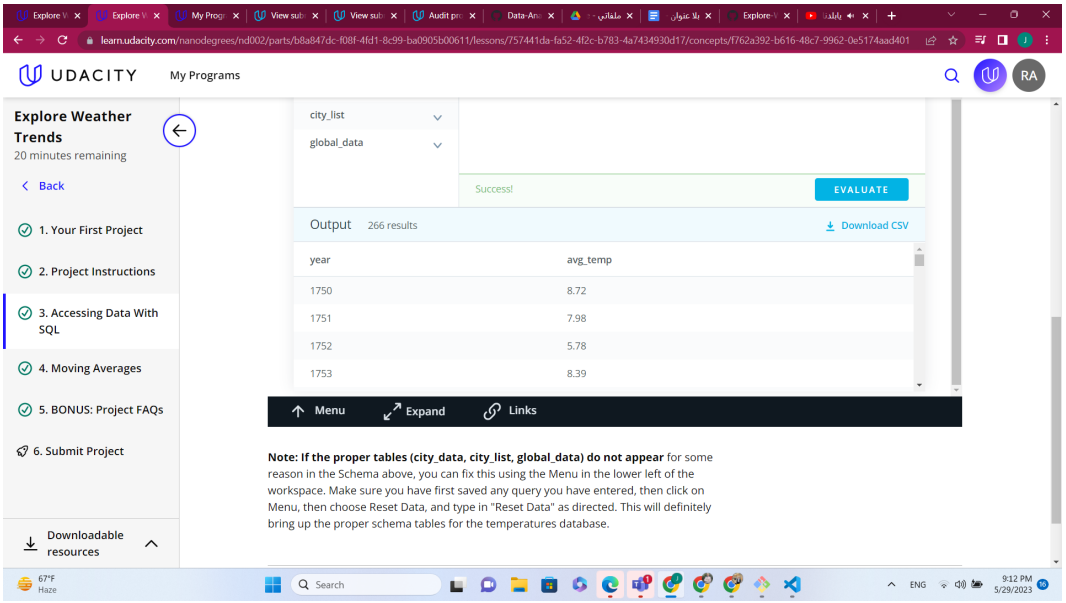
Date:29-05-2023

Write by:Roaa Abu-shaqrah

1. First Step: extract data from a database using SQL (dataset use select)

- For Global data :
- I want to get all data from all columns:

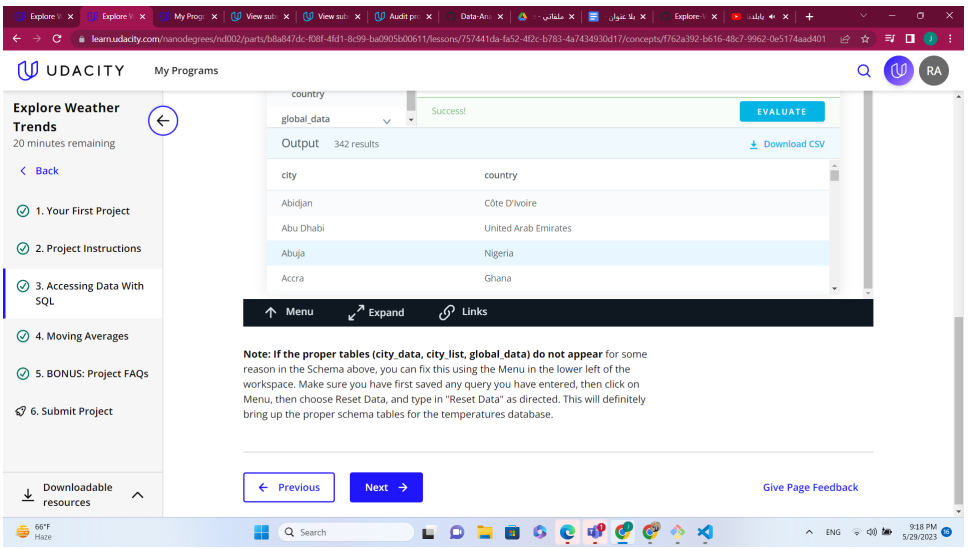
1. SElECT * FROM global_data
2. This image display the data



- For City list :
- I want to get all data from all columns:

1.SElECT * FROM city_list

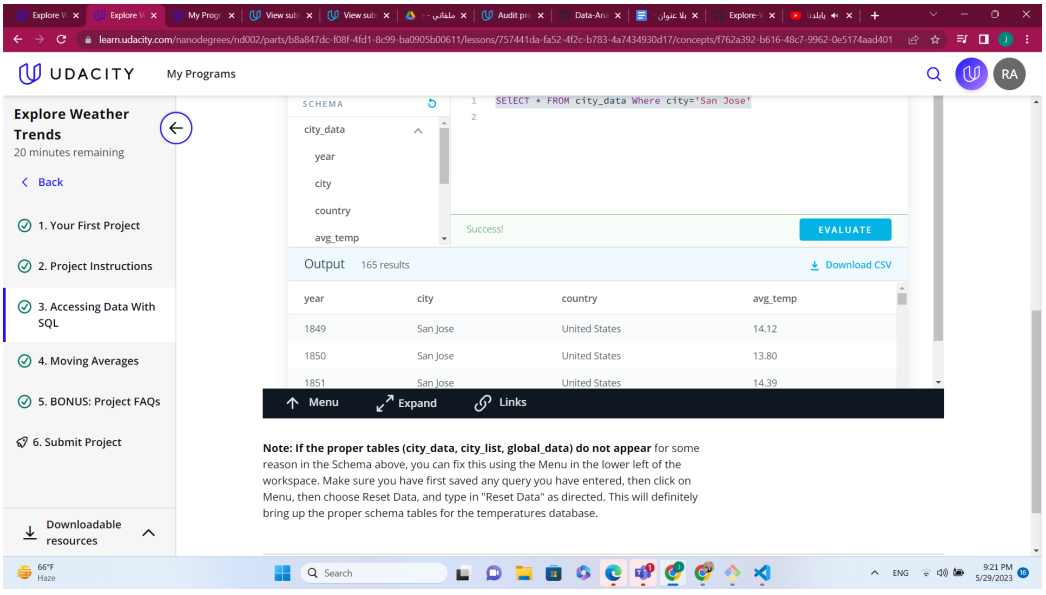
2. This image display the data



- For Citydata :
- I want to get all data from all columns:

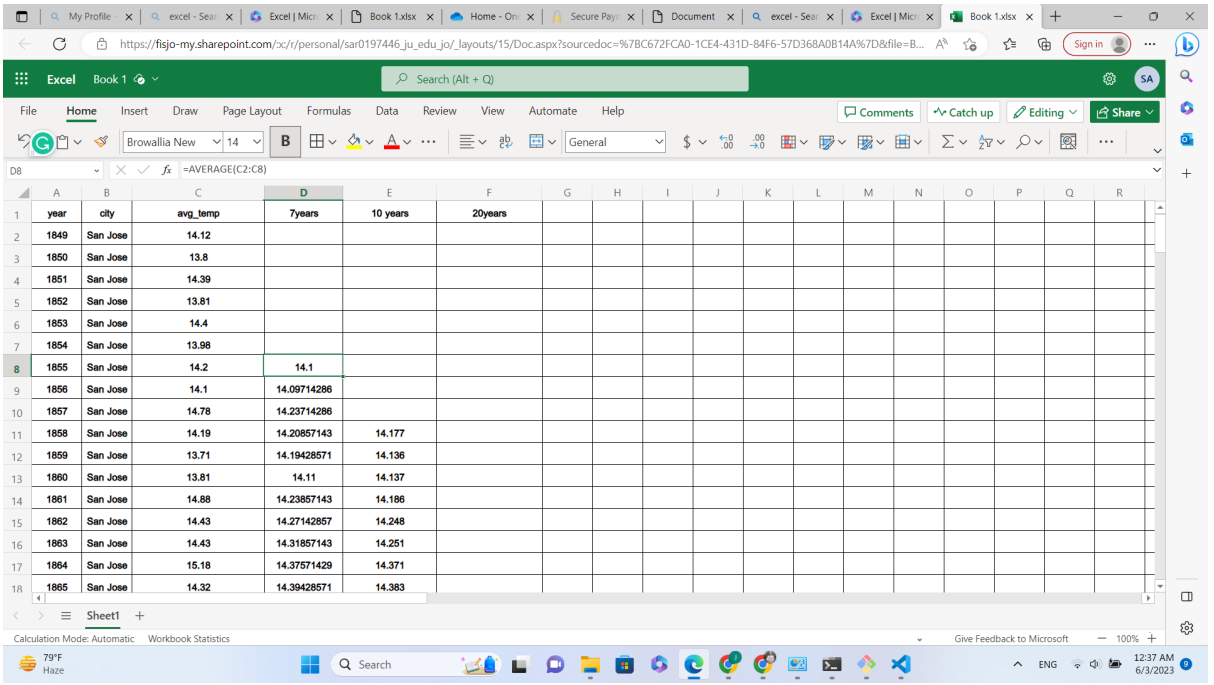
  1.SElECT * FROM city_data Where city='San Jose'

  2. This image display the data

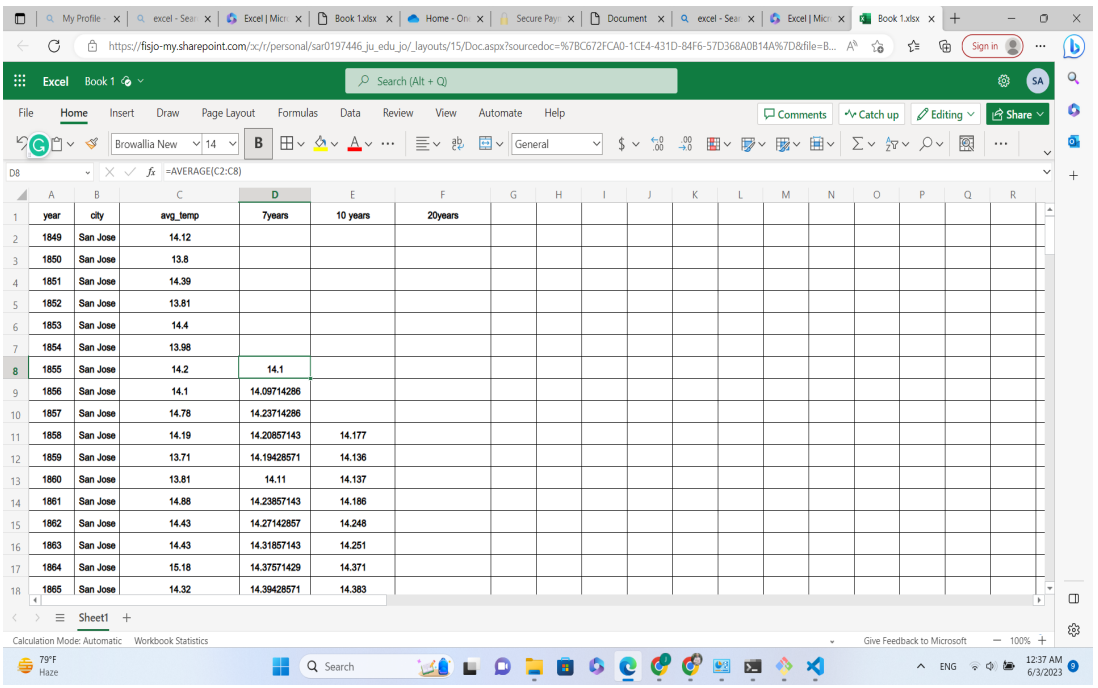


Moving Averages:

- I have used **Average function .**
- **I tried moving average 7,10,20 years**

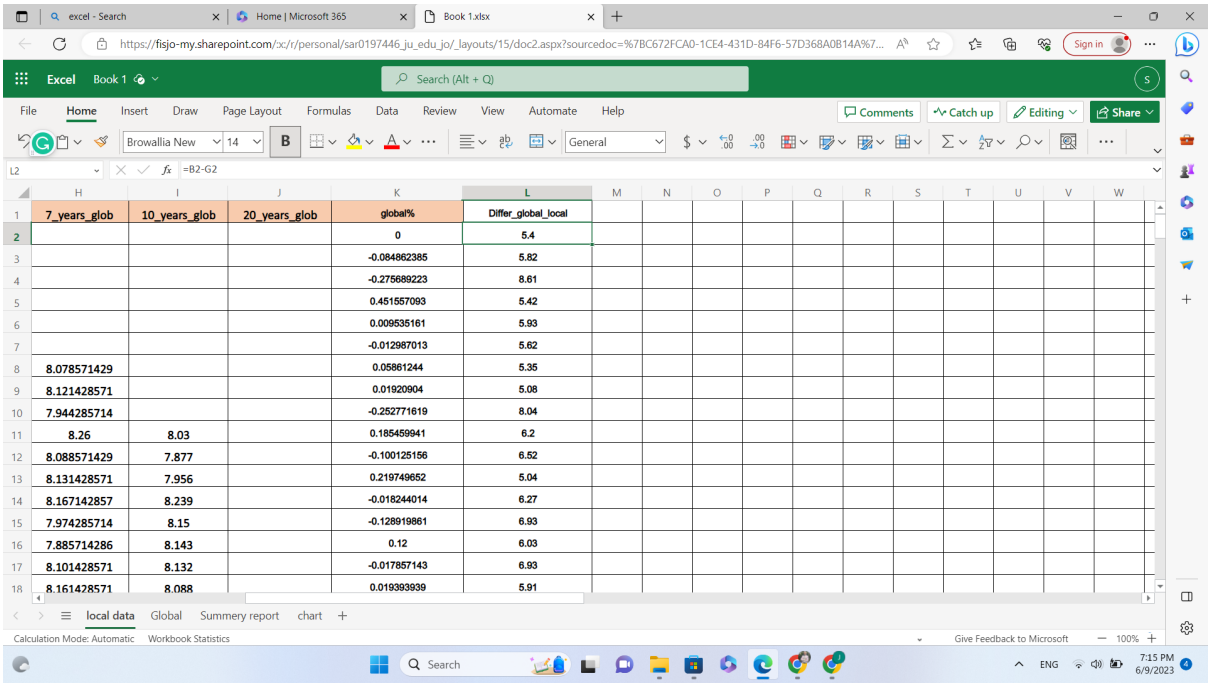


year	city	avg_temp	7years	10 years	20years
1849	San Jose	14.12			
1850	San Jose	13.8			
1851	San Jose	14.39			
1852	San Jose	13.81			
1853	San Jose	14.4			
1854	San Jose	13.98			
1855	San Jose	14.2	14.1		
1856	San Jose	14.1	14.09714286		
1857	San Jose	14.78	14.23714286		
1858	San Jose	14.19	14.20857143	14.177	
1859	San Jose	13.71	14.19428571	14.136	
1860	San Jose	13.81	14.11	14.137	
1861	San Jose	14.88	14.23857143	14.186	
1862	San Jose	14.43	14.27142857	14.248	
1863	San Jose	14.43	14.31857143	14.251	
1864	San Jose	15.18	14.37571429	14.371	
1865	San Jose	14.32	14.39428571	14.383	



year	city	avg_temp	7years	10 years	20years
1849	San Jose	14.12			
1850	San Jose	13.8			
1851	San Jose	14.39			
1852	San Jose	13.81			
1853	San Jose	14.4			
1854	San Jose	13.98			
1855	San Jose	14.2	14.1		
1856	San Jose	14.1	14.09714286		
1857	San Jose	14.78	14.23714286		
1858	San Jose	14.19	14.20857143	14.177	
1859	San Jose	13.71	14.19428571	14.136	
1860	San Jose	13.81	14.11	14.137	
1861	San Jose	14.88	14.23857143	14.186	
1862	San Jose	14.43	14.27142857	14.248	
1863	San Jose	14.43	14.31857143	14.251	
1864	San Jose	15.18	14.37571429	14.371	
1865	San Jose	14.32	14.39428571	14.383	

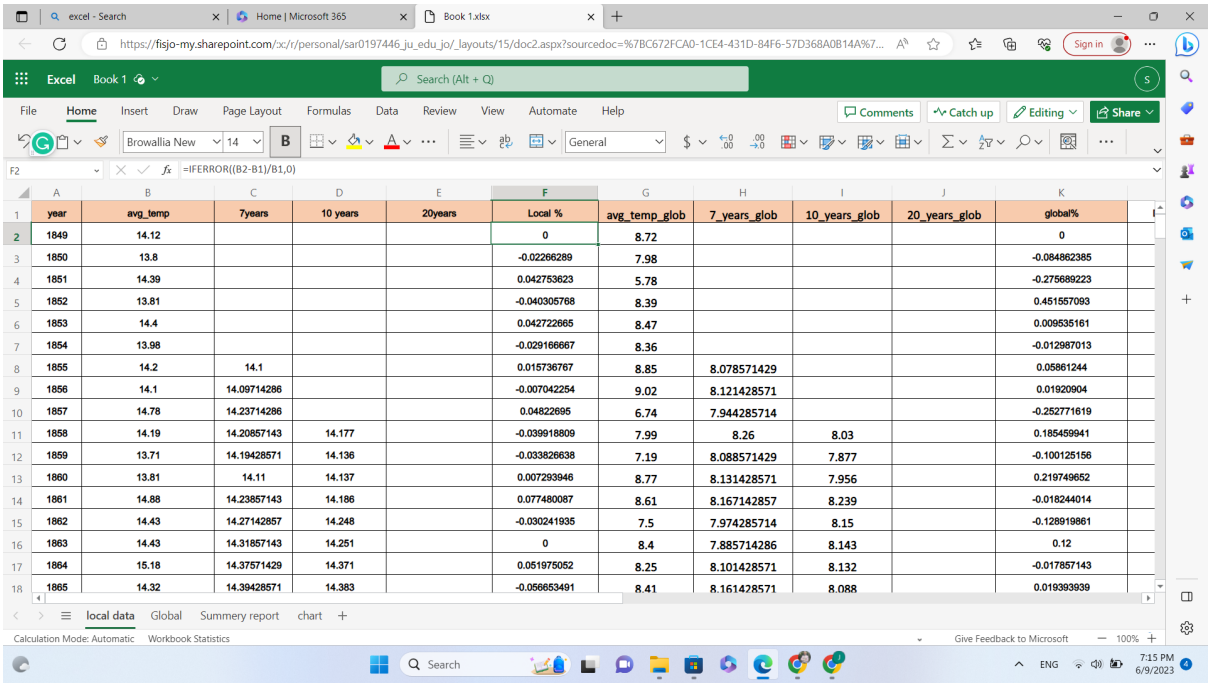
- Difference between Local and Global



7_years_glob	10_years_glob	20_years_glob	global%	Differ_global_local
			0	5.4
			-0.084862385	5.82
			-0.275689223	8.61
			0.451557093	5.42
			0.009535161	5.93
			-0.012987013	5.62
8.078571429			0.05861244	5.35
8.121428571			0.01920904	5.08
7.944285714			-0.252771619	8.04
8.26	8.03		0.185459941	6.2
8.088571429	7.877		-0.100125156	6.52
8.131428571	7.956		0.219749652	5.04
8.167142857	8.239		-0.018244014	6.27
7.974285714	8.15		-0.128919861	6.93
7.885714286	8.143		0.12	6.03
8.101428571	8.132		-0.017857143	6.93
8.161428571	8.088		0.019393939	5.91

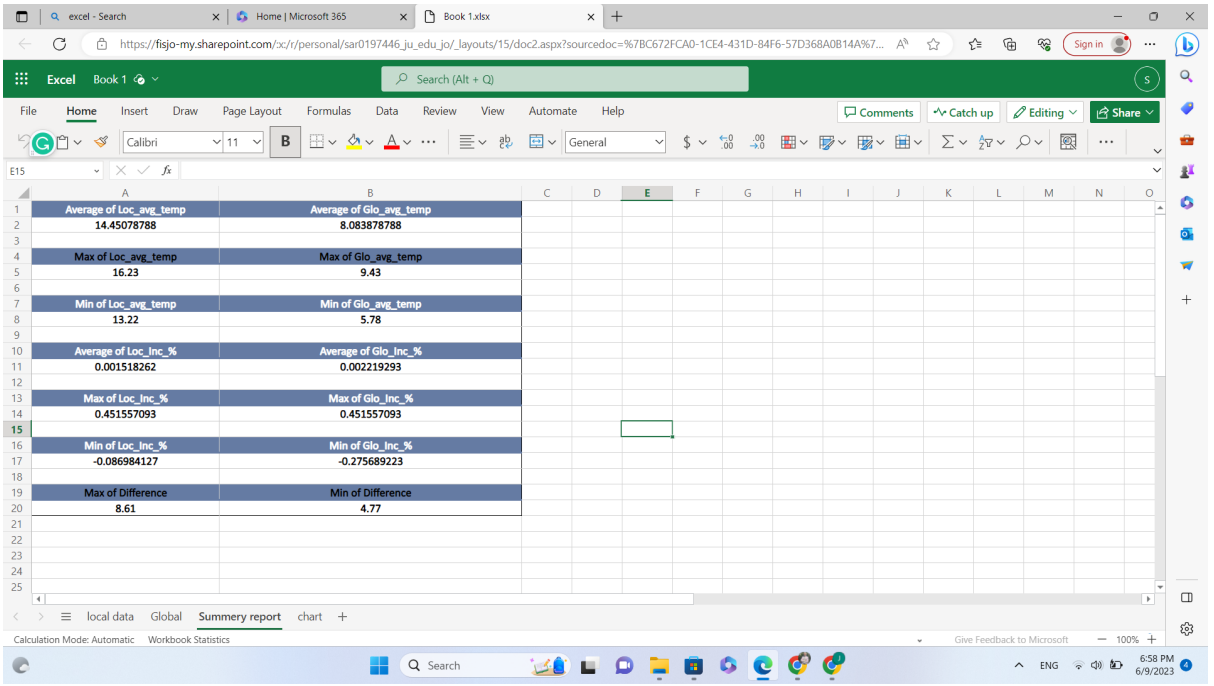
The key consideration was to determine the timeframe for data visualization. Looking at the local temperature data for san jose , the data covers the period between 1849 to 2013, where in the global temperature data covers the period between 1750 to 2015. we have to calculate the following:
- The Local and Global annual change percentage.
- The difference between Local and Global average temperatur

- Annual local and global (%)



year	avg_temp	7years	10 years	20years	Local %	avg_temp_glob	7_years_glob	10_years_glob	20_years_glob	global%
1849	14.12				0	8.72				0
1850	13.8				-0.02266289	7.98				-0.084862385
1851	14.39				0.042753623	5.78				-0.275689223
1852	13.81				-0.040305768	8.39				0.451557093
1853	14.4				0.042722665	8.47				0.009535161
1854	13.98				-0.029166667	8.36				-0.012987013
1855	14.2	14.1			0.015736767	8.85	8.078571429			0.05861244
1856	14.1	14.09714286			-0.007042254	9.02	8.121428571			0.01920904
1857	14.78	14.23714286			0.04822695	6.74	7.944285714			-0.252771619
1858	14.19	14.20857143	14.177		-0.039918809	7.99	8.26	8.03		0.185459941
1859	13.71	14.19428571	14.136		-0.033826638	7.19	8.088571429	7.877		-0.100125156
1860	13.81	14.11	14.137		0.007293946	8.77	8.131428571	7.956		0.219749652
1861	14.88	14.23857143	14.186		0.077480087	8.61	8.167142857	8.239		-0.018244014
1862	14.43	14.27142857	14.248		-0.030241935	7.5	7.974285714	8.15		-0.128919861
1863	14.43	14.31857143	14.251		0	8.4	7.885714286	8.143		0.12
1864	15.18	14.37571429	14.371		0.051975052	8.25	8.101428571	8.132		-0.017857143
1865	14.32	14.39428571	14.383		-0.056653491	8.41	8.161428571	8.088		0.019393939

- Calculate Max ,MIN,Average ..etc



Average of Loc_avg_temp	Average of Glo_avg_temp
14.45078788	8.083878788
Max of Loc_avg_temp	**Max of Glo_avg_temp**
16.23	9.43
Min of Loc_avg_temp	**Min of Glo_avg_temp**
13.22	5.78
Average of Loc_Inc_%	**Average of Glo_Inc_%**
0.001518262	0.002219293
Max of Loc_Inc_%	**Max of Glo_Inc_%**
0.451557093	0.451557093
Min of Loc_Inc_%	**Min of Glo_Inc_%**
-0.086984127	-0.275689223
Max of Difference	**Min of Difference**
8.61	4.77

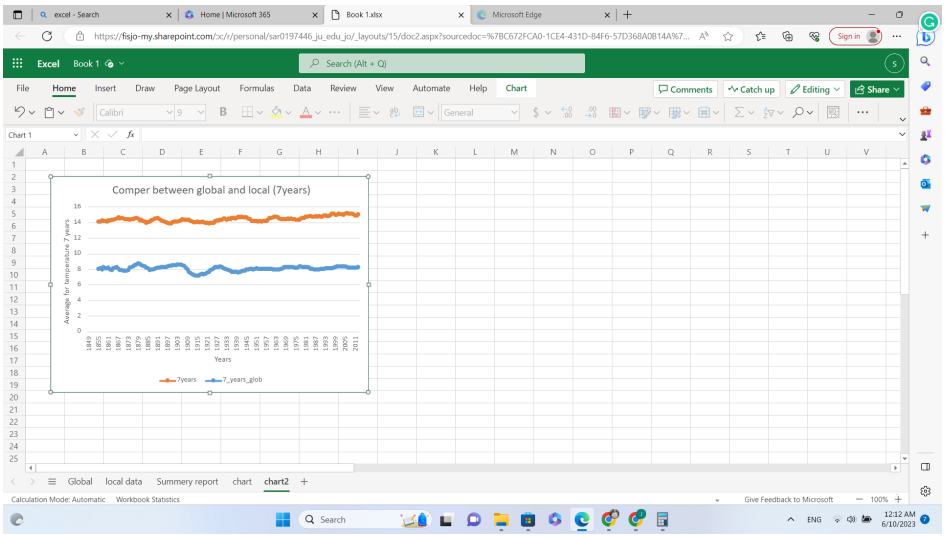
❖ Observation:

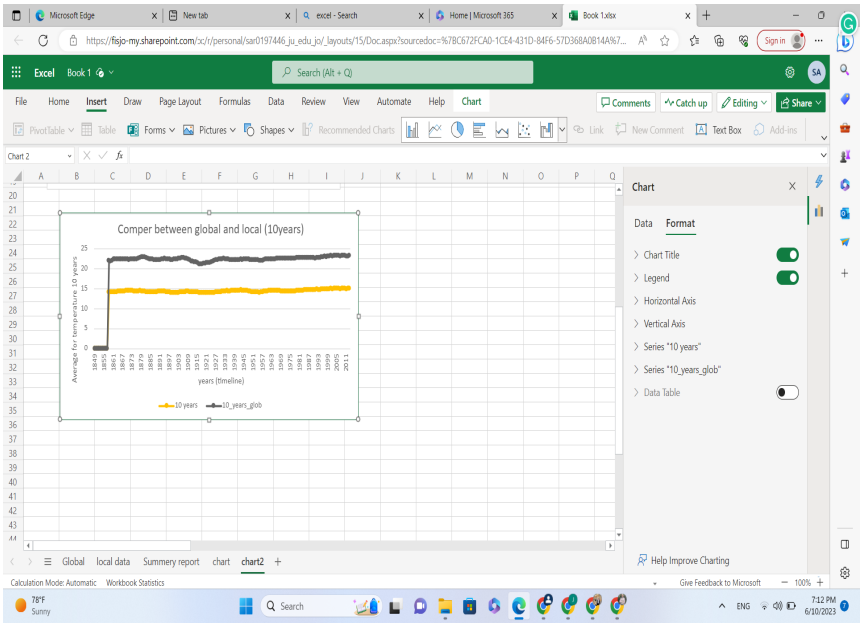
	Min	Max	Average	Highest inc(%)	Low Dec(%)	Avg Change
San jose	13.22	16.23	14.45078788	0.451557093	-0.086984127	0.001518262

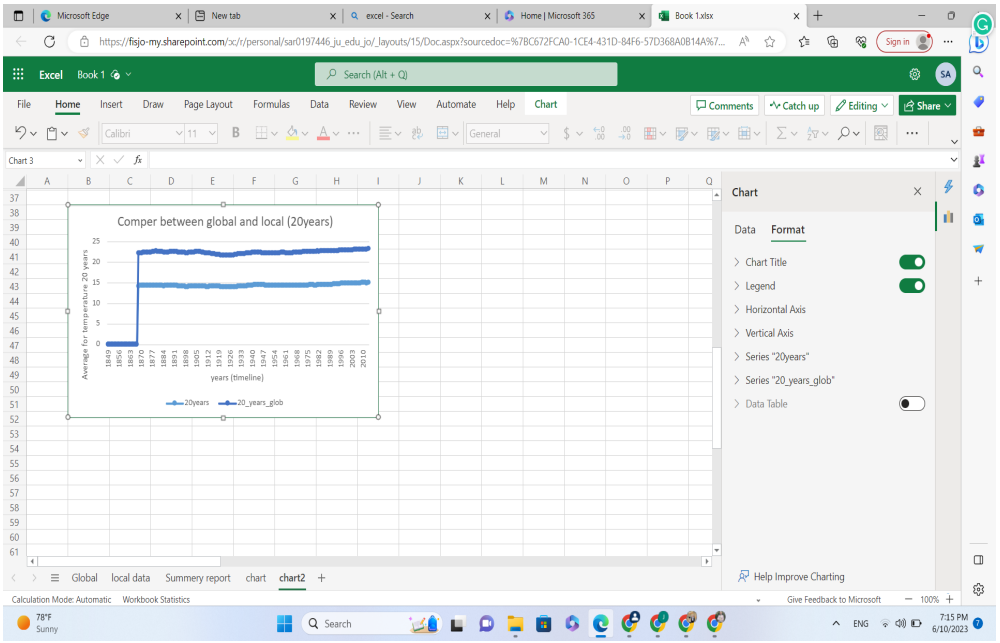
Global	5.78	9.43	8.083878788	0.451557093	-0.275689223	0.002219293

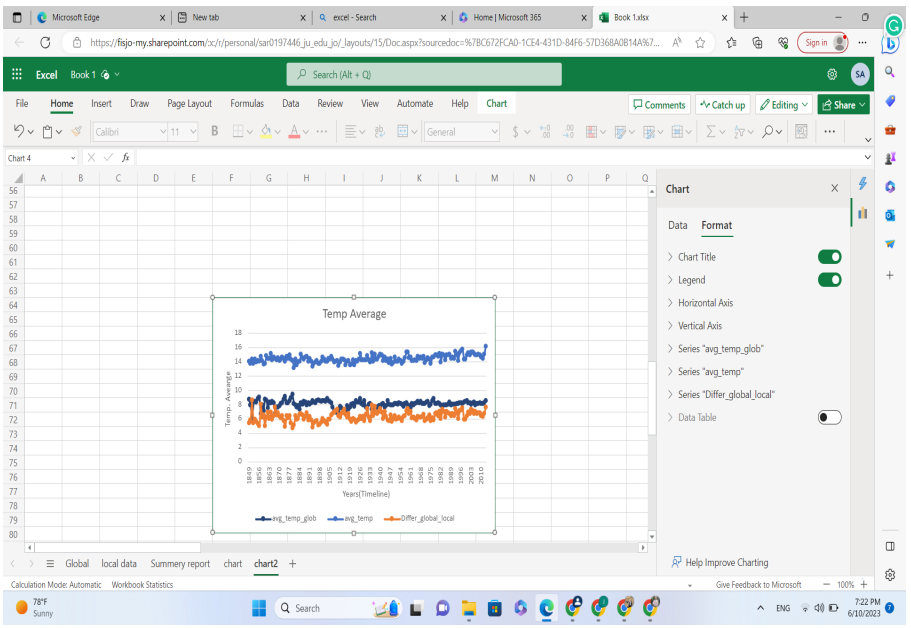
Highest difference	Lowest Difference
8.61	4.77

1. The local on (san jose) is hotter than global (refer max min and average).
2. The Highest difference between local and global Temperature 8.61
3. The lowest difference between local and global Temperature 4.77




Comper between global and local (10years)
Average for temperature 10 years
years (timeline)
10 years
10_years_glob
Chart
Data
Format
Chart Title
Legend
Horizontal Axis
Vertical Axis
Series "10 years"
Series "10_years_glob"
Data Table
Help Improve Charting
Global
local data
Summery report
chart
chart2


Comper between global and local (20years)
Average for temperature 20 years
years (timeline)
20years
20_years_glob
Chart
Data
Format
Chart Title
Legend
Horizontal Axis
Vertical Axis
Series "20years"
Series "20_years_glob"
Data Table
Help Improve Charting
Global
local data
Summery report
chart
chart2


Temp Average
Temp. Average
Years(Timeline)
avg_temp_glob
avg_temp
Differ_global_local
Chart
Data
Format
Chart Title
Legend
Horizontal Axis
Vertical Axis
Series "avg_temp_glob"
Series "avg_temp"
Series "Differ_global_local"
Data Table
Help Improve Charting
Global
local data
Summery report
chart
chart2