learnr: Interactive R tutorials

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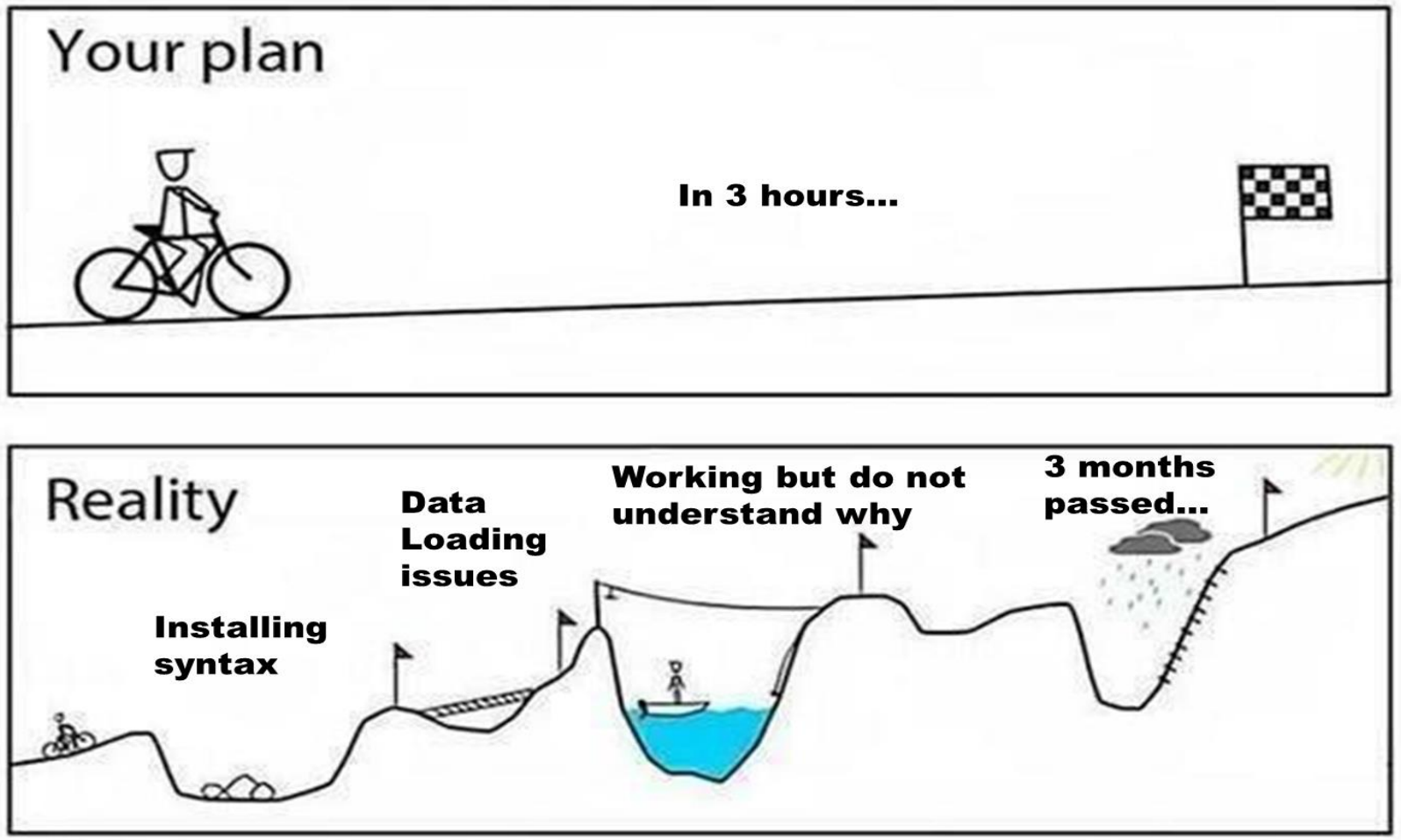
Assume you teach R to others...



Beginner’s feeling

learnr:

- Execute R code in excise chunk without pre-installing
- Document learning progress
- Customize quiz or code exercise
- Insert narratives, video or pictures

PlayeR

- About
- Data Visualization: Static
- Data Visualization: Interactive
- Data Manipulation
- Data Modeling

Start Over

English Translation of Chinese words: Give a Man a Fish, and You Feed Him for a Day. Teach a Man To Fish, and You Feed Him for a Lifetime.

About

The Playe**R** website teaches you how to programming in R and Statistics interactively with practicing in the R console. No need to downlaod anything.

There are three main part of each chapter: demo code and play by yourself.

- **Demo code**: code will be in R chunk followed with the plot and result.
- **Play R by yourself**: default as demo code. It will be your turn to twist the code and see what happen. Have fun!
- **Quiz**: a quiz!

Source: https://appforiarteam.shinyapps.io/PlayR/#section-about

Navigation Bar

Narrative

PlayeR

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Data Visualization: Static

One of the most important parts of data analysis is to visualize your data even before any modeling or manipulation because **you can see a lot by looking**. This chapter will introduce one of the most powerful *R* package **ggplot**, and you can customize and polish your plots to generate graphics for scientific paper. You can play the code in the Exercise with Code session.

Note: this chapter will use *iris* dataset (a default R dataset), no need to load external data.

Box Plot

Demo part:

This is a demo for generating boxplot usng iris dataset:

```
### Iris as a default demo dataset
### Fill= Species means each Species has its own color
ggplot(iris, aes(x = Species, y = Petal.Length, fill = Species)) +
  ### geom_boxplot() means plotting as boxplot
  geom_boxplot() +
  ### xlab() for X label
  ### ylab() for y label
  xlab("Species")+ylab("Sepal Length (cm)")+
  ### theme_classic() change the background and ggplot theme.
  ### You can change any theme and taste the difference
  theme_classic() +
  ### change the x and y coordinator labels size
  theme(axis.text=element_text(size=12,face="bold"),axis.title=element_text(size=14,face="bold"))
```

Static Demo Code

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Default as demo code. It will be your turn to twist the code and see what happen. Have fun!

Now your turn, twist the demo code and see how it changes:

Exercise R chunk

Code | Start Over | Run Code

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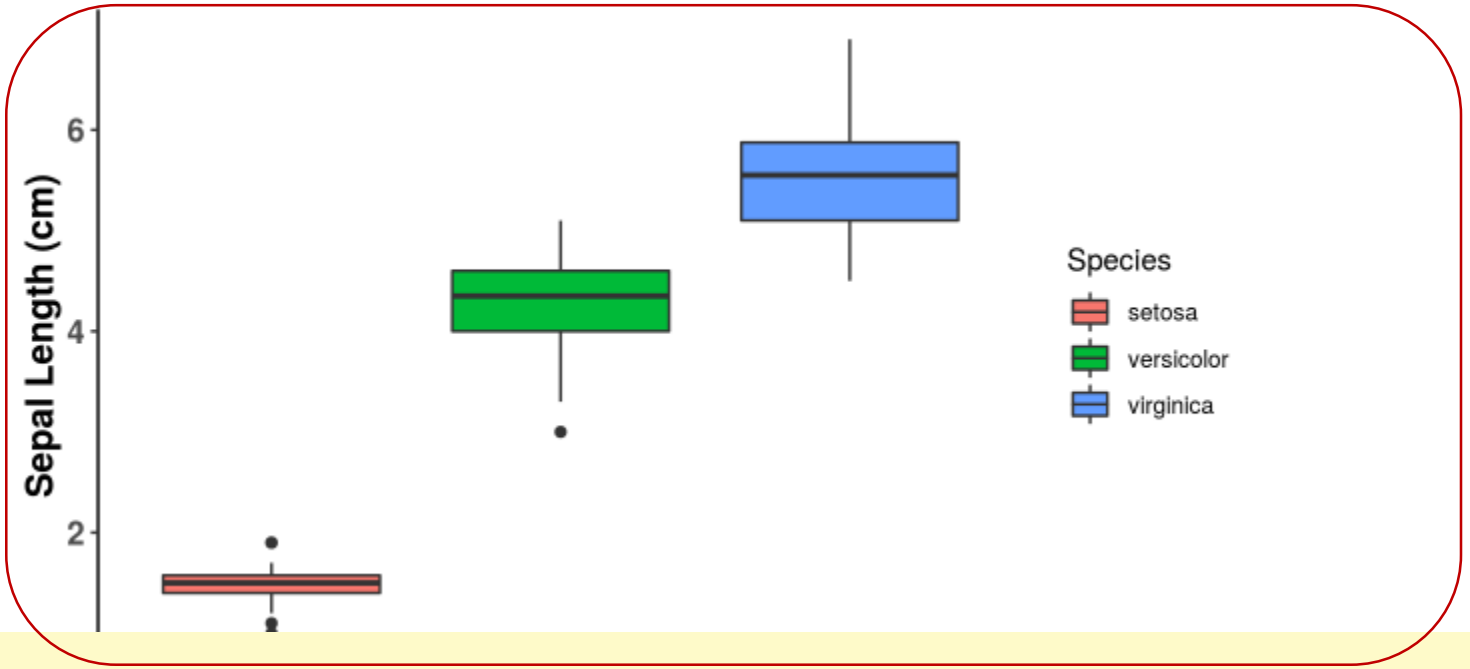
Output from Exercise Chunk



Educators:

Use *learnr*:

- **Students can play (interact) with the code and have a broad idea of the concept (preview)**
- **Time saved to hands on experience in a class (classroom)**
- **Follow up exercise (review)**

Students or self-learner:

Use *learnr*:

- **Learning by doing (R exercise chunks)**
- **Document the learning process**
- **Systemically tutorials**

Extra Packages:

- **Code Checking**
  - ***checkr* by Danny Kaplan: github.com/dtkaplan/checkr**
  - ***grader* by Garrett Grolemund: github.com/rstudioeducation/grader**

Thanks!

Any (easy) questions?