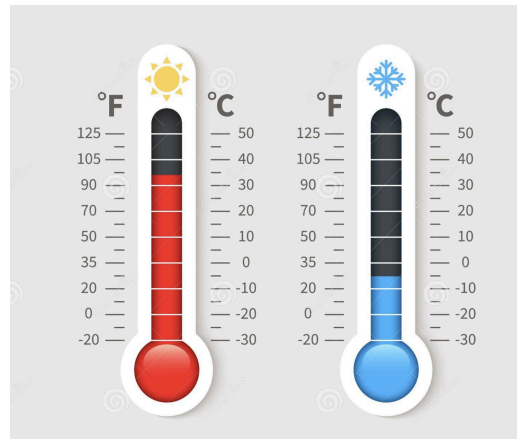# Predicting Charlottesville Weather Temperatures

DS 4002 Case Study by Cameron Barlow

Weather is a factor in everyone's life that influences many aspects of their day with questions they ask themselves. What should I wear outside? Can I go outside today? How much water should I bring? These are just some examples of how weather and its temperatures can influence the everyday life of a person.

At the same time, temperature is more than just a short-term concern. Long-term shifts in average temperature patterns have implications that extend far beyond deciding whether to wear a jacket. Rising temperatures affect ecosystems, agriculture, public health, and much more. Because of this, scientists have increasingly focused not just on weather, which changes daily, but on climate patterns that evolve over decades.

Over the last 50 or so years, it has become increasingly prevalent that the temperatures across the world have been increasing in a process known as climate change. Politicians and lawmakers have been forced to act to attempt to slow the rising temperatures in order to limit the damage on peoples' lives due to the rising sea levels and other effects of the rising temperatures.

You are a data scientist tasked to see if temperatures are still expected to rise in the future. You will use a time series model to be able to forecast temperature trends over the next several decades and evaluate whether the warming pattern observed historically is projected to continue. In doing this, you will have to create a GitHub page detailing the findings of your forecasts. Your results could affect how lawmakers and others move forward in dealing with climate change, whether that is increasing the amount of electric vehicles made around the world, adopting more renewable energy such as solar energy, and much more.

GitHub Link: https://github.com/2014cb22-del/CS3