



# Rendering Parameterized RMarkdown Reports

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# Context of the Problem

# Course End Feedback at West Point

- In AY19-2 West Point transitioned to a new Course End Feedback system with inadequate functionality.
- Goal: Create a unique summarized report for every department, program, and course at West Point with graphical depictions of course end feedback for every question in AY19-2.
- Added Bonus: Provide comparisons of responses to the same questions at higher levels.
- Challenge: This requires 500 unique reports with over 15,000 graphs (and some rudimentary word clouds for free text).
- Limitations: Need to get these to people in about a week and a half. Also, my Ctrl+Enter has a limited lifespan.

# R Markdown Solution

- Using the `render()` function, you can compile an R Markdown report from within the console or another R Script. Same as if you were to knit from within the Markdown document.
- The `params` argument defines the parameters used to override the declared variables in the rendered Markdown file YAML.
- Putting this command inside a `for` loop (or custom function with `apply()`) allows for multiple iterations
- Example report.

```
for (i in 1:10) {  
  rmarkdown::render("AORS Demo Report.Rmd",params=list(uic=uiclist$UIC[i]))  
  file.rename(from="AORS_Demo_Report.pdf", to =paste(uiclist$UIC[i],"Graph.pdf"))  
  file.copy(from=paste0(getwd(),"/",uiclist$UIC[i]," Graph.pdf"),  
            to = paste0(getwd(),"/UIC Reports/",uiclist$UIC[i]," Graph.pdf"))  
  file.remove(paste0(getwd(),"/",uiclist$UIC[i]," Graph.pdf"))  
}
```

# Operational Application for ORSAs

# Flight Hour Competition

- Competition put on by PA&E this past summer.
- Goal was to predict flight hours for various CABs by month.
- We didn't win.
- Demonstration of the report.

# Nuances to Consider

- Troubleshooting is challenging.
- Directory changes for files.
- Delete file when re-running or name date/system time.

```
for (i in 1:10) {  
  rmarkdown::render("AORS Demo Report.Rmd", params=list(uic=uiclist$UIC[i]))  
  file.rename(from="AORS_Demo_Report.pdf", to =paste(uiclist$UIC[i], "Graph.pdf"))  
  file.copy(from=paste0(getwd(), "/", uiclist$UIC[i], " Graph.pdf"),  
            to = paste0(getwd(), "/UIC Reports/", uiclist$UIC[i], " Graph.pdf"))  
  file.remove(paste0(getwd(), "/", uiclist$UIC[i], " Graph.pdf"))  
}
```

# Questions?

GitHub Repo for code: <https://github.com/jimpleussjr/AORS>

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