

--1--

```
SELECT * FROM state_climate  
LIMIT 5;
```

--2--Write a query that returns the state, year, tempf or tempc, and running_avg_temp (in either Celsius or Fahrenheit) for each state.

```
SELECT state, year, tempf,  
       AVG(tempf) OVER  
       (PARTITION BY state  
        ORDER BY year) AS running_avg_temp  
FROM state_climate  
LIMIT 5;
```

--3--Write a query that returns state, year, tempf or tempc, and the lowest temperature (lowest_temp) for each state.

```
SELECT state, year, tempf,  
       FIRST_VALUE(tempf) OVER (  
       PARTITION BY state  
       ORDER BY tempf  
       ) AS lowest_temp  
FROM state_climate  
LIMIT 5;
```

--4--write a query that returns state, year, tempf or tempc, except now we will also return the highest temperature (highest_temp) for each state.

```
SELECT state, year, tempf,  
       LAST_VALUE(tempf) OVER (  
       PARTITION BY state  
       ORDER BY tempf  
       RANGE BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING  
       ) AS highest_temp  
FROM state_climate  
LIMIT 5;
```

--5--Write a query to select the same columns but now you should write a window function that returns the change_in_temp from the previous year

```
SELECT state, year, tempf,  
       tempf - LAG(tempf, 1, tempf) OVER  
       (PARTITION BY state  
        ORDER BY year) AS change_in_temp  
FROM state_climate  
ORDER BY change_in_temp DESC  
LIMIT 5;
```

--6--Write a query to return a rank of the coldest temperatures on record

```
SELECT RANK() OVER (ORDER BY tempf ASC)  
AS coldest_rank,  
   year, state, tempf  
FROM state_climate  
LIMIT 10;
```

--7--Modify your coldest_rank query to now instead return the warmest_rank for each state

```
SELECT RANK() OVER(  
   PARTITION BY state
```

```

ORDER BY tempf DESC)
AS warmest_rank,
year, state, tempf
FROM state_climate
LIMIT 10;

```

--8--write a query that will return the average yearly temperatures in quartiles instead of in rankings for each state

```

SELECT NTILE(4) OVER(
PARTITION BY state
ORDER BY tempf ASC) AS quartile,
year, state, tempf
FROM state_climate
LIMIT 5;

```

--9--Lastly, we will write a query that will return the average yearly temperatures in quintiles (5). The top quintile should be the coldest years overall, not by state.

```

SELECT NTILE(5) OVER(
ORDER BY tempf ASC) AS quintile,
year, state, tempf
FROM state_climate
LIMIT 5;

```

state	year	tempf	tempc
Alabama	1895	61.64166667	16.46759259
Alabama	1896	64.26666667	17.92592593
Alabama	1897	64.19166667	17.88425926
Alabama	1898	62.98333333	17.21296296
Alabama	1899	63.1	17.27777778
state	year	tempf	running_avg_temp
Alabama	1895	61.64166667	61.64166667
Alabama	1896	64.26666667	62.95416667
Alabama	1897	64.19166667	63.36666667
Alabama	1898	62.98333333	63.27083333
Alabama	1899	63.1	63.23666668
state	year	tempf	lowest_temp
Alabama	1976	60.675	60.675
Alabama	1968	61.0	60.675
Alabama	1940	61.175	60.675
Alabama	1983	61.19166667	60.675

Alabama	1958	61.21666667	60.675
state	year	tempf	highest_temp
Alabama	1976	60.675	65.70833333
Alabama	1968	61.0	65.70833333
Alabama	1940	61.175	65.70833333
Alabama	1983	61.19166667	65.70833333
Alabama	1958	61.21666667	65.70833333
state	year	tempf	change_in_temp
North Dakota	1952	40.63333333	5.01666666
Minnesota	2015	43.49166667	4.85
Montana	1900	42.85	4.75
Michigan	1998	48.25	4.71666667
Wisconsin	1998	47.3	4.65833333
coldest_rank	year	state	tempf
1	1950	North Dakota	34.9
2	1951	North Dakota	35.61666667
3	1917	Minnesota	35.675
4	1916	North Dakota	35.73333333
5	1917	North Dakota	35.91666667
6	1899	North Dakota	36.25
7	1896	North Dakota	36.425
8	1950	Minnesota	36.45833333
9	1904	Maine	36.51666667
9	1996	North Dakota	36.51666667
warmest_rank	year	state	tempf
1	1921	Alabama	65.70833333
2	1927	Alabama	65.58333333
3	2019	Alabama	65.375
4	2016	Alabama	65.34166667
5	1911	Alabama	65.325
6	1922	Alabama	65.16666667
7	1998	Alabama	65.125

8	1933	Alabama	65.1
9	2017	Alabama	65.03333333
10	1925	Alabama	64.95833333
quartile	year	state	tempf
1	1976	Alabama	60.675
1	1968	Alabama	61.0
1	1940	Alabama	61.175
1	1983	Alabama	61.19166667
1	1958	Alabama	61.21666667
quintile	year	state	tempf
1	1950	North Dakota	34.9
1	1951	North Dakota	35.61666667
1	1917	Minnesota	35.675
1	1916	North Dakota	35.73333333
1	1917	North Dakota	35.91666667