

Statistical Programming Assignment



Instructions

- Download Analysis 3 Zip Folder
- Unzip Folder
- Open Analysis 3 Rmd File
- Knit to HTML
- Read Introduction
- Three Part Assignment
 - Each Part Self Contained
 - Most Answers Require Copyand- Paste
 - Where You See COMPLETE You Should Write/Place Code
 - Leave Code as is When You See #DO NOT CHANGE

Part 1 Discussion



Process of Programming

- Create Practice Example
- Check Code Works
- Apply Code to Real Data
- Check Code Works
- Create a Function of the Process

Goals

- Create a Function that Creates a Factor Variable of Abbreviated Weekdays (Easy)
- Create a Function that Creates a Plot (Difficult)
- Start Working (15 min)

Part 2 Discussion



- Focus on Traffic Volume (DATA2) and Specific Location ("L103")
- Look at Table

```
head(OUTPUT) #DO NOT CHANGE
## # A tibble: 6 x 3
      DAY median
                 IQR
    <int> <dbl> <dbl>
             85 34
    4 84 37
## 2
     5 76 34.2
## 3
## 4
             83 33
## 5
             79 38.0
       10
## 6
             87 21
```

Goal: Reconstruct this Table

Part 2 Discussion



Steps:

- Given the Day in April, Create Function that Outputs the Associated Row
- Use the Function in a Loop to Construct the Table
- Two Loops
 - Initiate with NULL
 - Initiate with Empty Tibble
- Look at Lecture on Loops
- Q3 is Tricky
- Start Working (15 min)

Part 3 Discussion



- Functions That Apply Functions Across Dimensions Of R Object
- Doesn't Require a Loop
- Tibbles are Matrices
 - Apply Functions to Rows
 - Apply Functions to Columns (Think Summarize)
- Apply() Function to Matrix
 - To Rows
 apply(Matrix, 1, Function)
 - To Columns
 apply(Matrix, 2, Function)
- Start Working (Rest of Class)

Closing



Disperse and Make Reasonable Decisions