Tidyverse Lesson Plan

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The goal of this lesson will be to extend the students' experience with `dplyr` and `ggplot` to include some of the many other useful features from the tidyverse package.

Topics Covered

The lecture will be roughly split in to 2 main sections of live coding:

1. Overview of packages and functions. This section will introduce the packages `purrr`, `stringr`, and `forcats`, and give basic examples of some of the cool functions of each.
2. Example problems and random hacks. To see some examples of start-to-finish R programming within the tidyverse syntax, we will work through several data processing and visualization tasks. Along the way, we will use some of the functions covered in the previous section, and get a sense of the overriding theme of the tidyverse: for everything we are used to doing in R, there is a corresponding function from the tidyverse which is less silent and more consistent. In addition, I will share some useful procedures that can be solved with tidyverse functions, such as giving graphs complex labels and defining a color palette which maps colors to variables across many figures.

Expected Outcomes

To have a working understanding of the high-level use of each package in the tidyverse, and a few useful scripts to refer to when coding.

Assessment

While I do not plan on asking "what should I type next?" type questions, I will open the class up to discussion about common frustrations when programming and whether there are particular questions they would like me to discuss.

In addition, I may ask the class high-level questions, for example about how certain tidyverse verbs relate to each other. This will encourage the type of thought that goes in to writing tidy code.

Learning Plan

Students will be expected to come to class able to load the packages `tidyverse` and `wesanderson`.

The students will be encouraged to keep up with the live coding, and will be referred to several helpful resources for further reading, exercises, and cheat sheets to keep handy.

Reflection

Eventual reflection on the following questions:

1. Based on vibe/feedback, how did students feel the content aided their understanding of the tidyverse and programming best practices?
2. How was the use of time? Did the live coding take longer than anticipated?