Hurricane Analysis and Visulization Using R

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Contents

Chapter 1

Preface

This is a class project written in **Markdown**. We are still working on it.

Chapter 2

Introduction

Explain why we chose this topic, and the questoins we are interested in studying.

We can write citation, for example, we are using the **bookdown** package (Xie, 2019) in this project, which was built on top of R Markdown and **knitr** (Xie, 2015).

Chapter 3

Methods

3.1 Data sources

(We describe our data sources, our methods in this chapter)

Storm tracks data can be downloaded from National Hurricane Center and Central Pacific Hurricane Center. The data using in the project is known as Atlantic hurricane database (HURDAT2) 1851-2018 (5.9MB download). The data has a comma-delimited, text format with six-hourly information on the location, maximum winds, central pressure, and (beginning in 2004) size of all known tropical cyclones and subtropical cyclones.

3.2 Read data

```
library(tidyverse)
library(stringr)
# Read in data set
storm_strings <- read_lines("https://www.nhc.noaa.gov/data/hurdat/hurdat2-1851-2018-051019.txt")
```

3.3 Data transformat

Describe the process of getting the data into a form in which we could work with it in R.

3.4 Missing values

Describe any patterns we discover in missing values.

Chapter 4

Results

Provide a short nontechnical but *significant* summary of the most revealing findings of our analysis written for a nontechnical audience. Take extra care to clean up our graphs, ensuring that best practices for presentation are followed, as described in the audience ready style section below.

Chapter 5

Interactive Component

Select one (or more) of our key findings to present in an interactive format (D3). Be selective in the choices that we present to the user; the idea is that in 5-10 minutes, users should have a good sense of the question(s) that we are interested in and the trends we've identified in the data. In other words, they should understand the value of the analysis, be it business value, scientific value, general knowledge, etc.

Chapter 6

Conclusion

Discuss limitations and future directions, lessons learned.

Bibliography

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2019). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.14.