AMRIT DHURUA

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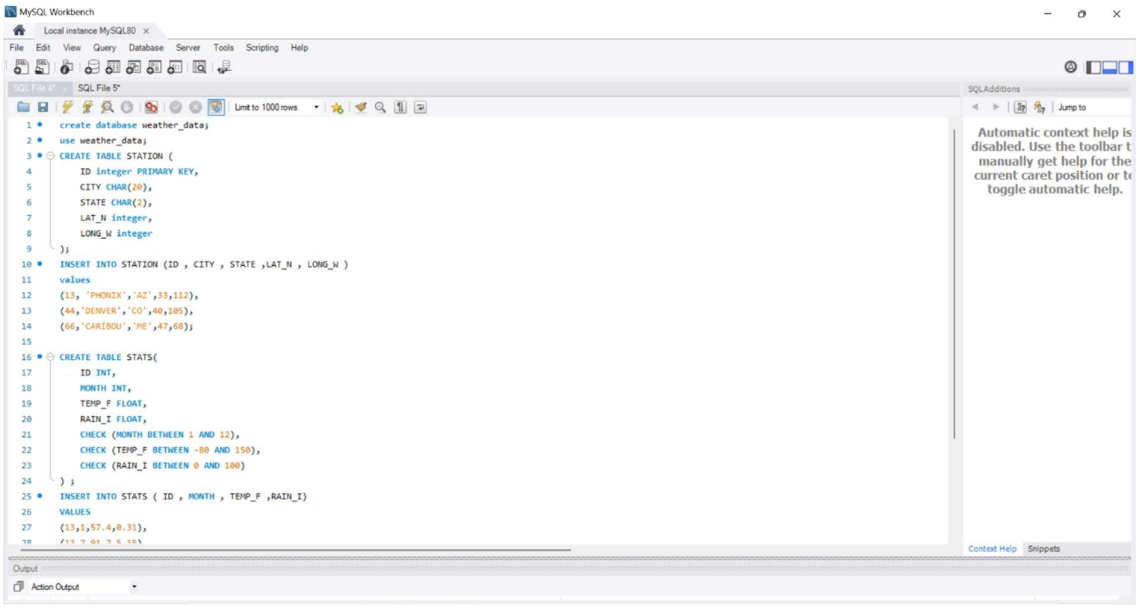
Business Analyst Career Program (ChatGPT Included)

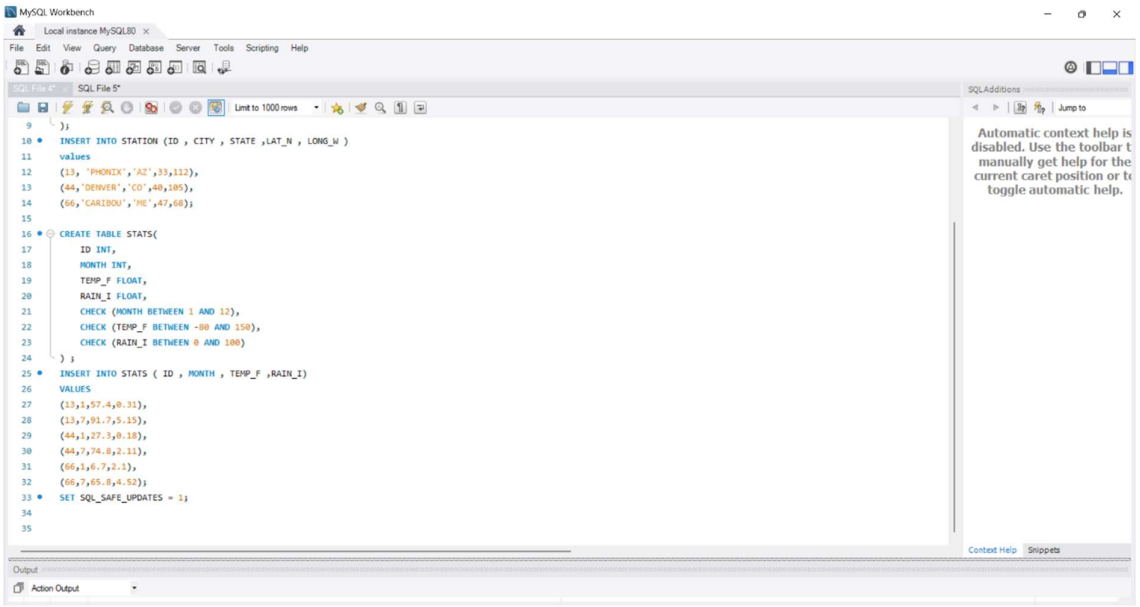
Assignment-SQL[Major]

SQL queries which I have created for this Assignment Screen Shot.



```
create database weather_data;
use weather_data;
CREATE TABLE STATION (
    ID integer PRIMARY KEY,
    CITY CHAR(20),
    STATE CHAR(2),
    LAT_N integer,
    LONG_W integer
);
INSERT INTO STATION (ID , CITY , STATE ,LAT_N , LONG_W )
values
(13, 'PHONIX','AZ',33,112),
(44,'DENVER','CO',40,105),
(66,'CARIBOU','ME',47,68);

CREATE TABLE STATS(
    ID INT,
    MONTH INT,
    TEMP_F FLOAT,
    RAIN_I FLOAT,
    CHECK (MONTH BETWEEN 1 AND 12),
    CHECK (TEMP_F BETWEEN -80 AND 150),
    CHECK (RAIN_I BETWEEN 0 AND 100)
) ;
INSERT INTO STATS ( ID , MONTH , TEMP_F ,RAIN_I)
VALUES
(13,1,57.4,0.31),
```



```
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INSERT INTO STATION (ID , CITY , STATE ,LAT_N , LONG_W )
values
(13, 'PHONIX','AZ',33,112),
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    RAIN_I FLOAT,
    CHECK (MONTH BETWEEN 1 AND 12),
    CHECK (TEMP_F BETWEEN -80 AND 150),
    CHECK (RAIN_I BETWEEN 0 AND 100)
) ;
INSERT INTO STATS ( ID , MONTH , TEMP_F ,RAIN_I)
VALUES
(13,1,57.4,0.31),
(13,7,91.7,5.15),
(44,1,27.3,0.18),
(44,7,74.8,2.11),
(66,1,6.7,2.1),
(66,7,65.8,4.52);
SET SQL_SAFE_UPDATES = 1;
```
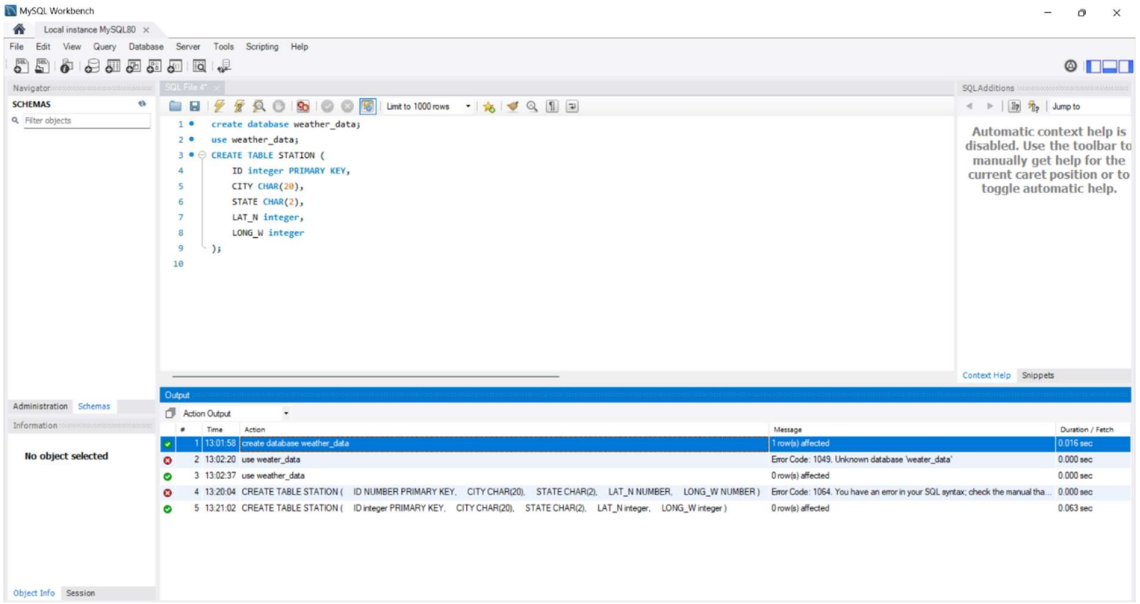
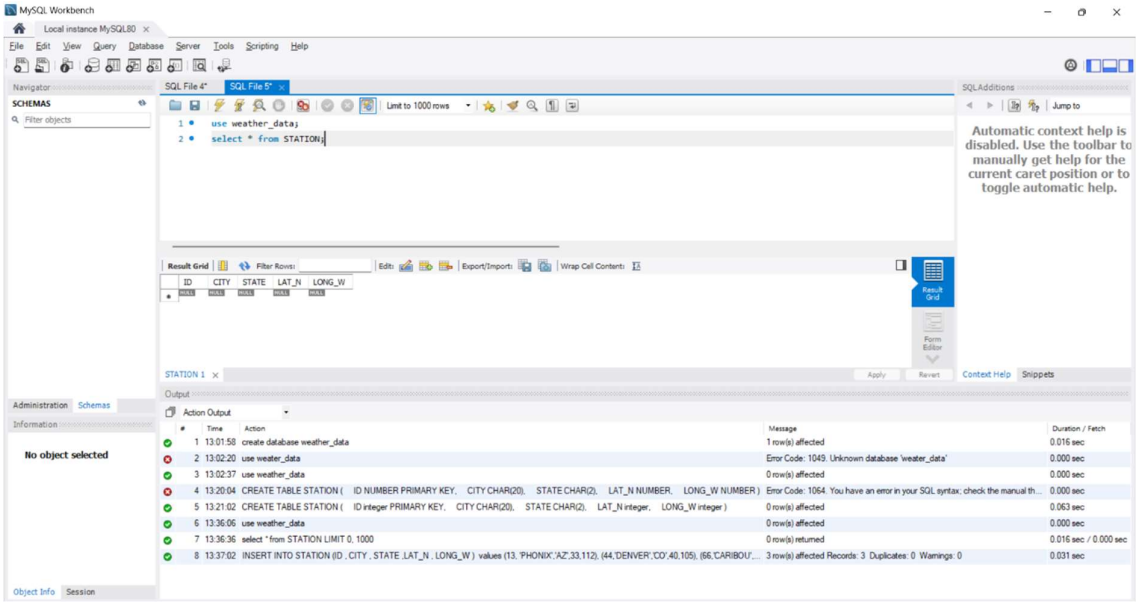

Q1) Create a table "**STATION** " to store information about weather observation stations:

ID	Number	Primary key
CITY	CHAR(20)	
STATE	CHAR(2)	
LAT_N	Number	
LONG_W	Number	

Answer 1.





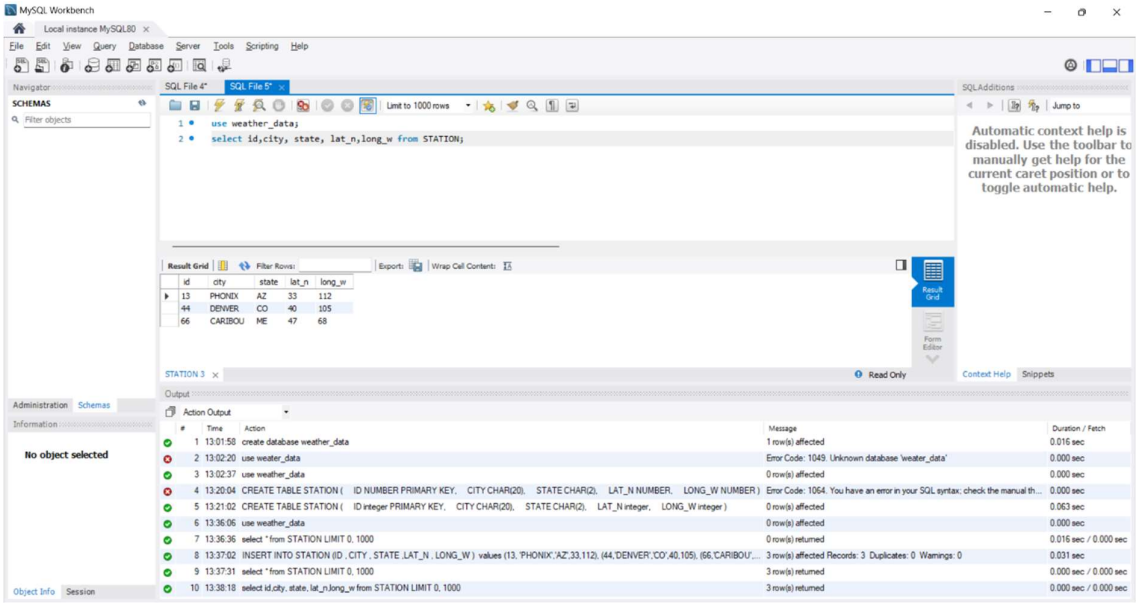
Explanation: We have used **INTEGER** for ID as primary key, LAT_N and LONG_W.

For CITY and STATE **CHAR** as a data type.

Q2) Insert the following records into the table:

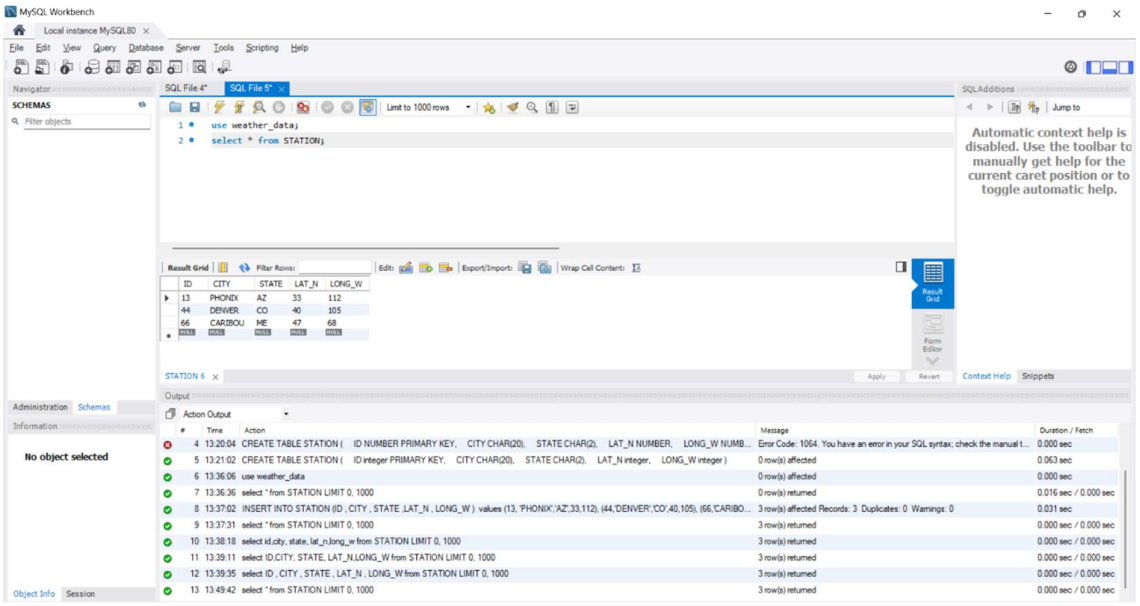
ID	CITY	STATE	LAT_N	LONG_W
13	PHOENIX	AZ	33	112
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68

Answer 2. We can get the output using :- SELECT * FROM STATION;



Q3) Execute a query to look at table **STATION** in undefined order.

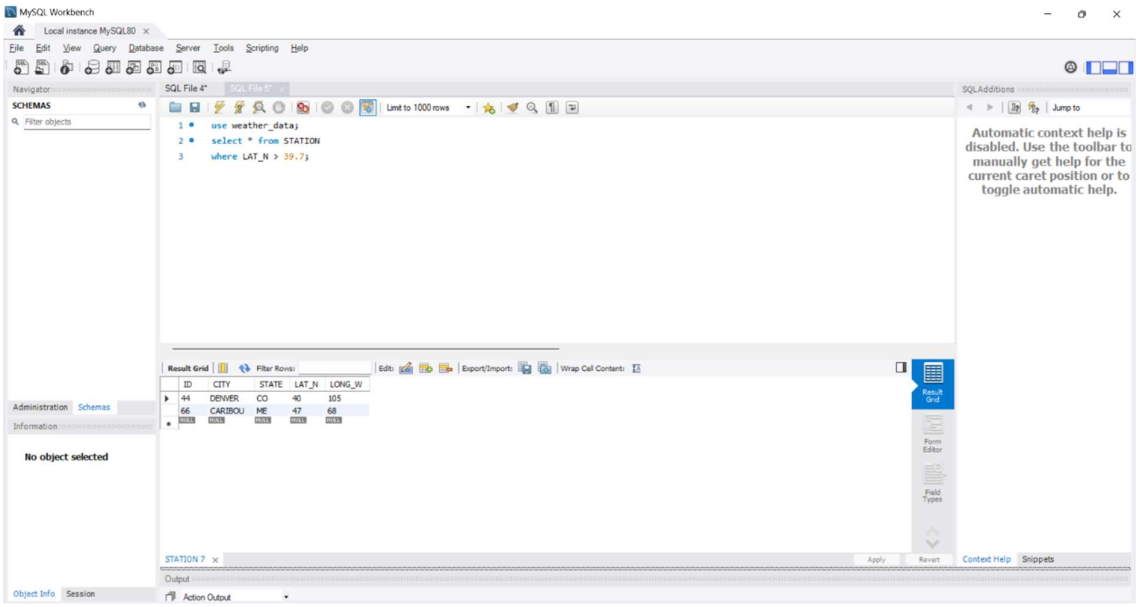
Answer 3. (SELECT * FROM STATION;) We will get the same result as above table with null values.



Q4) Execute a query to select Northern stations (**Northern latitude > 39.7**).

Answer 4. We have use the this query

```
SELECT * FROM STATION

WHERE LAT_N > 39.7;
```



Q5) Create another table, **'STATS'**, to store normalized temperature and precipitation data:

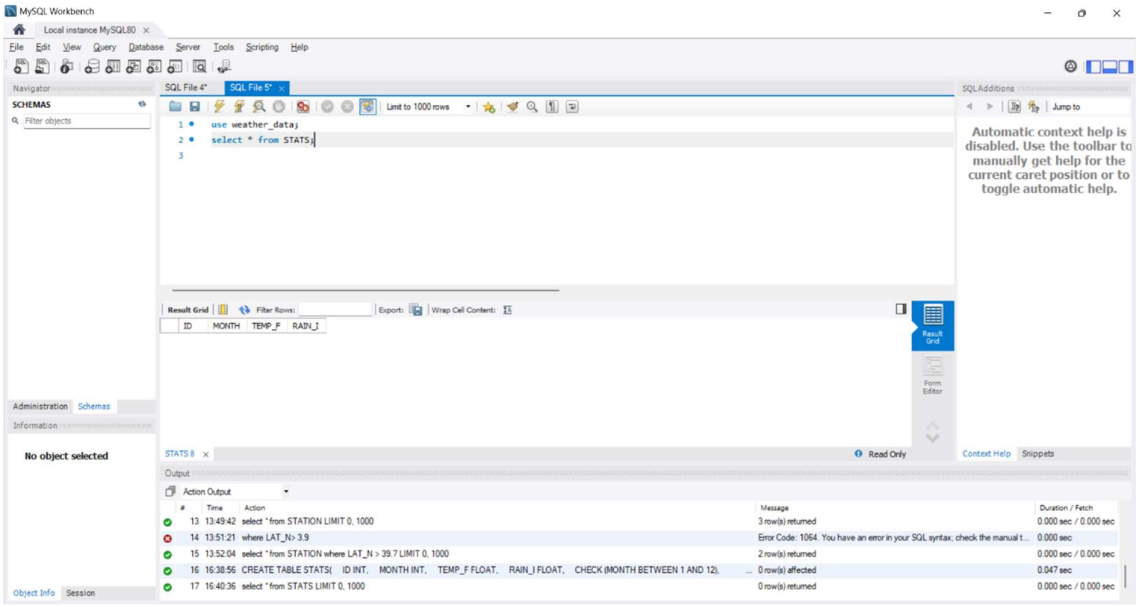
Column	Data type	Remark
ID	Number	**ID** must match with some **ID** from the **STATION** table(so name & location will be known).
MONTH	Number	The range of months is between (**1 and 12**)
TEMP_F	Number	Temperature is in Fahrenheit degrees, Ranging between (**-80 and 150**)
RAIN_I	Number	Rain is in inches, Ranging between (**0 and 100**)

There will be no Duplicate **ID** and **MONTH** combination.

Answer 5. Here we have to create another table

Queries used are - CREATE TABLE STATS(

```
  ID INT,
  MONTH INT,
  TEMP_F FLOAT,
  RAIN_I FLOAT,
  CHECK (MONTH BETWEEN 1 AND 12),
  CHECK (TEMP_F BETWEEN -80 AND 150),
  CHECK (RAIN_I BETWEEN 0 AND 100)
) ;
```

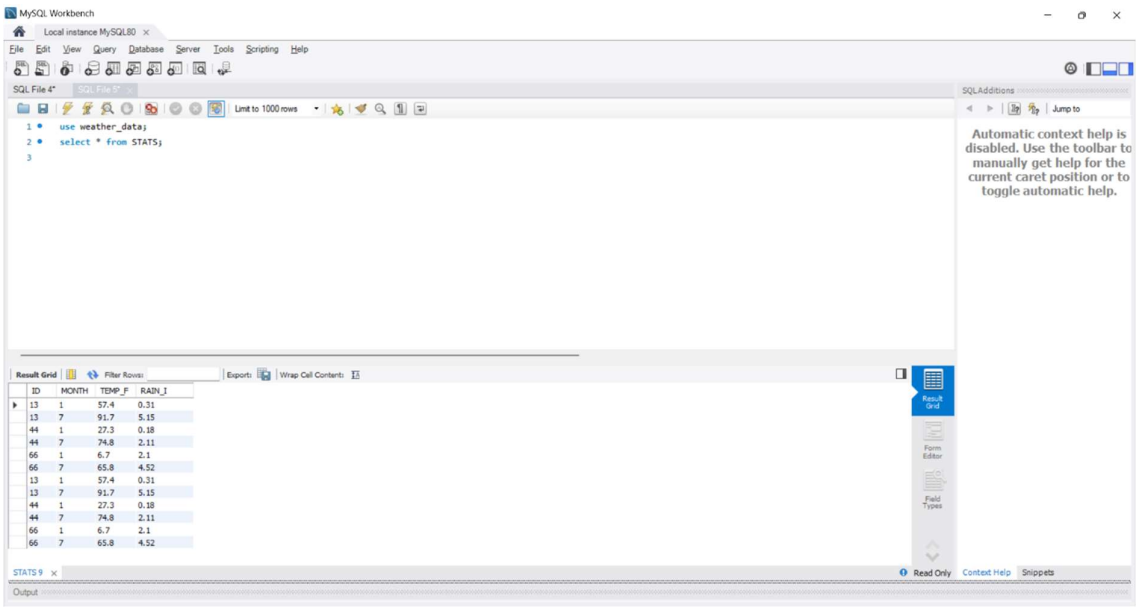


Q6) Populate the table **STATS** with some statistics for **January** and **July**:

ID	MONTH	TEMP_F	RAIN_I
13	1	57.4	.31
13	7	91.7	5.15
44	1	27.3	.18
44	7	74.8	2.11
66	1	6.7	2.1
66	7	65.8	4.52

Answer 6. We have to insert the data in the table using this

```
INSERT INTO STATS ( ID , MONTH , TEMP_F ,RAIN_I)

VALUES

(13,1,57.4,0.31),

(13,7,91.7,5.15),

(44,1,27.3,0.18),

(44,7,74.8,2.11),

(66,1,6.7,2.1),

(66,7,65.8,4.52);
```

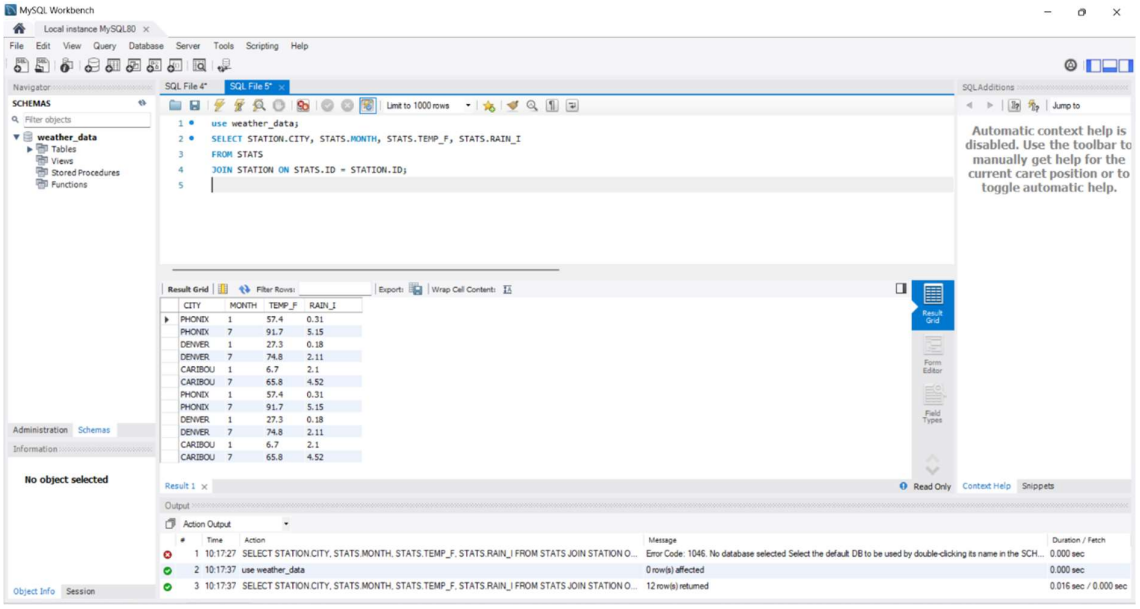


Q7) Execute a query to display temperature stats (from the **STATS** table) for each city (from the **STATION** table).

Answer 7.Here we have to combine two tables STATS and STATION

Query used :-

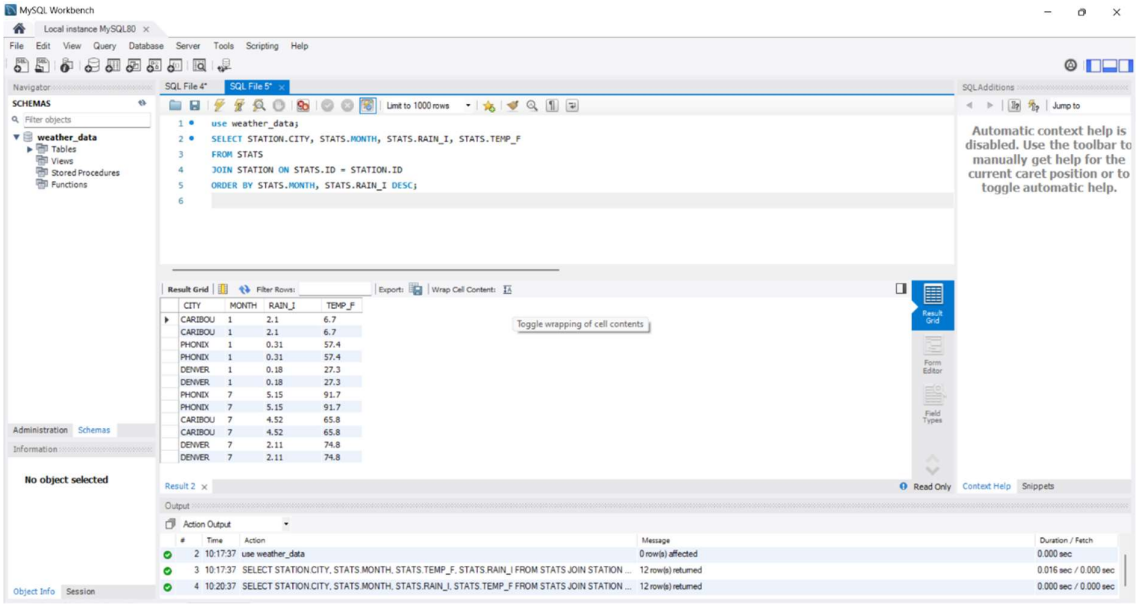
```
    SELECT STATION.CITY, STATS.MONTH, STATS.TEMP_F, STATS.RAIN_I

FROM STATS

JOIN STATION ON STATS.ID = STATION.ID;
```



Q8) Execute a query to look at the table **STATS**, ordered by month and greatest rainfall, with columns rearranged. It should also show the corresponding cities.

Answer 8. We have to sort the data in month first and city later query used:-

```
SELECT STATION.CITY, STATS.MONTH, STATS.RAIN_I, STATS.TEMP_F
FROM STATS
JOIN STATION ON STATS.ID = STATION.ID
ORDER BY STATS.MONTH, STATS.RAIN_I DESC;
```

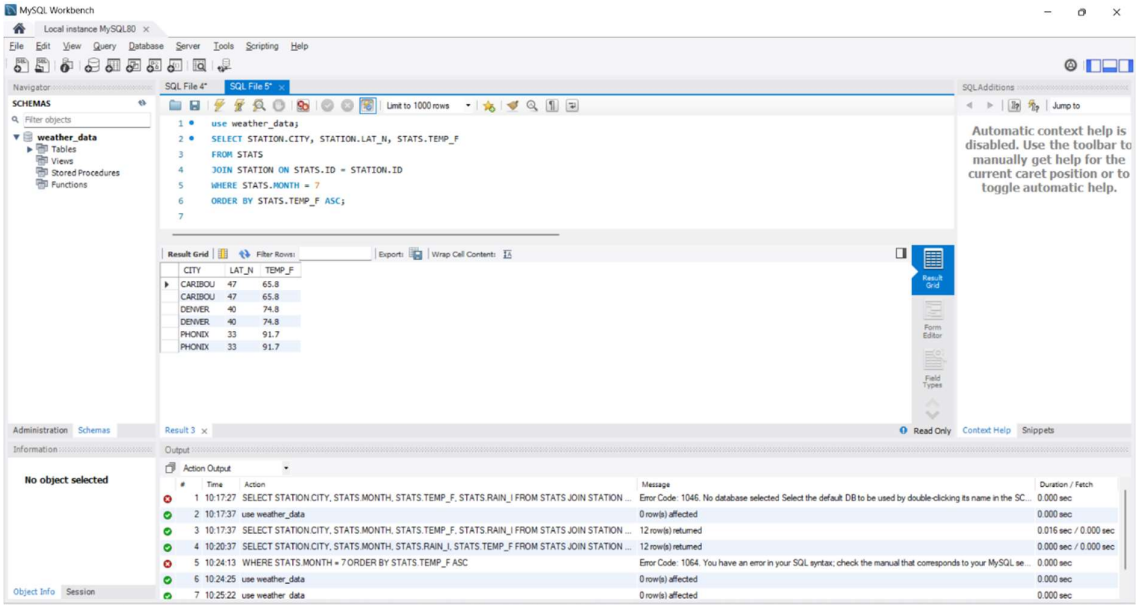


Q9) Execute a query to look at temperatures for **July** from table **STATS**, lowest temperatures first, picking up **city name** and **latitude**.

Answer 9. We have to pick data from July only

Query used

```
SELECT STATION.CITY, STATION.LAT_N, STATS.TEMP_F

FROM STATS

JOIN STATION ON STATS.ID = STATION.ID

WHERE STATS.MONTH = 7

ORDER BY STATS.TEMP_F ASC;
```



Q10) Execute a query to show **MAX** and **MIN** temperatures as well as average rainfall for each city.

Answer 10.We have to calculate MAX , MIN and AVERAGE of each city

Query used :- SELECT STATION.CITY,

MAX(STATS.TEMP_F) AS MAX_TEMP,

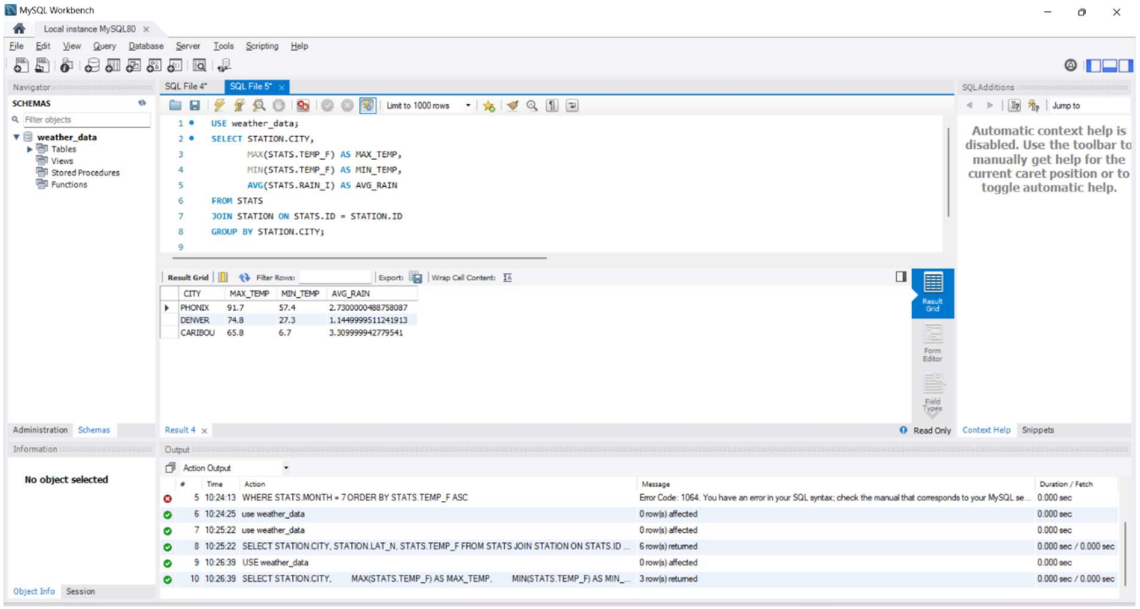
MIN(STATS.TEMP_F) AS MIN_TEMP,

AVG(STATS.RAIN_I) AS AVG_RAINFALL

FROM STATS

JOIN STATION ON STATS.ID = STATION.ID

GROUP BY STATION.CITY;

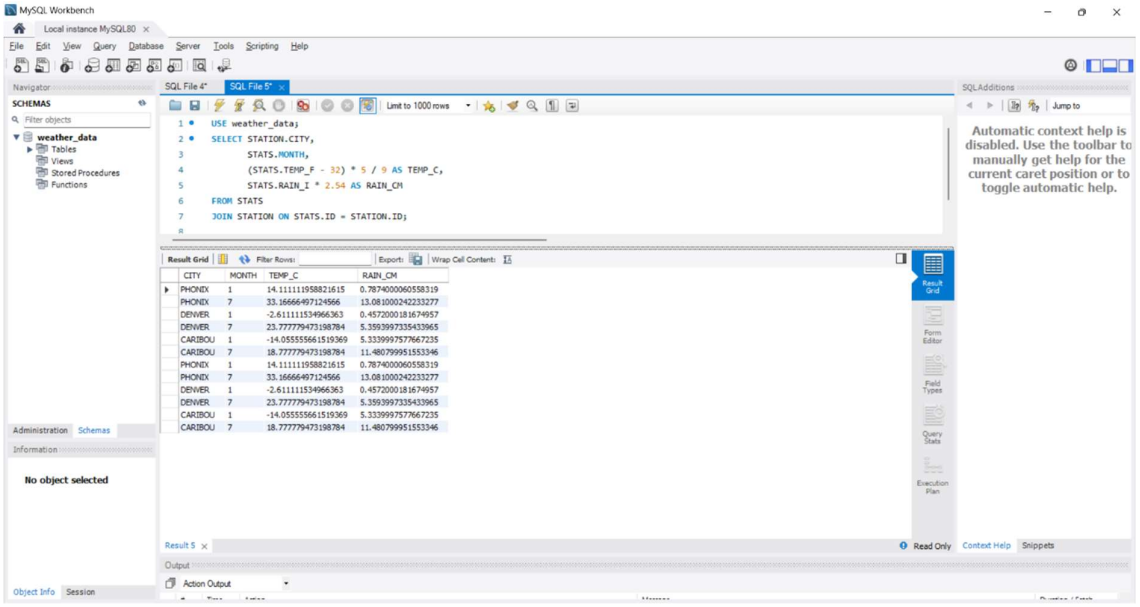


Q11) Execute a query to display each city's monthly temperature in **Celcius** and rainfall in **Centimeter**.

Answer 11. We have to convert temperature to celcius and rainfall to centimentr

Used query :-

```
SELECT STATION.CITY,
    (STATS.TEMP_F - 32) * 5/9 AS TEMP_C,
    STATS.RAIN_I * 2.54 AS RAIN_CM
FROM STATS
JOIN STATION ON STATS.ID = STATION.ID;
```

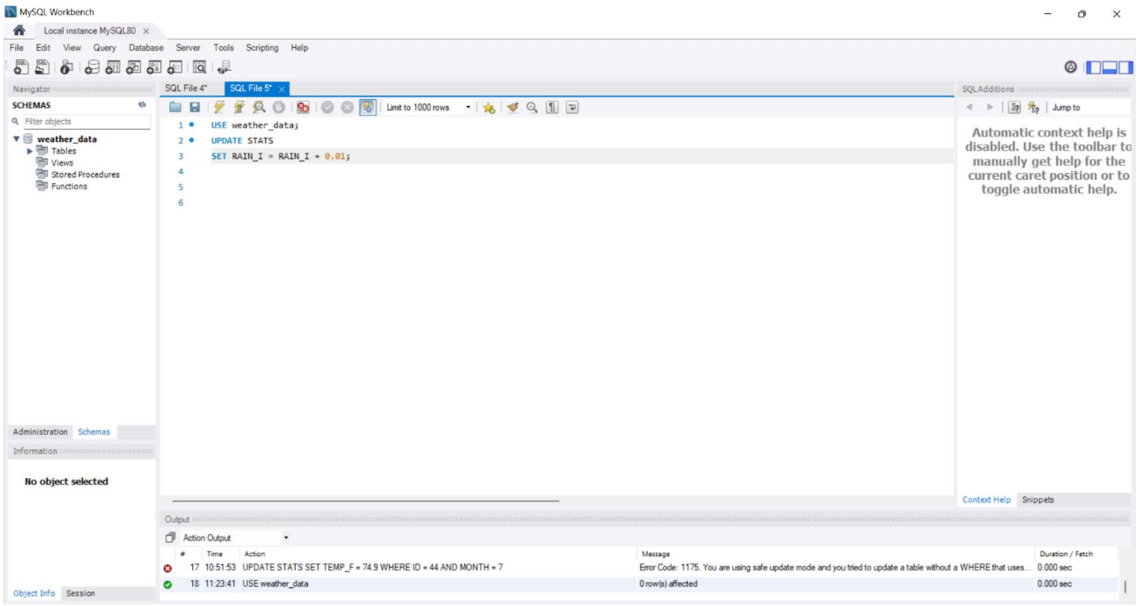


Q12) Update all rows of table **STATS** to compensate for faulty rain gauges known to read 0.01 inches low.

Answer 12. We have to adjust all rainfall measurements by adding 0.01 inches to account for a known error.

Query used :- UPDATE STATS

SET RAIN_I = RAIN_I + 0.01;



Q13) Update **Denver's July** temperature reading as **74.9**.

Answer 13.Our required is to update Denver's July (`MONTH = 7`) temperature (`TEMP_F`) to 74.9.

Query used:-