

The background is a light blue gradient. It is decorated with several realistic water droplets of various sizes. Some droplets are at the top left, some at the bottom right, and a few are scattered in the center. Each droplet has a highlight and a shadow, giving it a 3D appearance.

EXPLORING WEATHER TRENDS

DETROIT VS GLOBAL TEMPERATURES

PROJECT OUTLINE

- PULL GLOBAL & DETROIT WEATHER DATA USING SQL QUERY AND IMPORT TO EXCEL
- CALCULATED 5-YR, 7-YR, 10-YR MOVING AVERAGES (MA)
 - GRAPHED EACH & DECIDED 10-YR WAS THE BEST TO USE – SMOOTHED ENOUGH BUT STILL PROVIDES GOOD INFORMATION
- CREATED LINE CHART OF GLOBAL & DETROIT 10-YR MA TEMPERATURES
 - INCLUDED A TREND LINE FOR BOTH GLOBAL & DETROIT TEMPERATURES
- CALCULATED DIFFERENCES IN GLOBAL AND DETROIT 10-YR MA TEMPERATURES
- CREATED COLUMN CHART WITH DIFFERENCE IN GLOBAL AND DETROIT TEMPS
- MADE OBSERVATIONS

SQL QUERY TO PULL DATA

- QUERY FOR DETERMINING CITY CLOSEST TO ME

```
SELECT CITY  
FROM CITY_LIST  
WHERE COUNTRY='UNITED STATES'
```

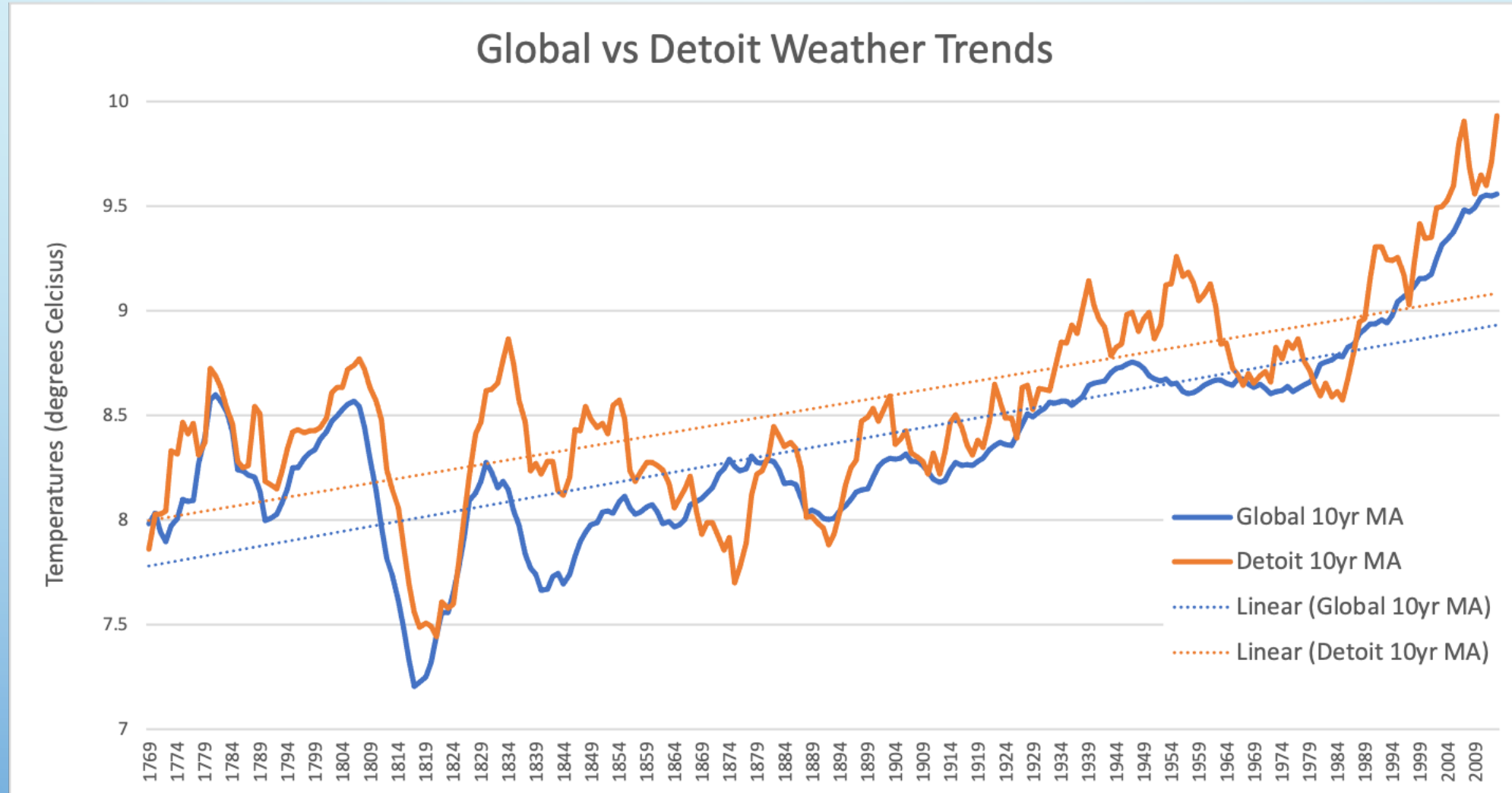
- QUERY FOR PULLING DETROIT WEATHER DATA

```
SELECT * FROM CITY_DATA  
WHERE CITY = 'DETROIT'
```

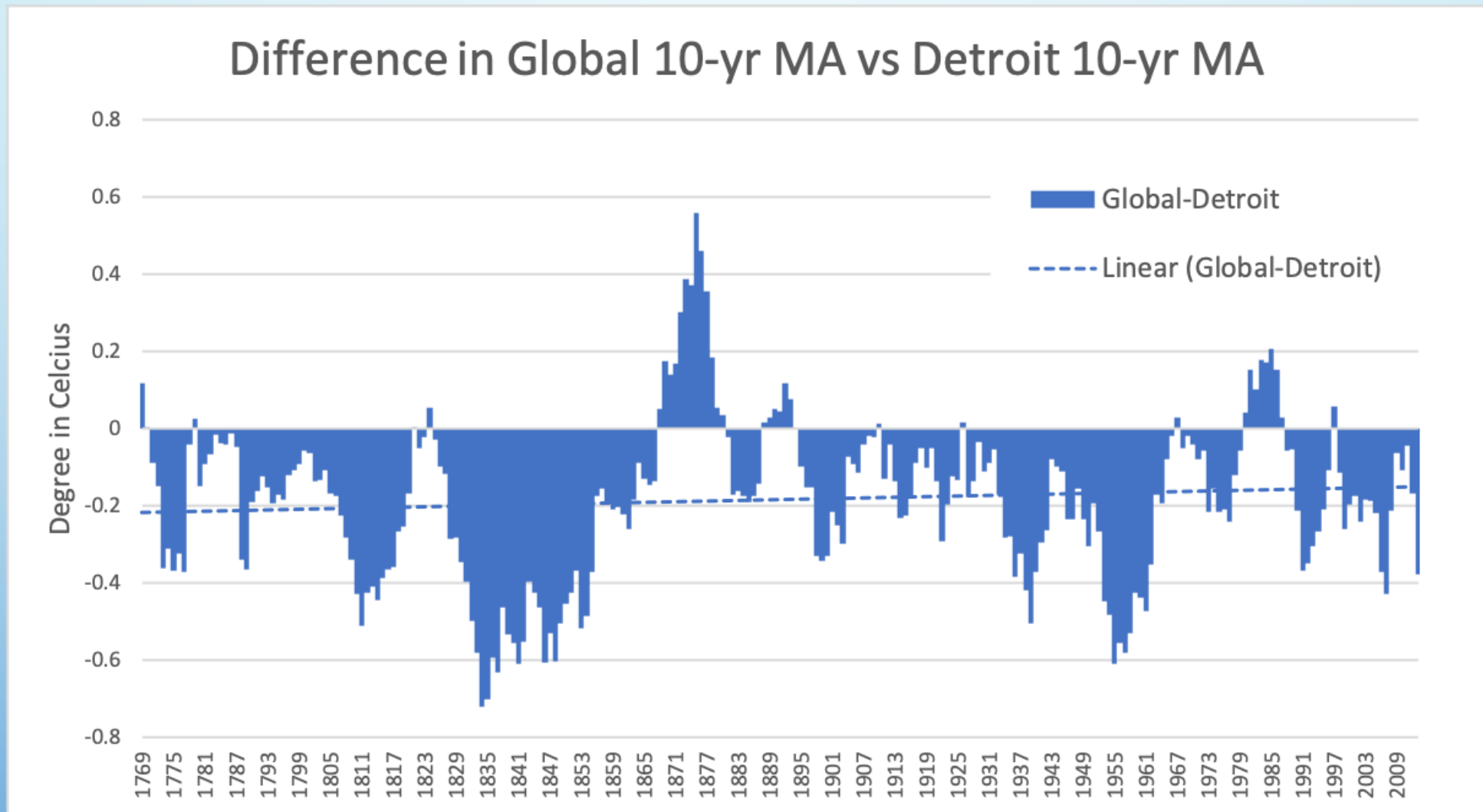
- QUERY FOR PULLING GLOBAL DATA

```
SELECT * FROM GLOBAL_DATA
```

DATA VISUALIZATION: MOVING AVERAGE



DATA VISUALIZATION: GLOBAL – DETROIT TEMPS



OBSERVATIONS

IS YOUR CITY HOTTER OR COOLER ON AVERAGE COMPARED TO THE GLOBAL AVERAGE? HAS THE DIFFERENCE BEEN CONSISTENT OVER TIME?

- OVERALL, DETROIT AVG TEMPS ARE VERY CLOSE TO GLOBAL AVG TEMPS.
- SINCE 1769, DETROIT TEMPS HAVE BEEN WITHIN 1 DEGREE CELSIUS OF GLOBAL TEMPS
- DETROIT IS GENERALLY ~ 0.2 DEGREE CELSIUS COLDER THAN GLOBAL TEMPERATURES

OBSERVATIONS

HOW DO THE CHANGES IN YOUR CITY'S TEMPERATURES OVER TIME COMPARE TO THE CHANGES IN THE GLOBAL AVERAGE?

- DETROIT TEMPS SEEM TO BE FOLLOWING SUIT WITH THE CHANGES IN GLOBAL TEMPS.
- THE TEMPERATURES IN DETROIT ARE CHANGING ALONG WITH THE GLOBAL TEMPERATURES. IF YOU LOOK AT THE “MOVING AVERAGE” CHART, THE LINEAR REGRESSION FOR DETROIT TEMPERATURES IS ROUGHLY PARALLEL TO THE GLOBAL TEMPERATURES.

OBSERVATIONS

WHAT DOES THE OVERALL TREND LOOK LIKE? IS THE WORLD GETTING HOTTER OR COOLER?
HAS THE TREND BEEN CONSISTENT OVER THE LAST FEW HUNDRED YEARS?

- TEMPERATURES SEEM TO BE SLIGHTLY INCREASING OVERTIME BOTH LOCALLY & GLOBALLY
 - ~ 1 DEGREE CELSIUS FROM 1769 – 2013
- IT IS HARD TO SAY LONGITUDINALLY SINCE WE ONLY HAVE DATA DATING BACK TO 1769, AND 244 YEARS OF DATA ISN'T ENOUGH TO RELY ON WHEN WE CONSIDER HOW OLD THE EARTH IS.