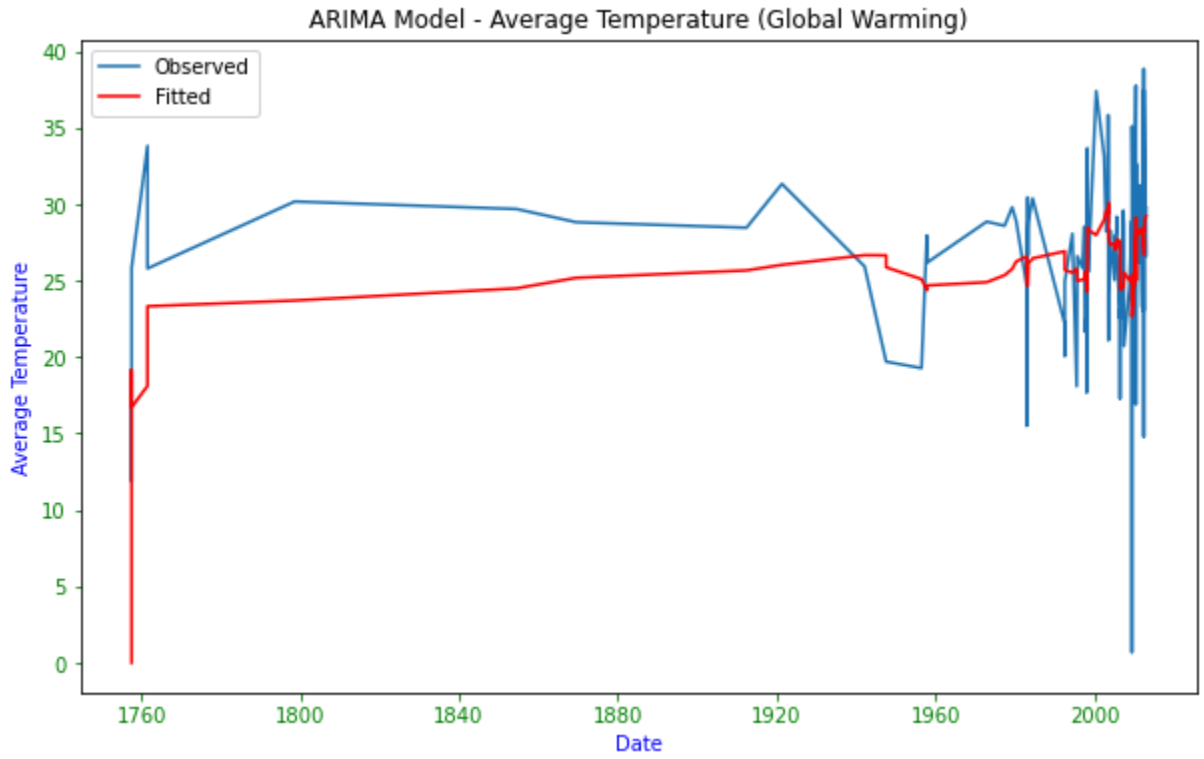
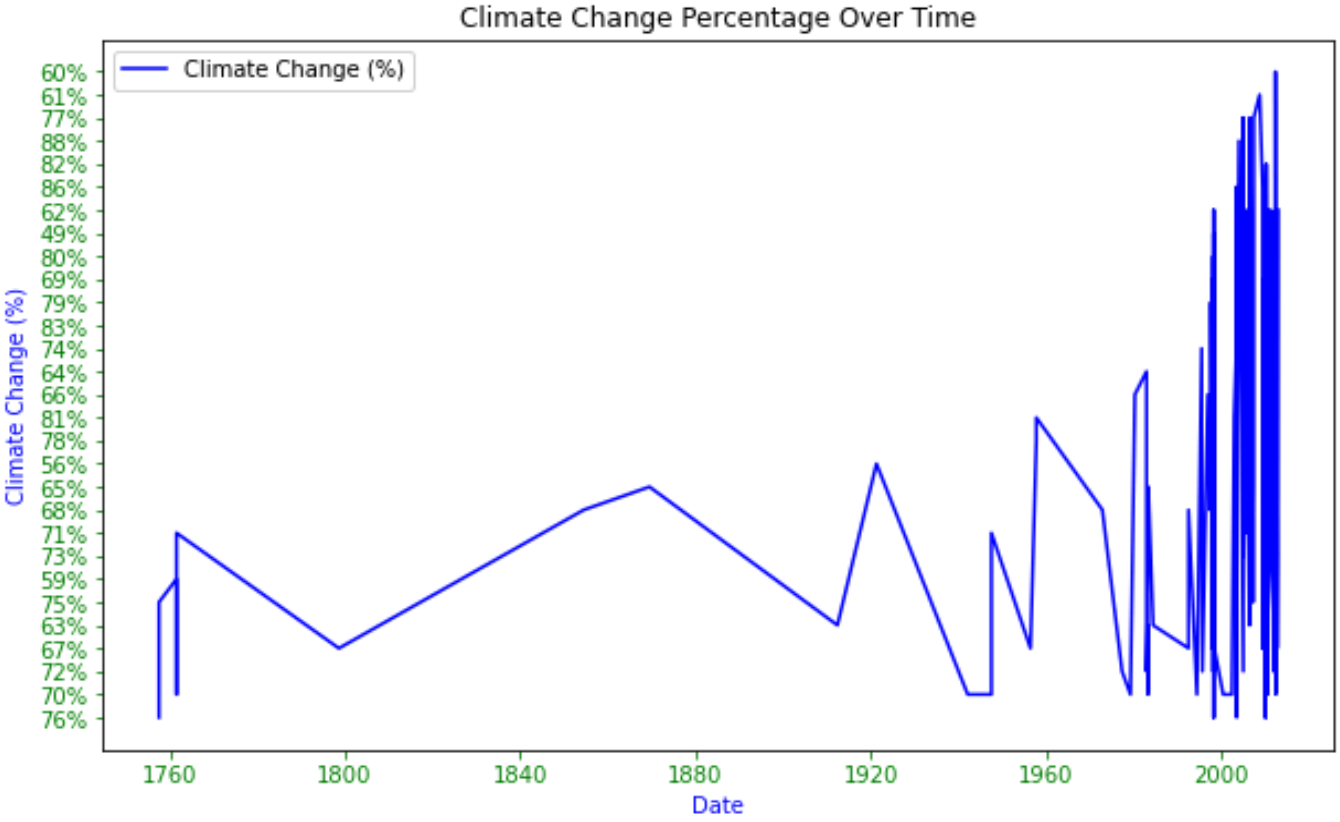
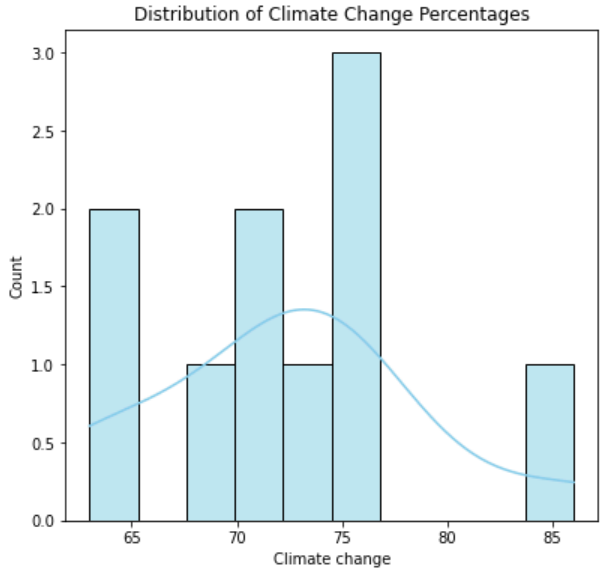
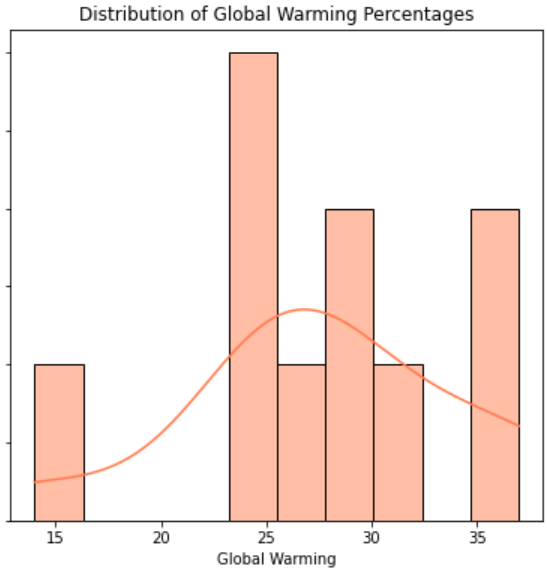
The ARIMA model, despite its simplicity in this application, provided valuable insights into the trends in average temperatures related to global warming. By fitting the model to the temperature data, we could visualize the trend and understand how the temperature changes over time. Additionally, the comparative and correlational analyses of Climate Change and Global Warming percentages offered a broader perspective on the data, emphasizing the interconnectedness of these two critical aspects of environmental change.

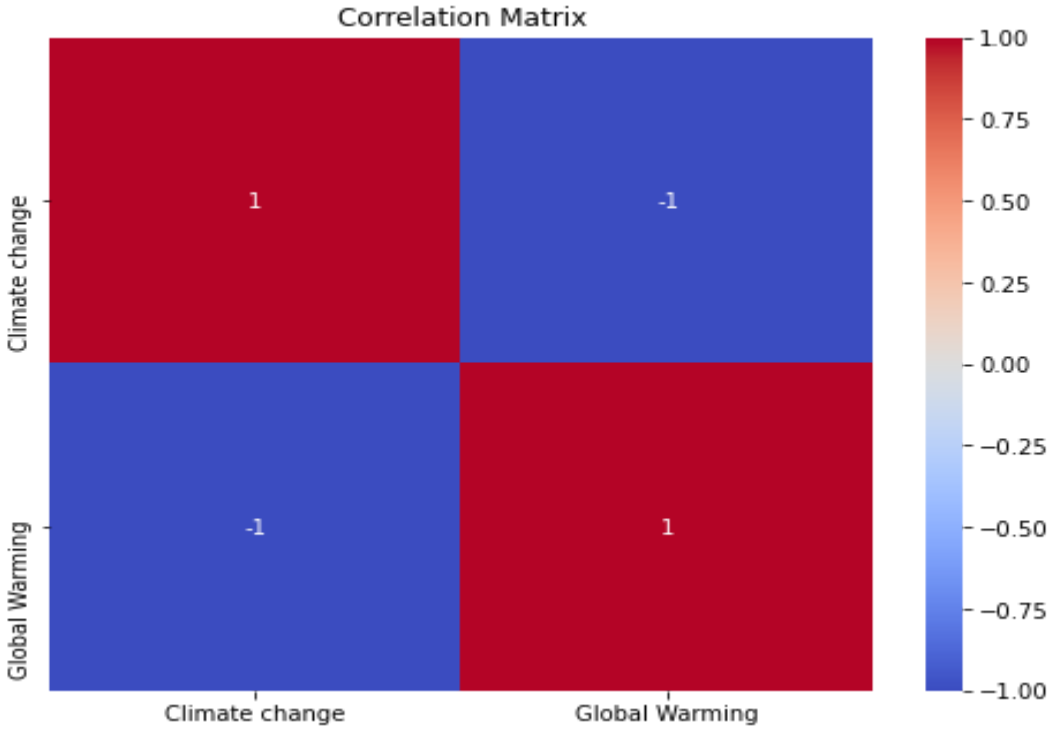


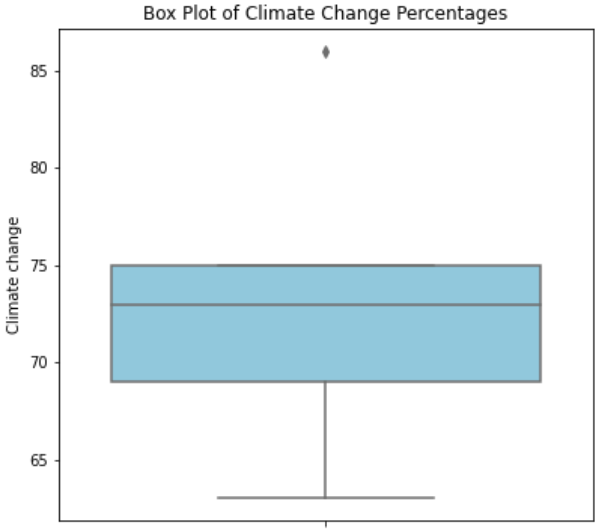
In Summary,while the dataset was limited, the application of the ARIMA model and subsequent analyses demonstrated its potential in understanding and forecasting trends in environmental data, contributing to informed decision-making and policy development in addressing climate change and global warming.

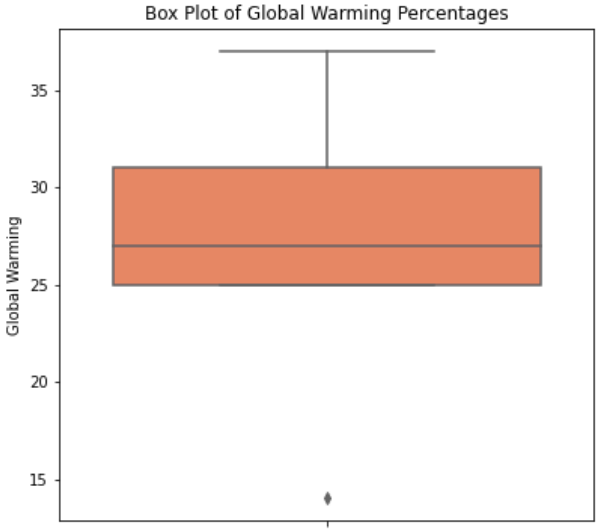

Climate Change Percentage Over Time
Climate Change (%)
60%
61%
77%
88%
82%
86%
62%
49%
80%
69%
79%
83%
74%
64%
66%
81%
78%
56%
65%
68%
71%
73%
59%
75%
63%
67%
72%
70%
76%
Climate Change (%)
1760
1800
1840
1880
1920
1960
2000
Date


Distribution of Climate Change Percentages
Count
3.0
2.5
2.0
1.5
1.0
0.5
0.0
65
70
75
80
85
Climate change


Distribution of Global Warming Percentages
15
20
25
30
35
Global Warming


Correlation Matrix
Climate change
Global Warming
1
-1
-1
1
Climate change
Global Warming
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00


Box Plot of Climate Change Percentages
Climate change
85
80
75
70
65


Box Plot of Global Warming Percentages
Global Warming
35
30
25
20
15

Result and Limitations

This dataset isn’t necessarily the best dataset to definitively find the difference between global warming and climate change. Here's why:Limited Timeframe: The data covers a period from January 1st, 2004 to September 27th, 2021 (less than 18 years). Climate change is a long-term phenomenon measured in decades or even centuries. This dataset wouldn't capture the long-term trends needed to fully distinguish climate change from natural fluctuations in weather.

Missing Data : The dataset focuses on "Climate Change" and "Global Warming" values, but it doesn't provide any specific details on what those values represent (e.g., temperature change, policy implementations). Without that context, it's difficult to understand how they differ.

Limited Scope :The dataset seems to be focused on a single country, while climate change and global warming are global issues. A broader dataset encompassing multiple countries over a longer period would be more suitable.

By analyzing these elements, scientists can compare global temperature increases (global warming) with the resulting changes in weather patterns and ecosystems (climate change).