ClimateAnalyzer Data Analysis

Kyle Cook

SJSU, CS 46B-01

***Abstract* – This report details the results of my Climate Analyzer program. The program reads in a data set file provided by Professor Dr. Lee from the Climate Change Knowledge Portal. This data set contains temperature readings of various months and years for all countries. With the data in this file, I was able to create multiple other data set files containing information depending on the task and user input.**

I. Results

After running my program, we were asked to find the country that experienced the most drastic climate change between a given time period, which in this case was a specific month and 2 different years. After running my program with the parameters of January and comparing the year 2000 with 2016, the yielded results showed that Finland had the biggest change in temperature. The results can be seen in Figure 1.1.

10 Unique Countries with the Largest Temperature Differences (absolute value) for the Month of January between years 2000 - 2016.

Temperature	Year	Month	Country	Country_Code
3.41(C) 38.13(F)	16	Jan	Portugal	PRT
3.54(C) 38.37(F)	16	Jan	Spain	ESP
3.93(C) 39.07(F)	16	Jan	Lithuania	LTU
4.25(C) 39.65(F)	16	Jan	Greenland	GRL
4.64(C) 40.35(F)	16	Jan	Canada	CAN
4.7(C) 40.47(F)	16	Jan	Latvia	LVA
5.02(C) 41.04(F)	16	Jan	Norway	NOR
5.63(C) 42.13(F)	16	Jan	Sweden	SWE
5.99(C) 42.78(F)	16	Jan	Estonia	EST
6.9(C) 44.42(F)	16	Jan	Finland	FIN

Figure 1.1 Task - C1 (Greatest Temperature Change)

As shown in the figure, Finland can be seen with greatest temperature change with a difference of 6.9 °C (44.42 °F) for the month of January in the years 2000 vs 2016. Although Finland had the greatest temperature change in the whole file for these specific parameters, these years did not include Finland's lowest and highest temperatures in the month of January. Thus, I decided to take it one step further and use other data sets I created in order to find the biggest change for temperatures in Finland for the month of January regardless of the years. In order to do so I had to find the lowest and highest temperatures over all for Finland in January, which are results yielded from Task A-1, and then use that data to determine Finland's greatest temperature change in the month of January within this data set. As shown Figure 1.2 below, the lowest temperature for Finland in January is -16.19 °C (2.85 °F) and the highest is -5.86 °C (21.46 °F).

The Lowest Temperature for the Country of Finland in the month of January.

Temperature	Year	Month	Country	Country_Code
-16.19(C) 2.85(F)	2003	Jan	Finland	FIN

The Highest Temperature for the Country of Finland in the month of January.

Temperature	Year	Month	Country	Country_Code
-5.86(C) 21.46(F)	2008	Jan	Finland	FIN

Figure 1.2 Task A-1 (Finland low & high for January)

II. Conclusion

Using these results, I was able to determine the greatest change in January for the country of Finland occurred between the years 2003 and 2008. The change within these two temperatures came out to be 10.32 °C (50.576 °F).