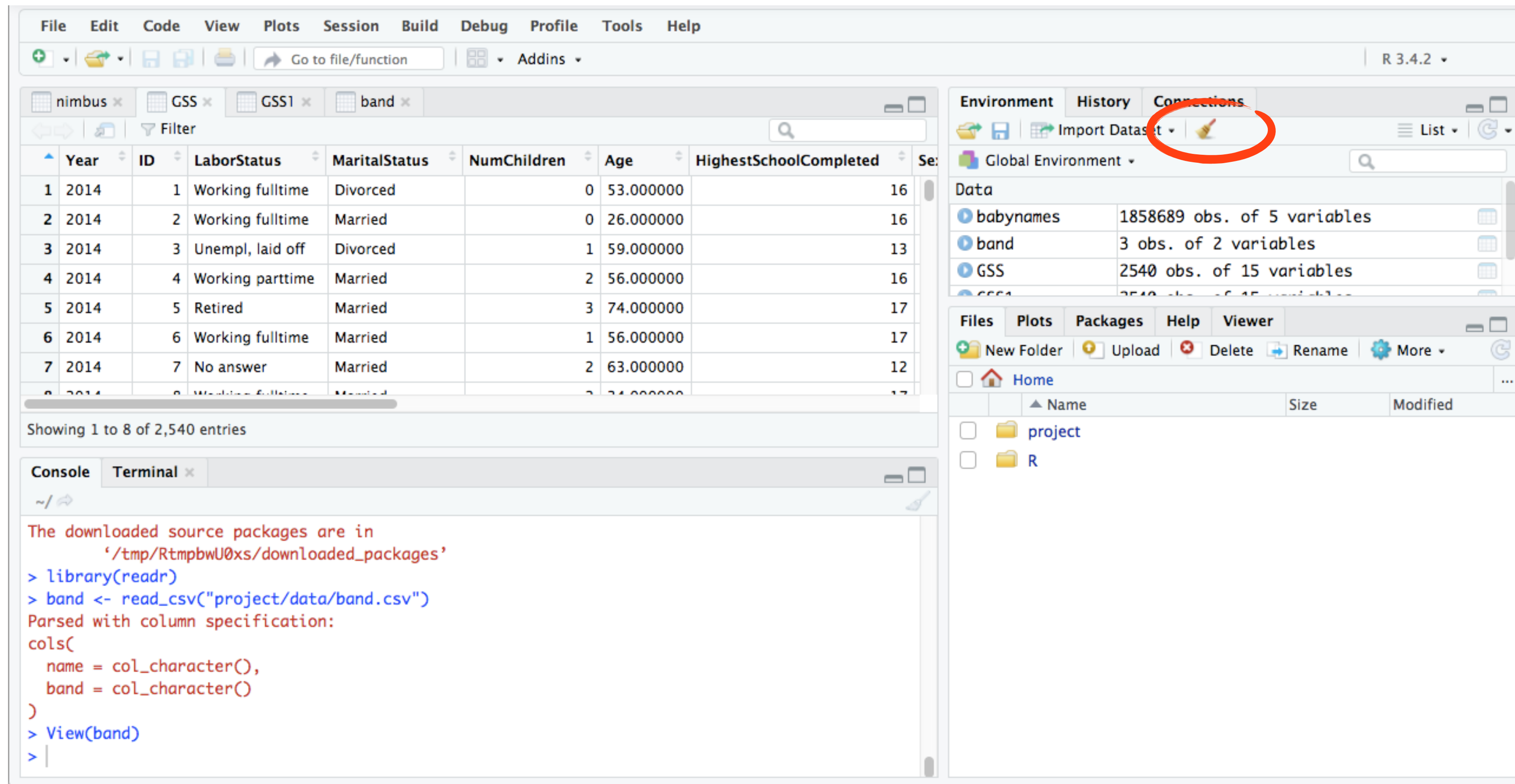
- When you quit RStudio, you should be selecting "Don't save" on the dialog box
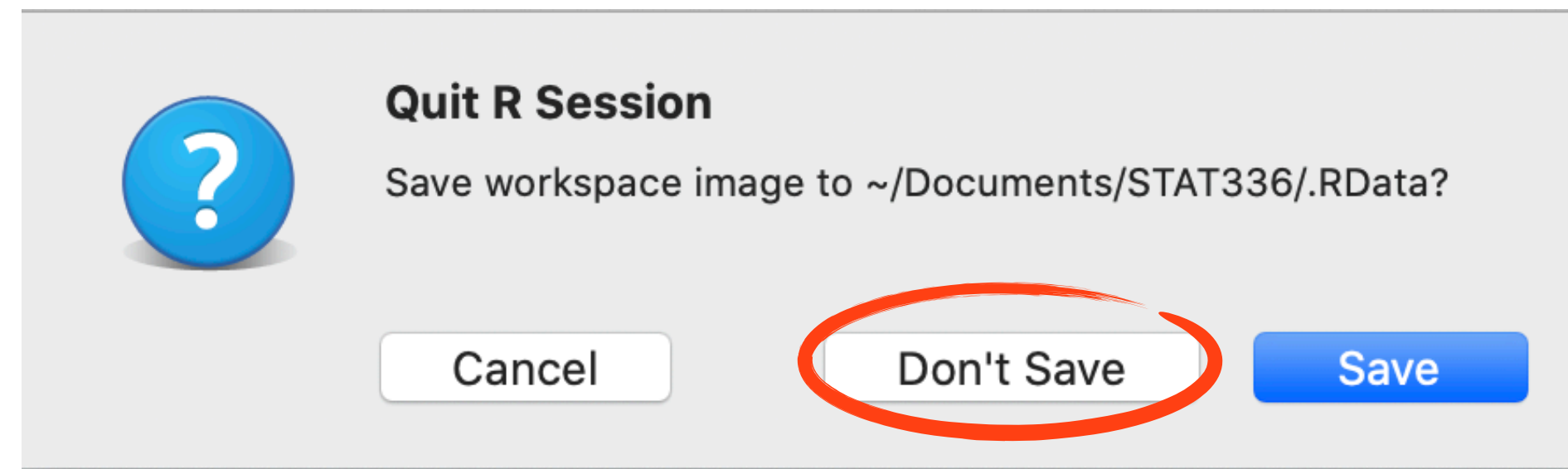
- If you haven't been doing this, it's again time for a clean up!
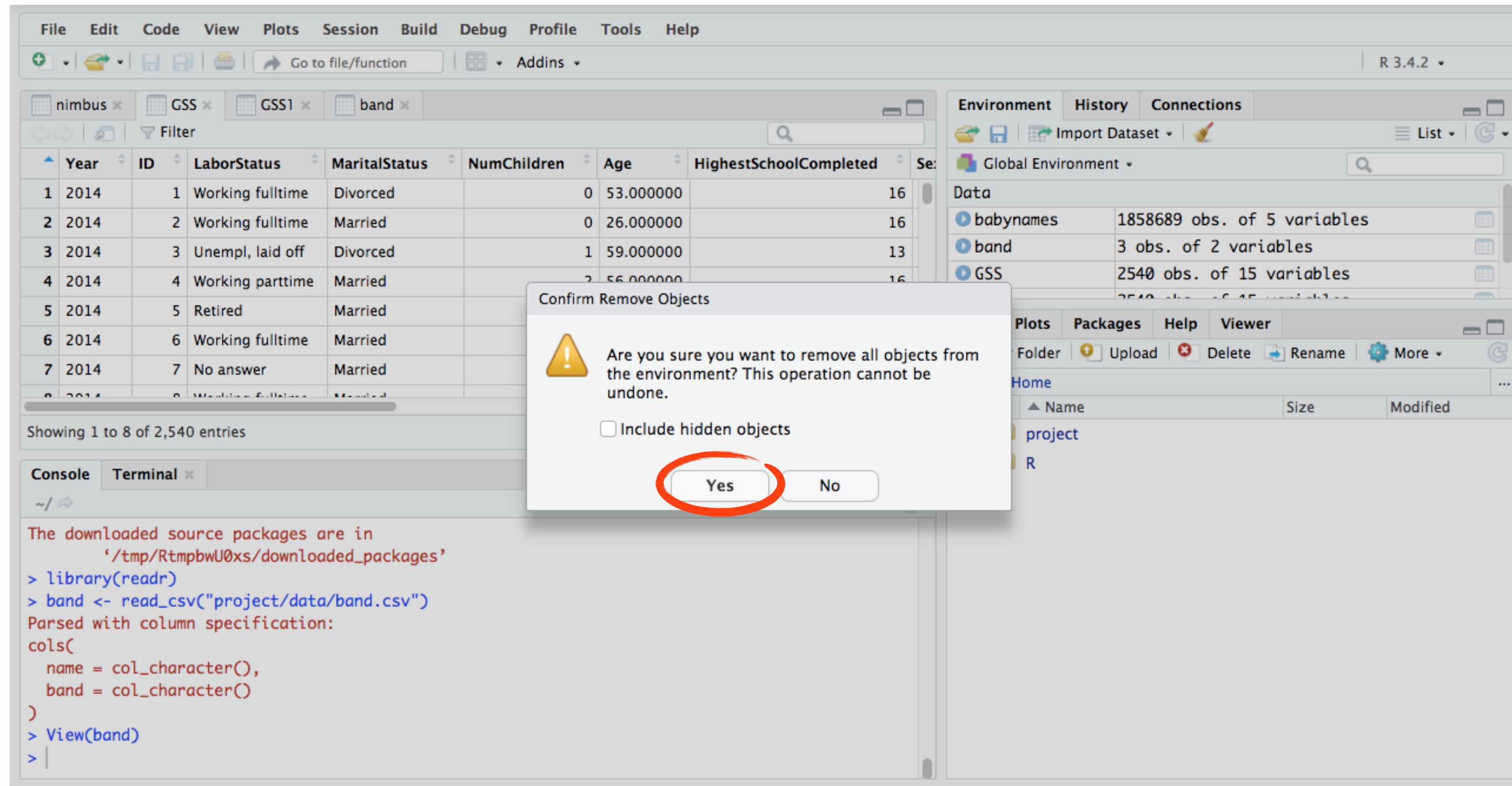
First, clean up your Environment

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

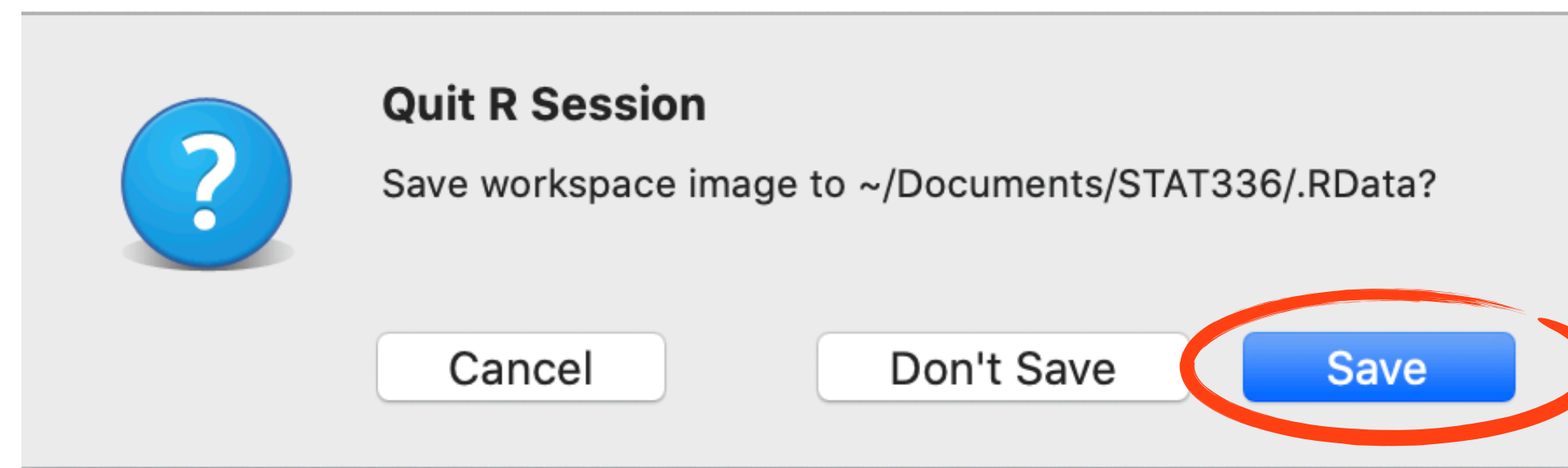# Your History is always preserved

Don't worry,
your history is
preserved
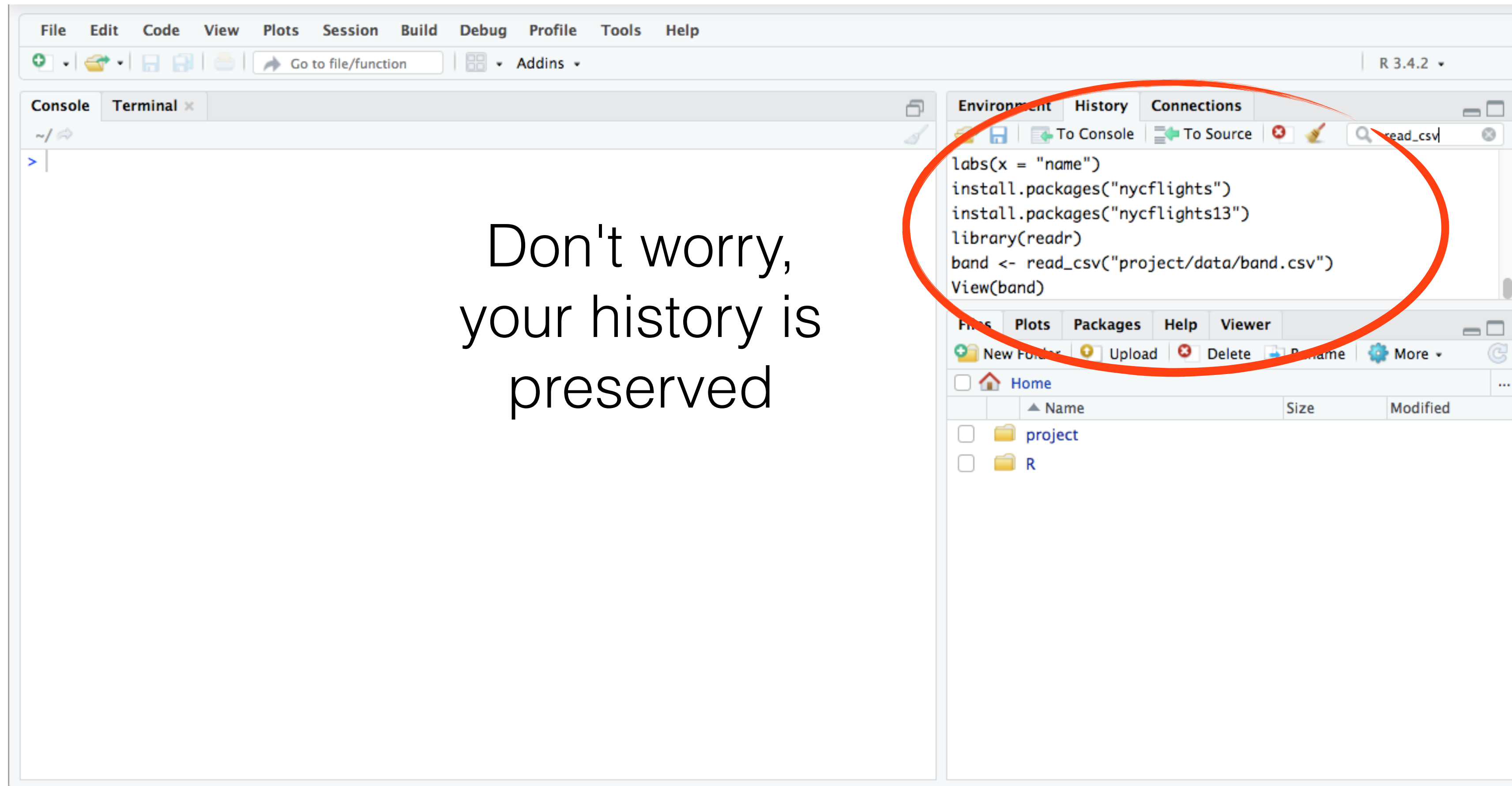
Now, quit RStudio and **this one time** say Save

Quit R Session

Save workspace image to ~/Documents/STAT336/.RData?

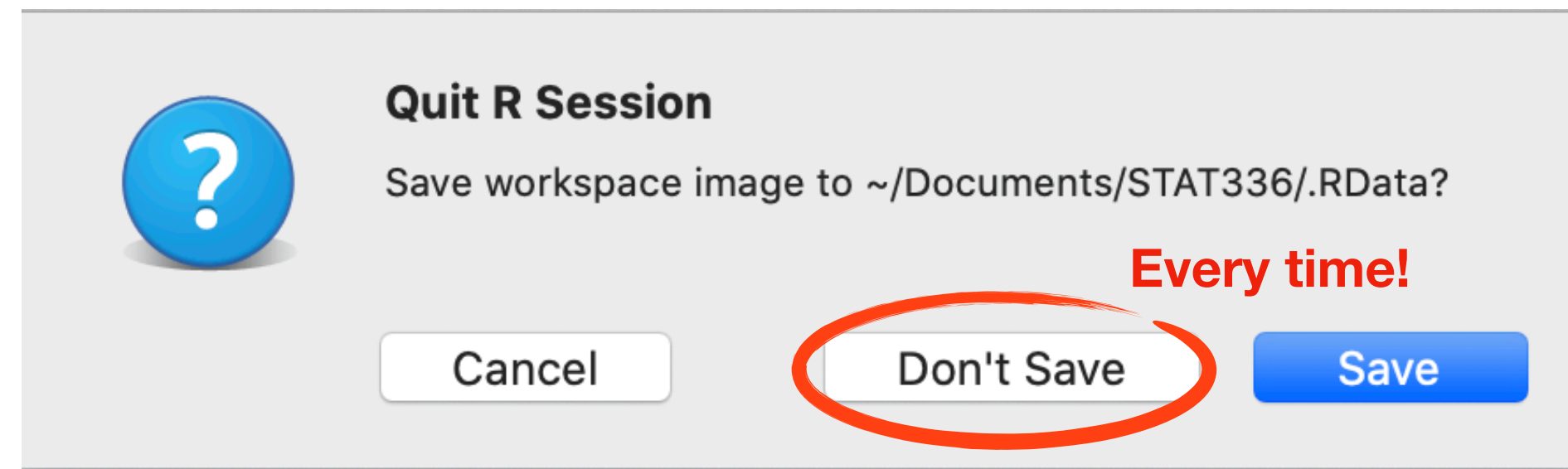Cancel   Don't Save   Save

Just this one time!!

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

You also might want to close windows