

Global temperature analysis

Take United States as example

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Data gathered from <https://www.kaggle.com/datasets/berkeleyearth/climate-change-earth-surface-temperature-data/data>
<https://github.com/ZZQ-dev/2415-final-project>



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The background is a complex abstract composition of various geometric shapes and symbols. At the top, there are blue, yellow, and grey rectangular blocks. A small orange circle is on the left, and a black zigzag symbol is in the center. Below these, a large white rectangle with a dark blue border contains the text. To the left of the white rectangle is a white triangle. To the right is a grey rectangle and a blue rectangle. At the bottom, there are green, orange, and grey rectangular blocks. A small orange circle is on the right, and a black zigzag symbol is in the center. The overall style is modern and geometric.

Global temperature evolution

Global Temperature Evolution From 1743 to 2013

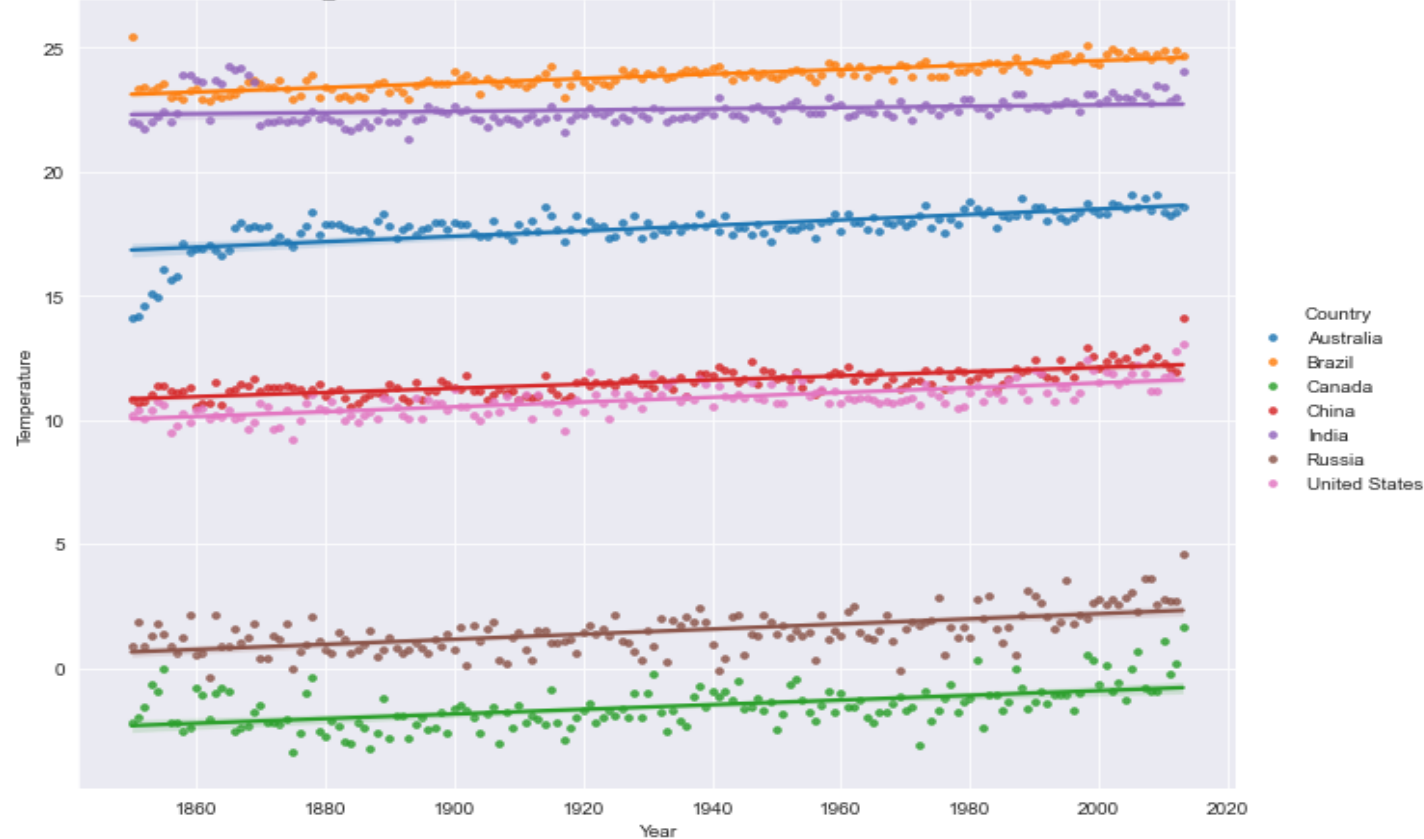


- Blue represents Australia
- Orange represents Brazil
- Green represents Canada
- Red represents China
- Purple represents India
- Brown represents Russia
- Pink represents United States
- Dots represents the error. The magnitude of the error increases proportionally with the size of the dots or the numerical value.

The background is a complex abstract composition of various geometric shapes and patterns. It includes large blocks of blue, yellow, orange, green, and grey. There are also smaller elements like a white triangle, a small orange circle, a grey ring, a grey cube, and several sets of wavy lines. The overall style is reminiscent of mid-century modern or Bauhaus design.

Global temperature evolution (cont.)

Global Temperature Evolution From 1850 to 2013

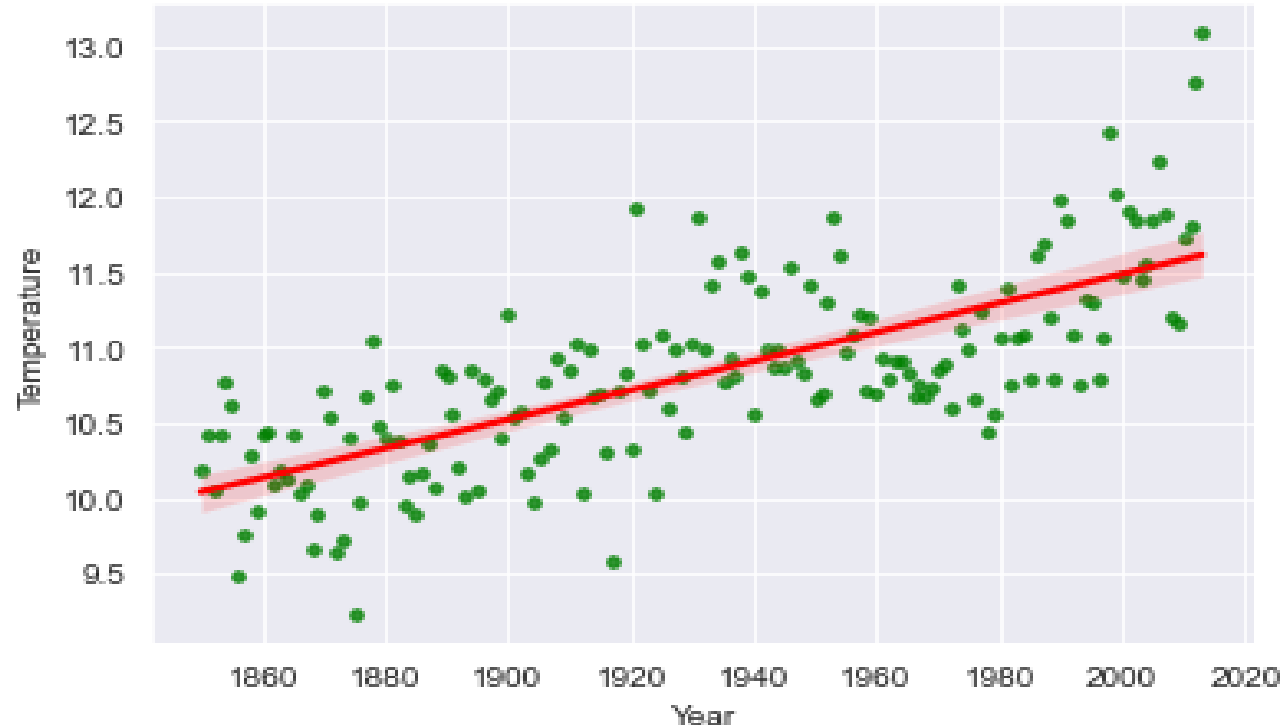


- This image contains a linear regression for all countries,
- For all countries, average temperature slowly increase.
- Only take temperatures after 1850 because the errors before this are too large.



USA temperature evolution

USA Temperature Evolution From 1850 to 2013

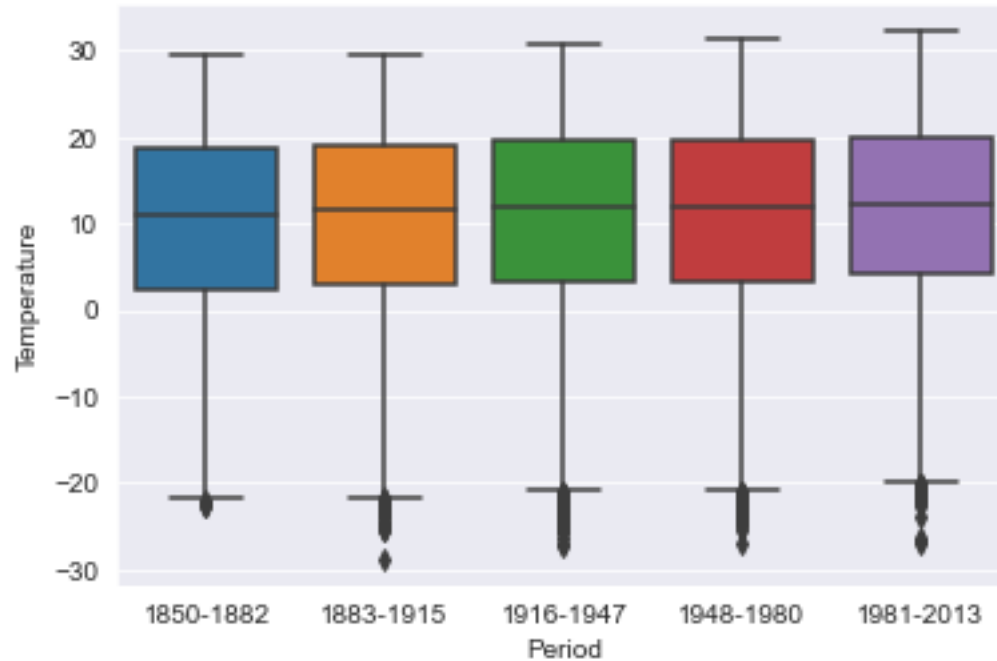


- This image contains the linear regression of USA temperature and its confidence interval.
- For 163 years, average temperature of USA increased about 1.5 degrees

Boxplot of USA temperature



Boxplots of Temperature Evolution in USA (32 years per period)



- Lower temperatures are rarer and become outliers as time period increase
- And notice that the high temperature increase and become more dominant.

Thank you