**SQL CODE**

--Selected the needed columns of data and grouped them by the state code, metropolitan division and the date (period ending). I also extracted the year from the date field.

WITH housing\_metros as

(

SELECT

  period\_end,

  state\_code,

  parent\_metro\_region,

  SUM(median\_sale\_price) as sale\_price, SUM(median\_list\_price) as list\_price, SUM(homes\_sold) as houses\_sold, SUM(pending\_sales) as sales, SUM(new\_listings) as new\_listing, SUM(off\_market\_in\_two\_weeks) as off\_market\_two\_weeks

FROM `Housing.Housing\_USA`

GROUP BY parent\_metro\_region, period\_end, state\_code

)

SELECT

  EXTRACT(YEAR FROM period\_end) as Year,

  state\_code,

  parent\_metro\_region,

  sale\_price,

  list\_price,

  houses\_sold,

  sales,

  off\_market\_two\_weeks

FROM Housing\_metros

--Now, I selected only records for 2019, 2021 and 2022 separately.

SELECT  \*

FROM `dark-influence-360701.Housing.housing\_metros`

WHERE

  Year = 2019

SELECT  \*

FROM `dark-influence-360701.Housing.housing\_metros`

WHERE

  Year = 2021

SELECT  \*

FROM `dark-influence-360701.Housing.housing\_metros`

WHERE

  Year = 2022

--Having the separate years, I then aggregated the records again based on the metropolitan areas, and the states.

SELECT Year, state\_code, parent\_metro\_region,

  SUM(sale\_price) as sales\_price,

  SUM(list\_price) as list\_prices,

  SUM(houses\_sold) as home\_sold,

  SUM(sales) as total\_sales,

  SUM(off\_market\_two\_weeks) as off\_market\_in\_two\_weeks

FROM `Housing.Housing\_metro\_2019`

GROUP BY Year, state\_code, parent\_metro\_region

-------

--Selected data at the state level for 2019, (when covid was at its peak) and 2021, (when the housing market reached its peak) to analyze housing sales to gain a general perspective.

SELECT Year, state\_code,

  SUM(sale\_price) as sales\_price,

  SUM(list\_price) as list\_prices,

  SUM(houses\_sold) as home\_sold,

  SUM(sales) as total\_sales,

  SUM(off\_market\_two\_weeks) as off\_market\_in\_two\_weeks

FROM `Housing.Housing\_metro\_2019`

GROUP BY state\_code, Year

SELECT Year, state\_code,

  SUM(sale\_price) as sales\_price,

  SUM(list\_price) as list\_prices,

  SUM(houses\_sold) as home\_sold,

  SUM(sales) as total\_sales,

  SUM(off\_market\_two\_weeks) as off\_market\_in\_two\_weeks

FROM `Housing.Housing\_metro\_2021`

GROUP BY state\_code, Year

--I joined the state data 2019, just when covid-19 hit and 2021 when the housing market peaked and calculated the % change in sales between 2019 and 2021.

WITH sales\_change as (

SELECT \*

FROM

  `Housing.2019\_statelevel` as a

    INNER JOIN

    `Housing.2021\_statelevel`as b

    ON a.state\_code = b.state\_code

)

SELECT

  state\_code,

    (home\_sold\_1-home\_sold)/home\_sold\_1\*100 AS Perc\_change\_home\_sales

FROM

`Housing.Housing\_sales\_2019\_2021`

------------

--I SELECTED top 10 metropolitan areas for 2021 when housing sales peaked.

With housing\_2021\_grp as

(

SELECT  parent\_metro\_region,

  SUM(houses\_sold) as houses\_sold,

FROM `Housing.Housing\_metro\_2021`

GROUP BY parent\_metro\_region

)

SELECT

houses\_sold, parent\_metro\_region

 FROM `Housing.housing\_2021\_grp`

 WHERE parent\_metro\_region = 'Atlanta'

  OR  parent\_metro\_region = 'Chicago'

  OR parent\_metro\_region ='Houston'

  OR  parent\_metro\_region ='Washington'

  OR  parent\_metro\_region = 'Los Angeles'

  OR  parent\_metro\_region ='Denver'

  OR parent\_metro\_region ='Orlando'

  OR  parent\_metro\_region ='Boston'

  OR  parent\_metro\_region ='Charlotte'

  OR  parent\_metro\_region = 'New York'

--------------

--Extracting all the years and analyzing housing sale trends

WITH housing\_all as

(

SELECT

  period\_end,

  state\_code,

  parent\_metro\_region,

  SUM(homes\_sold) as houses\_sold

FROM `Housing.housing\_USA`

GROUP BY parent\_metro\_region, period\_end, state\_code

)

SELECT

  EXTRACT(YEAR FROM period\_end) as Year,

  state\_code,

  parent\_metro\_region,

  houses\_sold,

FROM Housing\_all

--Selecting the property type to analyze the housing preference among buyers and investors.

SELECT parent\_metro\_region, property\_type

 FROM `Housing.housing\_USA`