COMP1204: Data Management
Coursework One: Hurricane Monitoring

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1 Introduction

This work aims to extract useful storm data from a set of hurricane reports in KML format. The structure of tags in these reports resemble that of XML files. Instead of using an XML parser, the script uses regular expressions and the Unix utility sed extensively to filter and group data of individual storms.

The extracted data is exported in CSV format. Storm plots are generated as PNG files from the CSV output using the provided create_map_plot.sh script.

2 Create CSV Script

[linenos]bash !/bin/bash
1 Set 2 varialbes to extract data from KML,and save as CSV
kml$_{i}nput$ =1 csv$_{o}utput$ =2
Set the first line of output file echo "Timestamp,Latitude,Longitude,MinSeaLevelPressure,MaxIntensity" ¿ 2
2 Collect the 5 required data Cut off useless parts then add unit at the end of each line
grep timestamp grep "¡dtg¿" $1|cut-d$" > " $-f2|cut-d$" < " $-f1 > ts.txt$
grep latitude grep "¡lat¿" $1|cut-d$" > " $-f2|cut-d$" < " $-f1$ $|sed$"$s//$ N/g" ¿lat.txt
grep longitude grep "¡lon¿" $1|cut-d$" > " $-f2|cut-d$" < " $-f1$ $|sed$"$s//$ W/g" ¿ lon.txt
grep max intensity grep "¡intensity¿" $1|cut-d$" > " $-f2|cut-d$" < " $-f1$ $|sed$"$s//$ knots/g" ¿ inten.txt
grep min sealevel pressure grep "¡minSea.*¿" $1|cut-d$" > " $-f2|cut-d$" < " $-f1$ $|sed$"$s//$ mb/g" ¿ press.txt
3 Paste data in order, output final data as a CSV file paste -d ',' ts.txt lat.txt lon.txt press.txt inten.txt ¿¿2

3 Storm Plots

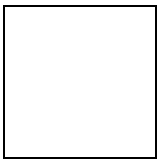

Figure 1: Generated from al102020.kml

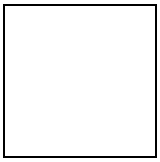

Figure 2: Generated from al112020.kml

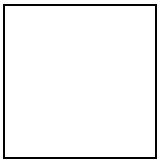

Figure 3: Generated from al122020.kml