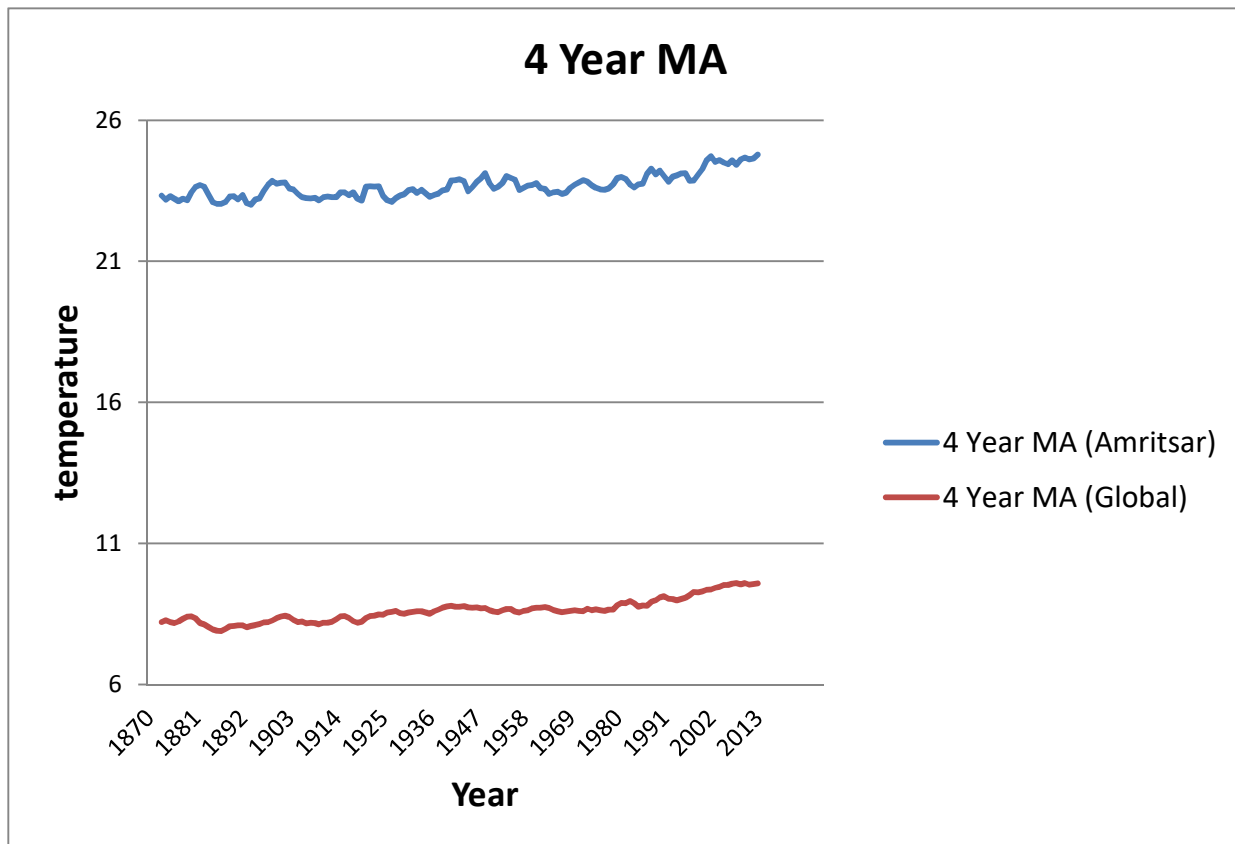


| Year | Avg_temp(Amritsar) | Avg_temp(global) | 4 Year MA (Amritsar) | 4 Year MA (Global) |
|------|--------------------|------------------|----------------------|--------------------|
| 1870 | 23.3 | 8.2 | | |
| 1871 | 23.21 | 8.12 | | |
| 1872 | 23.34 | 8.19 | | |
| 1873 | 23.45 | 8.35 | 23.325 | 8.215 |
| 1874 | 22.71 | 8.43 | 23.1775 | 8.2725 |
| 1875 | 23.73 | 7.86 | 23.3075 | 8.2075 |
| 1876 | 23 | 8.08 | 23.2225 | 8.18 |
| 1877 | 23.06 | 8.54 | 23.125 | 8.2275 |
| 1878 | 23.1 | 8.83 | 23.2225 | 8.3275 |
| 1879 | 23.5 | 8.17 | 23.165 | 8.405 |
| 1880 | 24.12 | 8.12 | 23.445 | 8.415 |
| 1881 | 23.83 | 8.27 | 23.6375 | 8.3475 |
| 1882 | 23.36 | 8.13 | 23.7025 | 8.1725 |
| 1883 | 23.27 | 7.98 | 23.645 | 8.125 |
| 1884 | 23.05 | 7.77 | 23.3775 | 8.0375 |
| 1885 | 22.7 | 7.92 | 23.095 | 7.95 |
| 1886 | 23.13 | 7.95 | 23.0375 | 7.905 |
| 1887 | 23.27 | 7.91 | 23.0375 | 7.8875 |
| 1888 | 23.3 | 8.09 | 23.1 | 7.9675 |
| 1889 | 23.49 | 8.32 | 23.2975 | 8.0675 |
| 1890 | 23.17 | 7.97 | 23.3075 | 8.0725 |
| 1891 | 22.83 | 8.02 | 23.1975 | 8.1 |
| 1892 | 23.91 | 8.07 | 23.35 | 8.095 |
| 1893 | 22.3 | 8.06 | 23.0525 | 8.03 |
| 1894 | 22.98 | 8.16 | 23.005 | 8.0775 |
| 1895 | 23.57 | 8.15 | 23.19 | 8.11 |
| 1896 | 24.05 | 8.21 | 23.225 | 8.145 |
| 1897 | 23.36 | 8.29 | 23.49 | 8.2025 |
| 1898 | 23.88 | 8.18 | 23.715 | 8.2075 |
| 1899 | 24.1 | 8.4 | 23.8475 | 8.27 |
| 1900 | 23.65 | 8.5 | 23.7475 | 8.3425 |
| 1901 | 23.51 | 8.54 | 23.785 | 8.405 |
| 1902 | 23.9 | 8.3 | 23.79 | 8.435 |
| 1903 | 23.24 | 8.22 | 23.575 | 8.39 |
| 1904 | 23.52 | 8.09 | 23.5425 | 8.2875 |
| 1905 | 22.91 | 8.23 | 23.3925 | 8.21 |
| 1906 | 23.43 | 8.38 | 23.275 | 8.23 |
| 1907 | 23.11 | 7.95 | 23.2425 | 8.1625 |
| 1908 | 23.46 | 8.19 | 23.2275 | 8.1875 |
| 1909 | 22.99 | 8.18 | 23.2475 | 8.175 |
| 1910 | 23.1 | 8.22 | 23.165 | 8.135 |
| 1911 | 23.54 | 8.18 | 23.2725 | 8.1925 |
| 1912 | 23.54 | 8.17 | 23.2925 | 8.1875 |

| | | | | |
|------|-------|------|---------|--------|
| 1913 | 22.92 | 8.3 | 23.275 | 8.2175 |
| 1914 | 23.11 | 8.59 | 23.2775 | 8.31 |
| 1915 | 24.21 | 8.59 | 23.445 | 8.4125 |
| 1916 | 23.53 | 8.23 | 23.4425 | 8.4275 |
| 1917 | 22.51 | 8.02 | 23.34 | 8.3575 |
| 1918 | 23.53 | 8.13 | 23.445 | 8.2425 |
| 1919 | 23.29 | 8.38 | 23.215 | 8.19 |
| 1920 | 23.26 | 8.36 | 23.1475 | 8.2225 |
| 1921 | 24.52 | 8.57 | 23.65 | 8.36 |
| 1922 | 23.57 | 8.41 | 23.66 | 8.43 |
| 1923 | 23.26 | 8.42 | 23.6525 | 8.44 |
| 1924 | 23.29 | 8.51 | 23.66 | 8.4775 |
| 1925 | 23.14 | 8.53 | 23.315 | 8.4675 |
| 1926 | 22.94 | 8.73 | 23.1575 | 8.5475 |
| 1927 | 23.05 | 8.52 | 23.105 | 8.5725 |
| 1928 | 23.81 | 8.63 | 23.235 | 8.6025 |
| 1929 | 23.54 | 8.24 | 23.335 | 8.53 |
| 1930 | 23.1 | 8.63 | 23.375 | 8.505 |
| 1931 | 23.64 | 8.72 | 23.5225 | 8.555 |
| 1932 | 23.93 | 8.71 | 23.5525 | 8.575 |
| 1933 | 23.02 | 8.34 | 23.4225 | 8.6 |
| 1934 | 23.53 | 8.63 | 23.53 | 8.6 |
| 1935 | 23.16 | 8.52 | 23.41 | 8.55 |
| 1936 | 23.41 | 8.55 | 23.28 | 8.51 |
| 1937 | 23.3 | 8.7 | 23.35 | 8.6 |
| 1938 | 23.72 | 8.86 | 23.3975 | 8.6575 |
| 1939 | 23.6 | 8.76 | 23.5075 | 8.7175 |
| 1940 | 23.56 | 8.76 | 23.545 | 8.77 |
| 1941 | 24.59 | 8.77 | 23.8675 | 8.7875 |
| 1942 | 23.73 | 8.73 | 23.87 | 8.755 |
| 1943 | 23.76 | 8.76 | 23.91 | 8.755 |
| 1944 | 23.27 | 8.85 | 23.8375 | 8.7775 |
| 1945 | 23.15 | 8.58 | 23.4775 | 8.73 |
| 1946 | 24.3 | 8.68 | 23.62 | 8.7175 |
| 1947 | 24.54 | 8.8 | 23.815 | 8.7275 |
| 1948 | 23.78 | 8.75 | 23.9425 | 8.7025 |
| 1949 | 23.89 | 8.59 | 24.1275 | 8.705 |
| 1950 | 22.82 | 8.37 | 23.7575 | 8.6275 |
| 1951 | 23.8 | 8.63 | 23.5725 | 8.585 |
| 1952 | 24.02 | 8.64 | 23.6325 | 8.5575 |
| 1953 | 24.44 | 8.87 | 23.77 | 8.6275 |
| 1954 | 23.85 | 8.56 | 24.0275 | 8.675 |
| 1955 | 23.52 | 8.63 | 23.9575 | 8.675 |
| 1956 | 23.76 | 8.28 | 23.8925 | 8.585 |

| | | | | |
|------|-------|------|---------|--------|
| 1957 | 22.98 | 8.73 | 23.5275 | 8.55 |
| 1958 | 24.16 | 8.77 | 23.605 | 8.6025 |
| 1959 | 23.81 | 8.73 | 23.6775 | 8.6275 |
| 1960 | 23.87 | 8.58 | 23.705 | 8.7025 |
| 1961 | 23.24 | 8.8 | 23.77 | 8.72 |
| 1962 | 23.45 | 8.75 | 23.5925 | 8.715 |
| 1963 | 23.71 | 8.86 | 23.5675 | 8.7475 |
| 1964 | 23.17 | 8.41 | 23.3925 | 8.705 |
| 1965 | 23.44 | 8.53 | 23.4425 | 8.6375 |
| 1966 | 23.55 | 8.6 | 23.4675 | 8.6 |
| 1967 | 23.41 | 8.7 | 23.3925 | 8.56 |
| 1968 | 23.33 | 8.52 | 23.4325 | 8.5875 |
| 1969 | 24.13 | 8.6 | 23.605 | 8.605 |
| 1970 | 24.01 | 8.7 | 23.72 | 8.63 |
| 1971 | 23.71 | 8.6 | 23.795 | 8.605 |
| 1972 | 23.67 | 8.5 | 23.88 | 8.6 |
| 1973 | 23.86 | 8.95 | 23.8125 | 8.6875 |
| 1974 | 23.54 | 8.47 | 23.695 | 8.63 |
| 1975 | 23.35 | 8.74 | 23.605 | 8.665 |
| 1976 | 23.44 | 8.35 | 23.5475 | 8.6275 |
| 1977 | 23.83 | 8.85 | 23.54 | 8.6025 |
| 1978 | 23.7 | 8.69 | 23.58 | 8.6575 |
| 1979 | 23.94 | 8.73 | 23.7275 | 8.655 |
| 1980 | 24.33 | 8.98 | 23.95 | 8.8125 |
| 1981 | 23.98 | 9.17 | 23.9875 | 8.8925 |
| 1982 | 23.45 | 8.64 | 23.925 | 8.88 |
| 1983 | 23.11 | 9.03 | 23.7175 | 8.955 |
| 1984 | 23.9 | 8.69 | 23.61 | 8.8825 |
| 1985 | 24.44 | 8.66 | 23.725 | 8.755 |
| 1986 | 23.55 | 8.83 | 23.75 | 8.8025 |
| 1987 | 24.52 | 8.99 | 24.1025 | 8.7925 |
| 1988 | 24.61 | 9.2 | 24.28 | 8.92 |
| 1989 | 23.62 | 8.92 | 24.075 | 8.985 |
| 1990 | 24.1 | 9.23 | 24.2125 | 9.085 |
| 1991 | 23.77 | 9.18 | 24.025 | 9.1325 |
| 1992 | 23.79 | 8.84 | 23.82 | 9.0425 |
| 1993 | 24.34 | 8.87 | 24 | 9.03 |
| 1994 | 24.29 | 9.04 | 24.0475 | 8.9825 |
| 1995 | 24.04 | 9.35 | 24.115 | 9.025 |
| 1996 | 23.81 | 9.04 | 24.12 | 9.075 |
| 1997 | 23.26 | 9.2 | 23.85 | 9.1575 |
| 1998 | 24.34 | 9.52 | 23.8625 | 9.2775 |
| 1999 | 24.9 | 9.29 | 24.0775 | 9.2625 |
| 2000 | 24.57 | 9.2 | 24.2675 | 9.3025 |

| | | | | |
|------|-------|------|---------|--------|
| 2001 | 24.5 | 9.41 | 24.5775 | 9.355 |
| 2002 | 24.91 | 9.57 | 24.72 | 9.3675 |
| 2003 | 24.1 | 9.53 | 24.52 | 9.4275 |
| 2004 | 24.85 | 9.32 | 24.59 | 9.4575 |
| 2005 | 24.12 | 9.7 | 24.495 | 9.53 |
| 2006 | 24.72 | 9.53 | 24.4475 | 9.52 |
| 2007 | 24.6 | 9.73 | 24.5725 | 9.57 |
| 2008 | 24.25 | 9.43 | 24.4225 | 9.5975 |
| 2009 | 24.87 | 9.51 | 24.61 | 9.55 |
| 2010 | 24.98 | 9.7 | 24.675 | 9.5925 |
| 2011 | 24.35 | 9.52 | 24.6125 | 9.54 |
| 2012 | 24.37 | 9.51 | 24.6425 | 9.56 |
| 2013 | 25.44 | 9.61 | 24.785 | 9.585 |



Observations:-

1. On average the temperature of Amritsar is more than the global temperature.
2. From year 1870 to till 2013, the max average Global temperature is 9.7 deg. Celcius while the max average temperature of Amritsar is 25.44 deg. Celcius.
3. over 170 years the global average temperature is increased by 1.32 deg. celcius while the average temperature of Amritsar is increased by 2.14 deg. Celcius which is approx. the double of Global .
4. The world is getting hotter but Amritsar getting more hotter as compared to world.

This might be because of the pollution level as this is the major reason for the increase in the temperature or we can say global warming.

Steps Used:-

1. Extracted The data from the given tables(city_lists , city_data, global_data) using SQL queries.
2. Copied That data to excel.
3. Calculated The Moving Averages for global average _temp and for averages Amritsar using formula (=AVERAGE(B2:B5)). .
4. Created the Line Charts for moving averages and average_temperatures of world and Amritsar.

Tools used:-

1. SQL.

Accessing Data With SQL

Input

HISTORY ▾

MENU ▾

SCHEMA ↻

city_data ▾

city_list ▾

global_data ▾

1 `select year ,avg_temp from global_data where year>=1870`

Success!

EVALUATE

Output

146 results

Download CSV

| year | avg_temp |
|------|----------|
| 1870 | 8.20 |
| 1871 | 8.12 |
| 1872 | 8.19 |

Accessing Data With SQL

Input

HISTORY ▾

MENU ▾

SCHEMA ↻

city_data ▾

city_list ▾

global_data ▾

1 `select city , country from city_list where country like 'India'`

Success!

EVALUATE

Output

22 results

Download CSV

| city | country |
|-----------|---------|
| Agra | India |
| Ahmadabad | India |
| Allahabad | India |

Accessing Data With SQL

SCHEMA

- city_data
 - year
 - city
 - country
 - avg_temp

```
1 select year , avg_temp from city_data where city like 'Amritsar' and year >= 1870
```

Success!

EVALUATE

Output 144 results [Download CSV](#)

| year | avg_temp |
|------|----------|
| 1870 | 23.30 |
| 1871 | 23.21 |
| 1872 | 23.34 |
| 1873 | 23.45 |

2. Excel.

| | A | B | C | D | E |
|-----|------|-------|------|-------------------|--------|
| 89 | 1957 | 22.98 | 8.73 | 23.5275 | 8.55 |
| 90 | 1958 | 24.16 | 8.77 | 23.605 | 8.6025 |
| 91 | 1959 | 23.81 | 8.73 | =AVERAGE(B88:B91) | 8.6275 |
| 92 | 1960 | 23.87 | 8.58 | 23.705 | 8.7025 |
| 93 | 1961 | 23.24 | 8.8 | 23.77 | 8.72 |
| 94 | 1962 | 23.45 | 8.75 | 23.5925 | 8.715 |
| 95 | 1963 | 23.71 | 8.86 | 23.5675 | 8.7475 |
| 96 | 1964 | 23.17 | 8.41 | 23.3925 | 8.705 |
| 97 | 1965 | 23.44 | 8.53 | 23.4425 | 8.6375 |
| 98 | 1966 | 23.55 | 8.6 | 23.4675 | 8.6 |
| 99 | 1967 | 23.41 | 8.7 | 23.3925 | 8.56 |
| 100 | 1968 | 23.33 | 8.52 | 23.4325 | 8.5875 |
| 101 | 1969 | 24.13 | 8.6 | 23.605 | 8.605 |
| 102 | 1970 | 24.01 | 8.7 | 23.72 | 8.63 |

results(3).xlsx - Microsoft Excel (Product Activation Failed)

File Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells

Calibri 14 A A

B I U Wrap Text Merge & Center

General \$ % , .00 .00

Conditional Formatting as Table Cell Styles Insert Delete

F161 fx 2. Excel.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|-----|------|-------|------|---------|--------|---|---|---|---|---|---|---|---|---|
| 89 | 1957 | 22.98 | 8.73 | 23.5275 | 8.55 | | | | | | | | | |
| 90 | 1958 | 24.16 | 8.77 | 23.605 | 8.6025 | | | | | | | | | |
| 91 | 1959 | 23.81 | 8.73 | 23.6775 | 8.6275 | | | | | | | | | |
| 92 | 1960 | 23.87 | 8.58 | 23.705 | 8.7025 | | | | | | | | | |
| 93 | 1961 | 23.24 | 8.8 | 23.77 | 8.72 | | | | | | | | | |
| 94 | 1962 | 23.45 | 8.75 | 23.5925 | 8.715 | | | | | | | | | |
| 95 | 1963 | 23.71 | 8.86 | 23.5675 | 8.7475 | | | | | | | | | |
| 96 | 1964 | 23.17 | 8.41 | 23.3925 | 8.705 | | | | | | | | | |
| 97 | 1965 | 23.44 | 8.53 | 23.4425 | 8.6375 | | | | | | | | | |
| 98 | 1966 | 23.55 | 8.6 | 23.4675 | 8.6 | | | | | | | | | |
| 99 | 1967 | 23.41 | 8.7 | 23.3925 | 8.56 | | | | | | | | | |
| 100 | 1968 | 23.33 | 8.52 | 23.4325 | 8.5875 | | | | | | | | | |
| 101 | 1969 | 24.13 | 8.6 | 23.605 | 8.605 | | | | | | | | | |
| 102 | 1970 | 24.01 | 8.7 | 23.72 | 8.63 | | | | | | | | | |
| 103 | 1971 | 23.71 | 8.6 | 23.795 | 8.605 | | | | | | | | | |
| 104 | 1972 | 23.67 | 8.5 | 23.88 | 8.6 | | | | | | | | | |
| 105 | 1973 | 23.86 | 8.95 | 23.8125 | 8.6875 | | | | | | | | | |
| 106 | 1974 | 23.54 | 8.47 | 23.695 | 8.63 | | | | | | | | | |
| 107 | 1975 | 23.35 | 8.74 | 23.605 | 8.665 | | | | | | | | | |
| 108 | 1976 | 23.44 | 8.35 | 23.5475 | 8.6275 | | | | | | | | | |
| 109 | 1977 | 23.83 | 8.85 | 23.54 | 8.6025 | | | | | | | | | |
| 110 | 1978 | 23.7 | 8.69 | 23.58 | 8.6575 | | | | | | | | | |
| 111 | 1979 | 23.94 | 8.73 | 23.7275 | 8.655 | | | | | | | | | |
| 112 | 1980 | 24.33 | 8.98 | 23.95 | 8.8125 | | | | | | | | | |
| 113 | 1981 | 23.98 | 9.17 | 23.9875 | 8.8925 | | | | | | | | | |
| 114 | 1982 | 23.45 | 8.64 | 23.925 | 8.88 | | | | | | | | | |
| 115 | 1983 | 23.11 | 8.02 | 23.7175 | 8.855 | | | | | | | | | |

Tools used:-

1. SQL.

Accessing Data With SQL

Input

SCHEMA city_data city_list global_data

1 select year ,avg_temp from global_data where year>=1870

Success!

EVALUATE

Output 146 results Download CSV

| year | avg_temp |
|------|----------|
| 1870 | 8.20 |
| 1871 | 8.12 |
| 1872 | 8.19 |

Accessing Data With SQL

Input

HISTORY MENU

results(3)

Ready