Midterm Project

Sweta Kumari

Department of Business Analytics, Golden Gate University

July 3, 2020

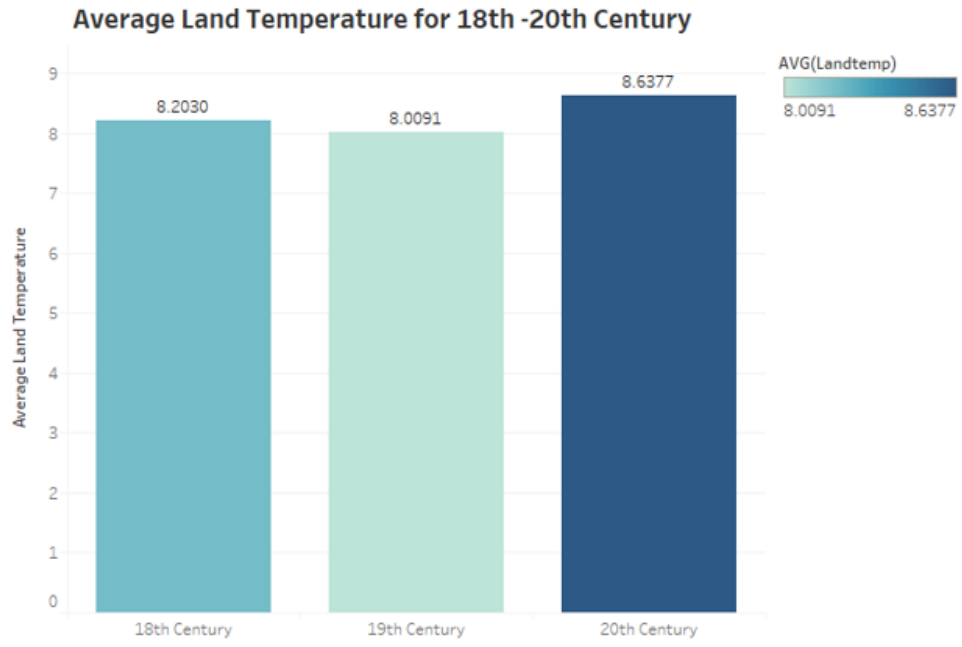
1. What was the avg and max land and ocean temperatures for the 18th, 19th, and 20th centuries?

   Land Average and Maximum Temperature for the 18th, 19th and 20th centuries:

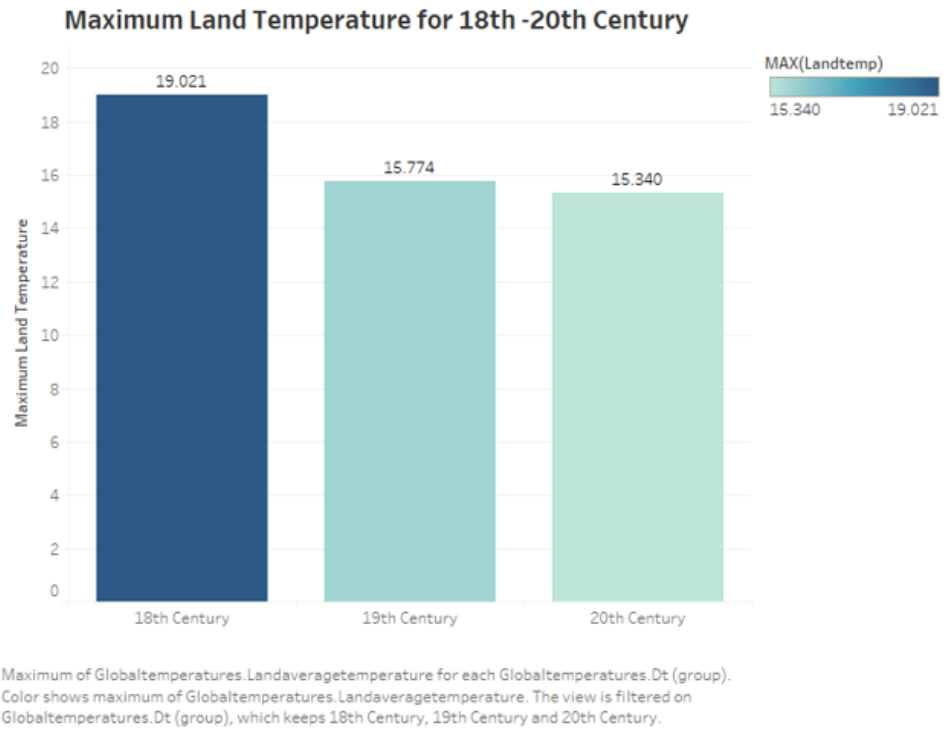
```
SELECT SUBSTR(DATE_FORMAT(dt,'y'),1,2) as YearStartsFrom,
ROUND(AVG(CAST(landaveragetemperature as float)),3) as Average_Temperature,
MAX(CAST(landaveragetemperature as float)) as Maximum_Temperature
FROM globaltemperatures WHERE dt BETWEEN TO_DATE('1700-01-01')
AND TO_DATE('1999-12-31') GROUP BY SUBSTR(DATE_FORMAT(dt,'y'),1,2);
```

	yearstartsfrom	average_temperature	maximum_temperature
1	17	8.203	19.021
2	18	8.009	15.774
3	19	8.638	15.34

   Plotting of results (Tool used: Tableau):



Average of Globaltemperatures.Landaveragetemperature for each Globaltemperatures.Dt (group). Color shows average of Globaltemperatures.Landaveragetemperature. The view is filtered on Globaltemperatures.Dt (group), which keeps 18th Century, 19th Century and 20th Century.



18th Century: Average Temperature is 8.203 and Maximum temperature is 19.021.

19th Century: Average Temperature is 8.009 and Maximum temperature is 15.774.

20th Century: Average Temperature is 8.638 and Maximum temperature is 15.34.

Average land temperature for all three (18,19 &20) centuries:

```
SELECT ROUND(AVG(CAST(landaveragetemperature as float)),3) as Average_Temperature
FROM globaltemperatures WHERE dt BETWEEN TO_DATE('1700-01-01')
AND TO_DATE('1999-12-31');
```

	average_temperature
1	8.3

The highest land temperature for all three centuries is 19.021.

The average land temperature for all three centuries is 8.3.

We could not analyze the ocean temperature as the data for ocean temperature was not available.

2. What was the highest land and ocean temperatures in 18th, 19th, and 20th centuries?

   Screenshot for query and result:

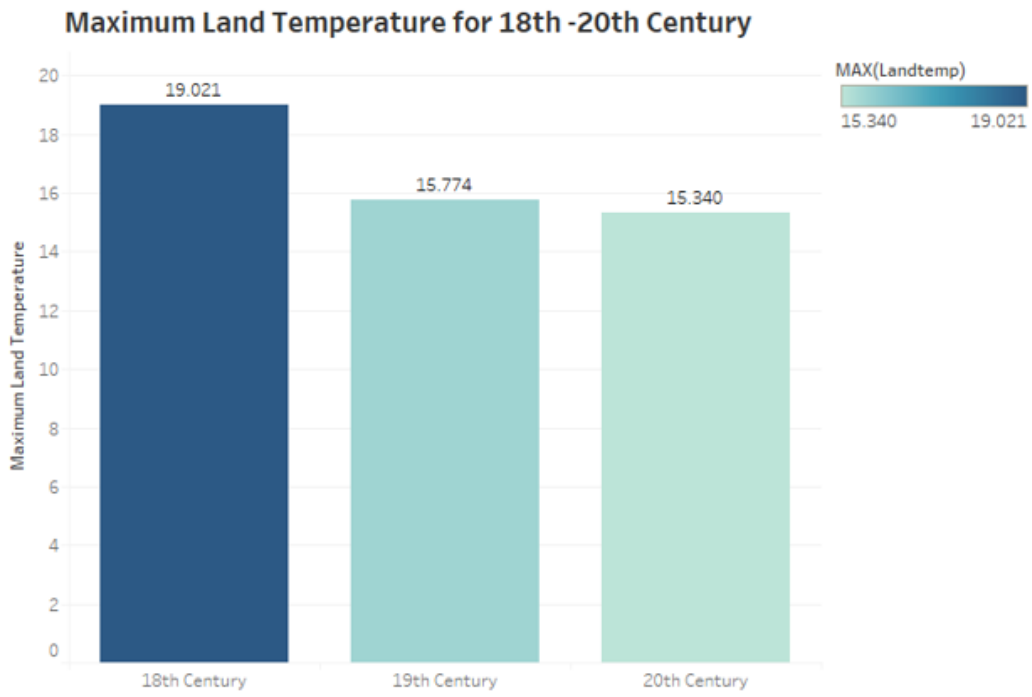
```
SELECT SUBSTR(DATE_FORMAT(dt,'y'),1,2) as YearStartsFrom,
MAX(CAST(landaveragetemperature as float)) as Maximum_Temperature
FROM globaltemperatures WHERE dt BETWEEN TO_DATE('1700-01-01')
AND TO_DATE('1999-12-31') GROUP BY SUBSTR(DATE_FORMAT(dt,'y'),1,2);
```

	yearstartsfrom	maximum_temperature
1	17	19.021
2	18	15.774
3	19	15.34

18th Century: Maximum temperature is 19.021.

19th Century: Maximum temperature is 15.774.

20th Century: Maximum temperature is 15.34.



Maximum of Globaltemperatures.Landaveragetemperature for each Globaltemperatures.Dt (group). Color shows maximum of Globaltemperatures.Landaveragetemperature. The view is filtered on Globaltemperatures.Dt (group), which keeps 18th Century, 19th Century and 20th Century.

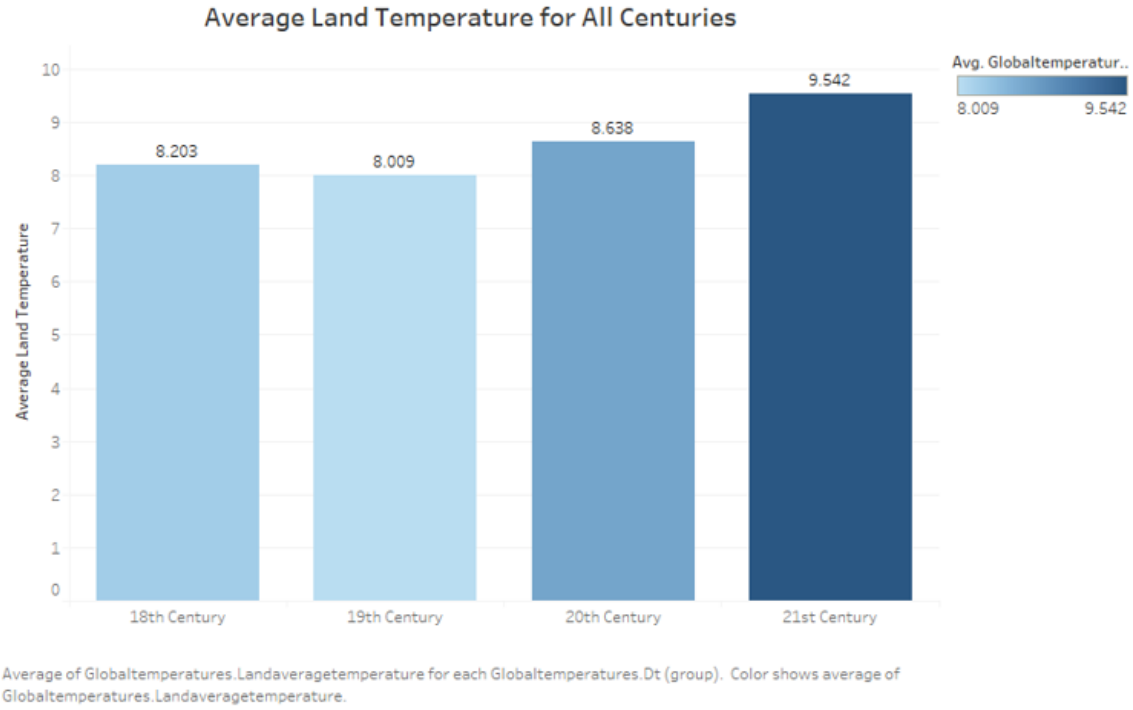
We could not analyze the ocean temperature as the data for ocean temperature was not available.

3. What is the overall trend in the avg land and ocean temperatures?

Let us check average land temperature for all centuries:

```
SELECT SUBSTR(DATE_FORMAT(dt,'y'),1,2) as YearStartsFrom,
ROUND(AVG(CAST(landaveragetemperature as float)),3) as Average_Temperature
FROM globaltemperatures GROUP BY SUBSTR(DATE_FORMAT(dt,'y'),1,2);
```

	yearstartsfrom	average_temperature
1	17	8.203
2	18	8.009
3	19	8.638
4	20	9.542



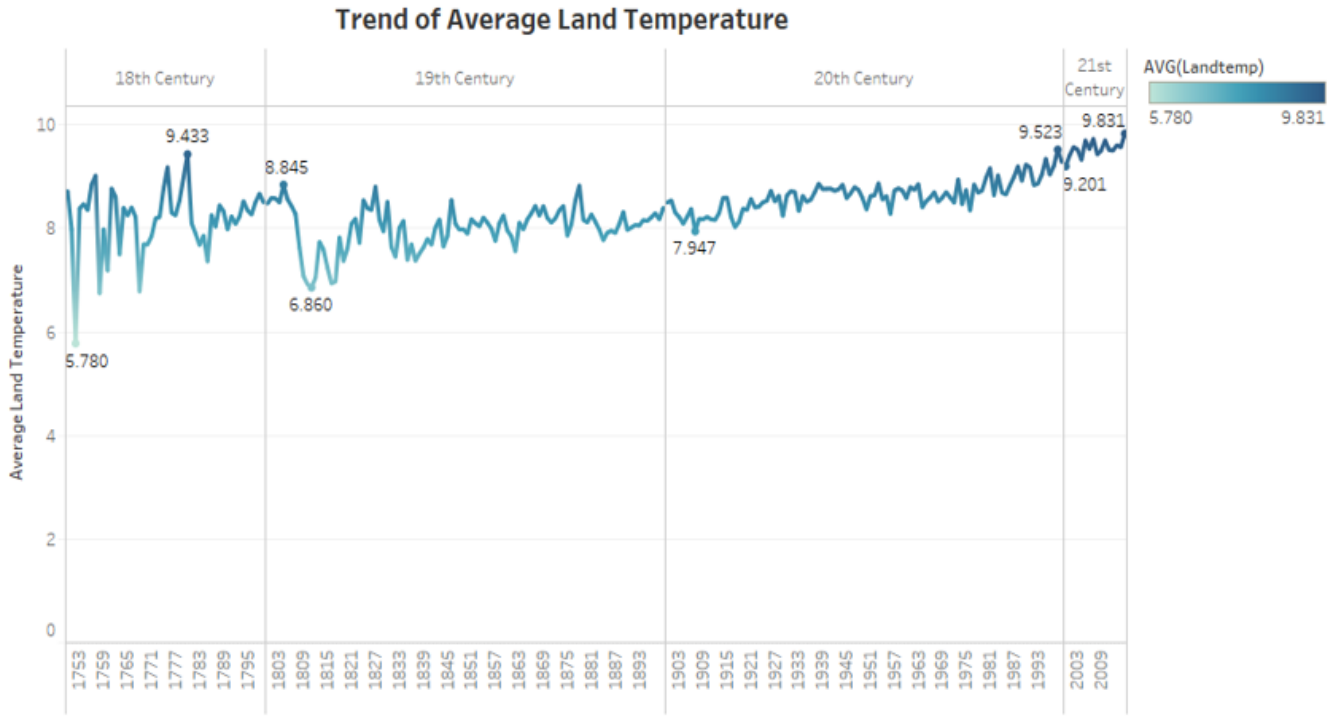
Average land temperature is decreased from 18th to 19th century. Then, it increased till 21st century.

Let us check average land temperature for all years:

```
SELECT date_format(dt,'y') as Year,
ROUND(AVG(CAST(landaveragetemperature as float)),3) as Average_Temperature
FROM globaltemperatures GROUP BY date_format(dt,'y');
```

Few rows of the results are:

	year	average_temperature
1	1750	8.719
2	1751	7.976
3	1752	5.78
4	1753	8.388
5	1754	8.469



The trend of average of Globaltemperatures.Landaveragetemperature for Globaltemperatures.Dt Year broken down by Globaltemperatures.Dt (group). Color shows average of Globaltemperatures.Landaveragetemperature. The marks are labeled by average of Globaltemperatures.Landaveragetemperature. The view is filtered on Globaltemperatures.Dt (group) and average of Globaltemperatures.Landaveragetemperature. The Globaltemperatures.Dt (group) filter keeps 18th Century, 19th Century, 20th Century and 21st Century. The average of Globaltemperatures.Landaveragetemperature filter includes everything.

The average land temperature shows fluctuation throughout the years from 1750 to 2015. The minimum average temperature is 5.78 while the maximum average temperature reached 9.433 around after 1780 in the 18th Century. For the 19th century, the minimum average temperature is 6.86 while the maximum average temperature is 8.846 that is reached around 1803. Then, it is increasing with fluctuation. For the 20th Century, the minimum average temperature is 7.947 and the maximum average temperature is reached to 9.523 near the end of the 20th Century (1999). The trend is showing an increment in the average temperature. For the 21st Century, the minimum average temperature is 9.201 while the maximum average temperature is 9.831 that is reached around 2015.

Overall trend: The average land temperature is increased from 5.78 to 9.831 from 1750 to 2015. In 1780, the temperature increased and reached to 9.43. After that, it is reduced and increased with fluctuation till 2015 with a value of 9.831.

We could not analyze the ocean temperature as the data for ocean temperature was not available.