Name: Rahul Patel
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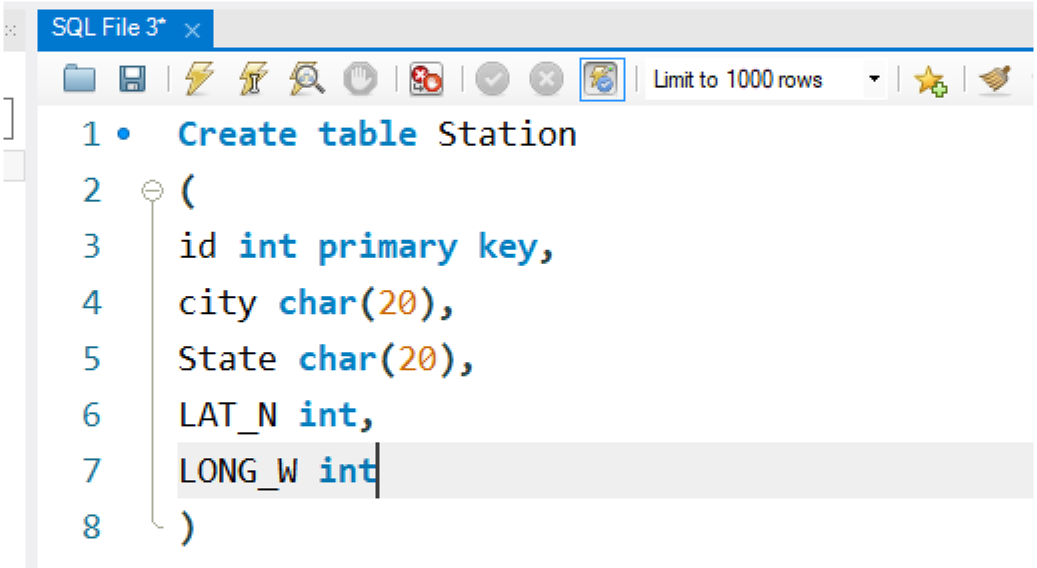
Course name: Business analyst
Assignment Title: SQL Assignment Submission

Questions:

Q1) Create a table “STATION” to store in formation about weather observation stations.

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

SQL Query Screenshot:



```
Create table Station
(
id int primary key,
city char(20),
State char(20),
LAT_N int,
LONG_W int
)
```

Query Output Screenshot:

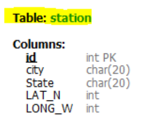
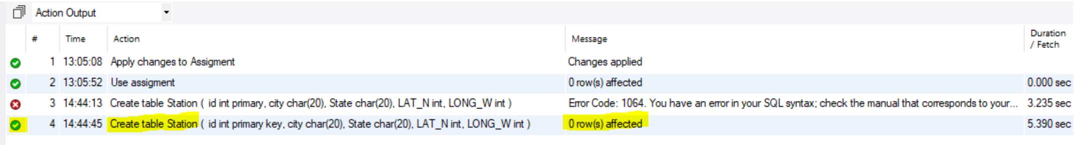


Table: station

Columns:

id	int PK
city	char(20)
State	char(20)
LAT_N	int
LONG_W	int



	#	Time	Action	Message	Duration / Fetch
✓	1	13:05:08	Apply changes to Assigment	Changes applied	
✓	2	13:05:52	Use assigment	0 row(s) affected	0.000 sec
☒	3	14:44:13	Create table Station (id int primary, city char(20), State char(20), LAT_N int, LONG_W int)	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your...	3.235 sec
✓	4	14:44:45	Create table Station (id int primary key, city char(20), State char(20), LAT_N int, LONG_W int)	0 row(s) affected	5.390 sec

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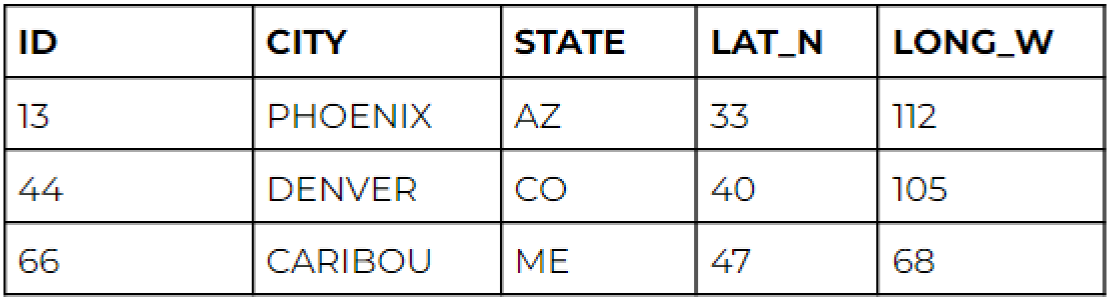
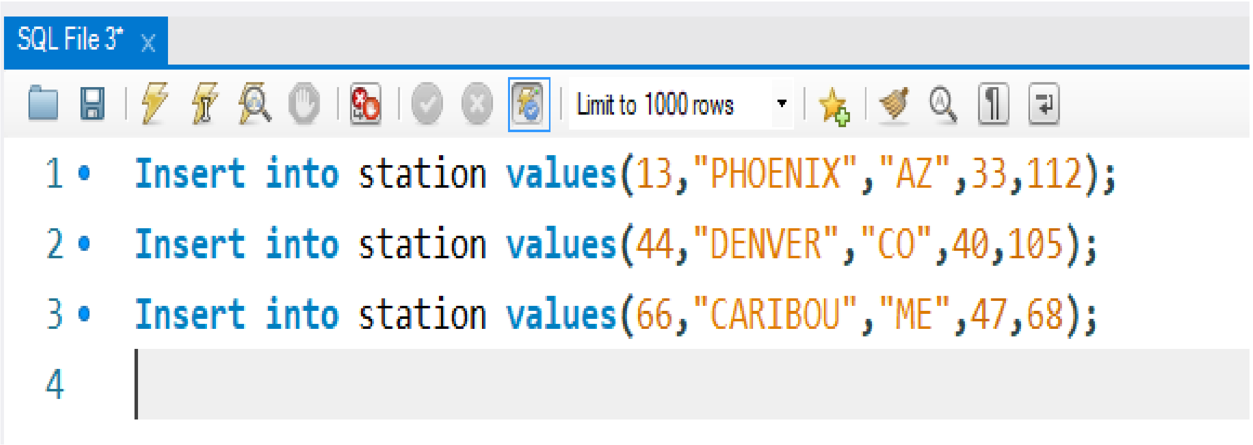
Q2) Insert the following records into the table:



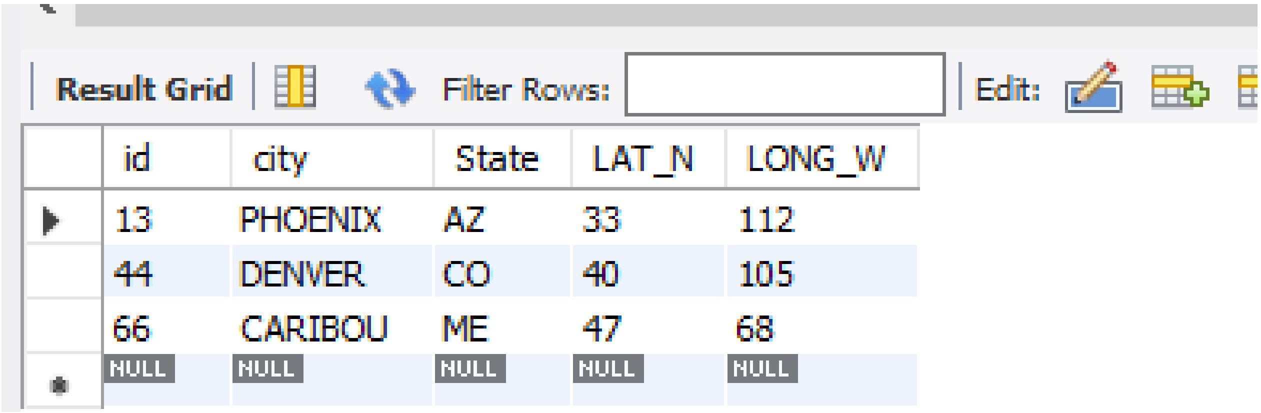
ID	CITY	STATE	LAT_N	LONG_W
13	PHOENIX	AZ	33	112
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68

SQL Query Screenshot:



```sql
Insert into station values(13,"PHOENIX","AZ",33,112);
Insert into station values(44,"DENVER","CO",40,105);
Insert into station values(66,"CARIBOU","ME",47,68);
```

Query Output Screenshot:



id	city	State	LAT_N	LONG_W
13	PHOENIX	AZ	33	112
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68
NULL	NULL	NULL	NULL	NULL

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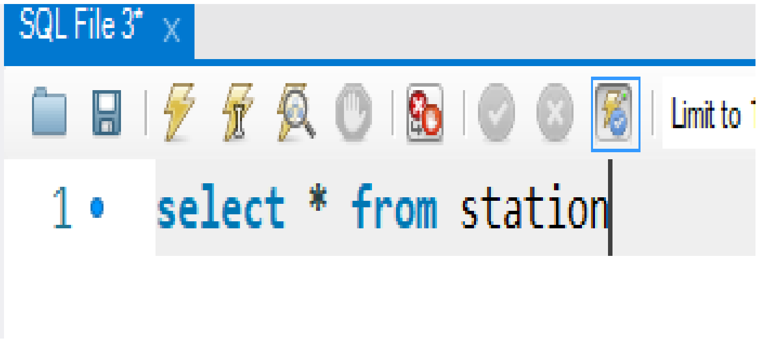
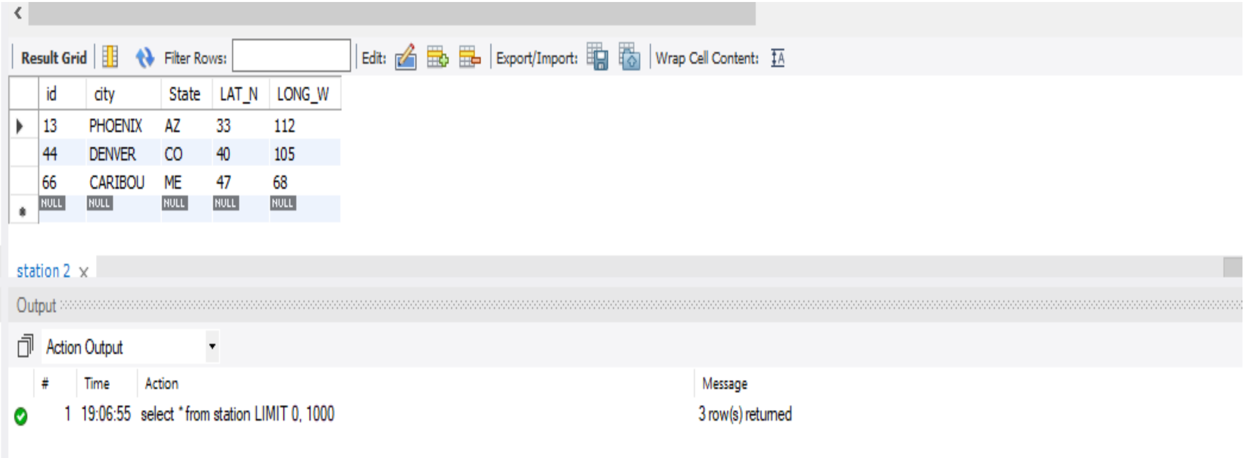
Q3) Execute a query to look at table STATION in undefined order.

SQL Query Screenshot:



```
select * from station
```

Query Output Screenshot:

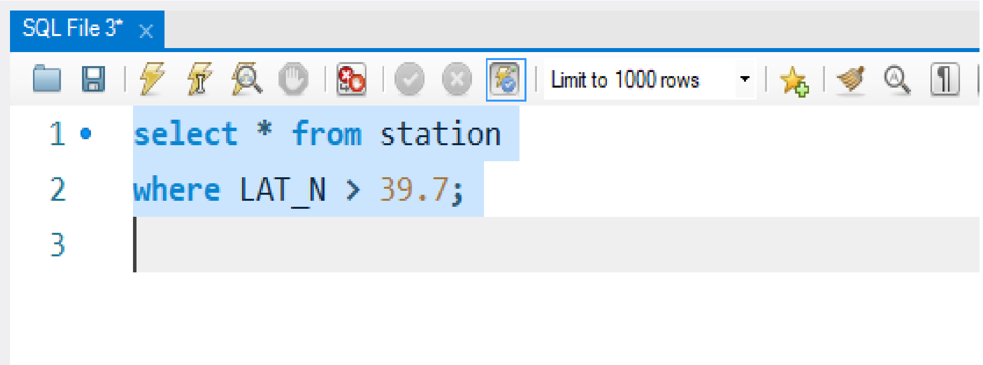


id	city	State	LAT_N	LONG_W
13	PHOENIX	AZ	33	112
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68
NULL	NULL	NULL	NULL	NULL

#	Time	Action	Message
1	19:06:55	select * from station LIMIT 0, 1000	3 row(s) returned

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

SQL Query Screenshot:



```
select * from station
where LAT_N > 39.7;
```

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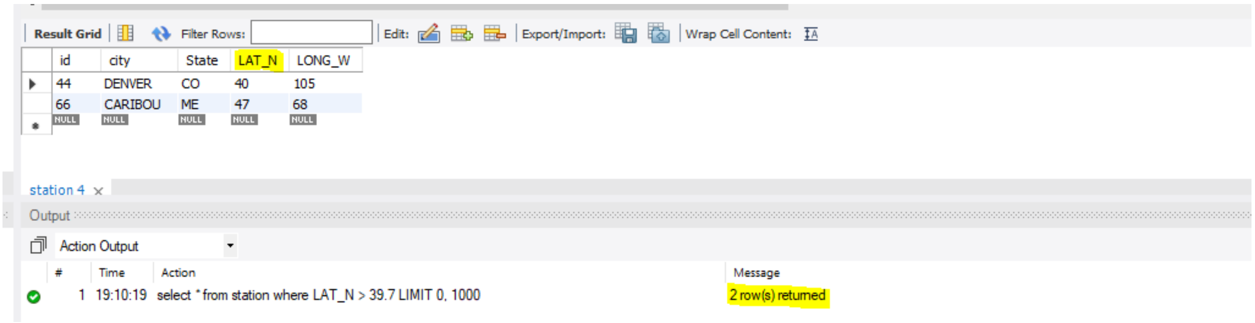
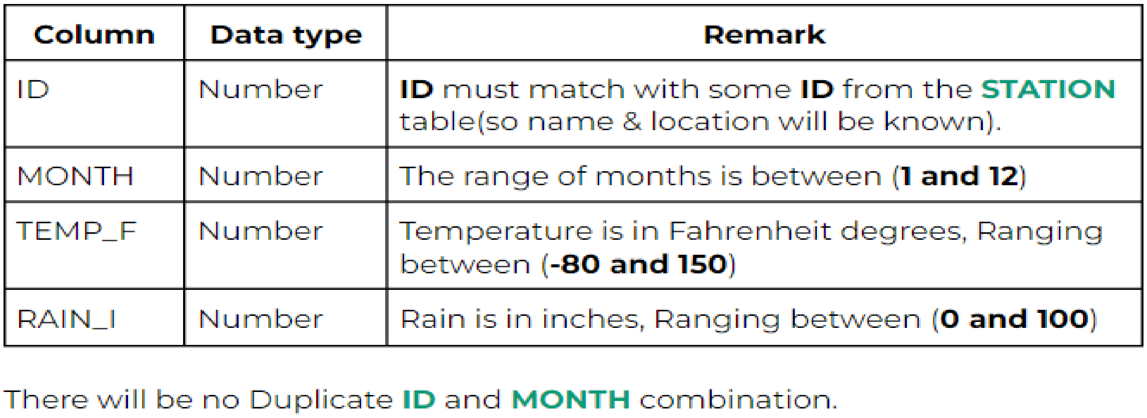
Query Output Screenshot:



id	city	State	LAT_N	LONG_W
44	DENVER	CO	40	105
66	CARIBOU	ME	47	68
NULL	NULL	NULL	NULL	NULL

#	Time	Action	Message
1	19:10:19	select * from station where LAT_N > 39.7 LIMIT 0, 1000	2 row(s) returned

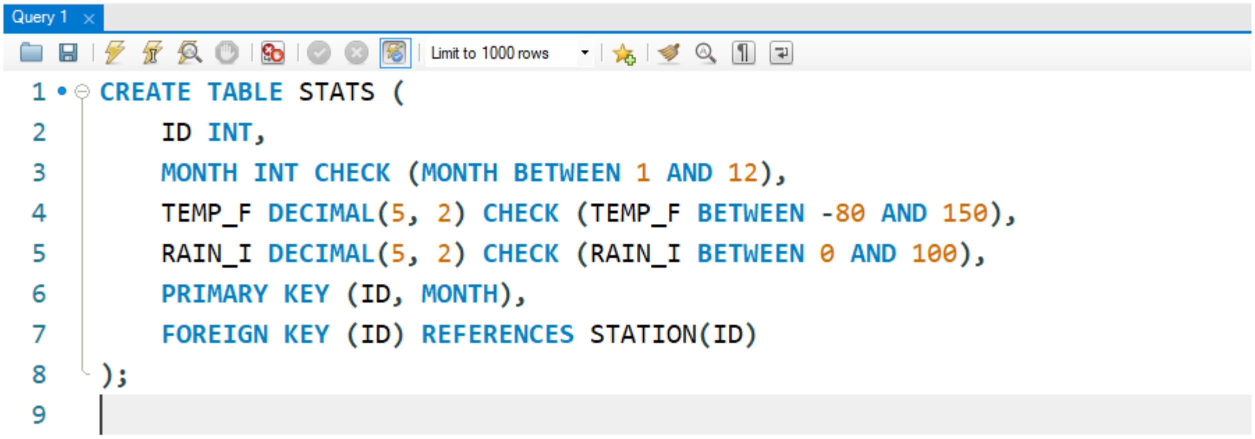
Q5) Create another table, 'STATS', to store normalized temperature and precipitation data.



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.

SQL Query Screenshot:



```
CREATE TABLE STATS (
    ID INT,
    MONTH INT CHECK (MONTH BETWEEN 1 AND 12),
    TEMP_F DECIMAL(5, 2) CHECK (TEMP_F BETWEEN -80 AND 150),
    RAIN_I DECIMAL(5, 2) CHECK (RAIN_I BETWEEN 0 AND 100),
    PRIMARY KEY (ID, MONTH),
    FOREIGN KEY (ID) REFERENCES STATION(ID)
);
```

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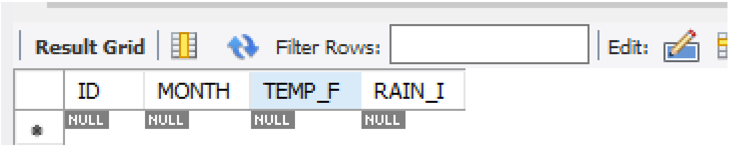
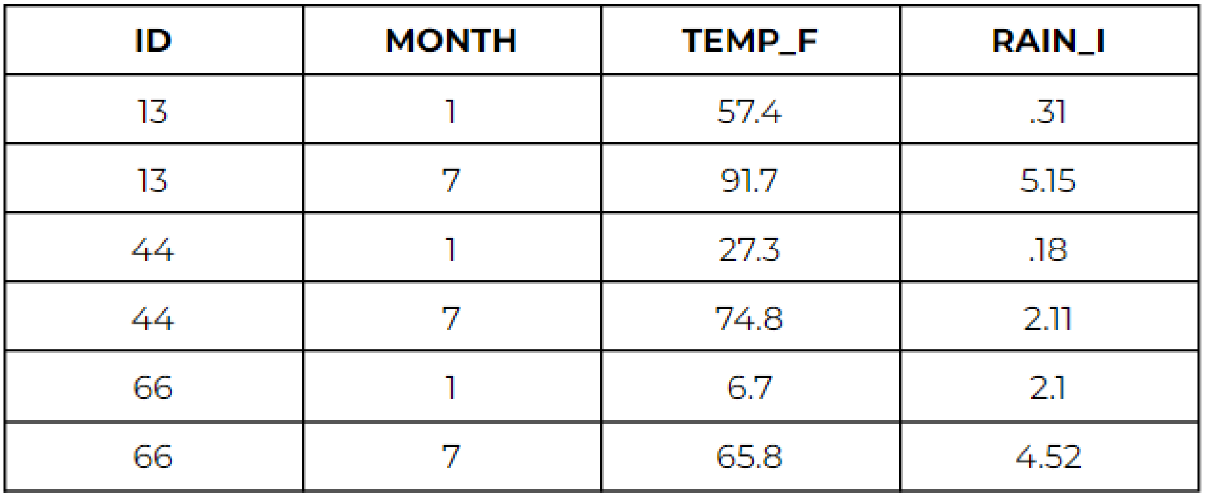
Query Output Screenshot:



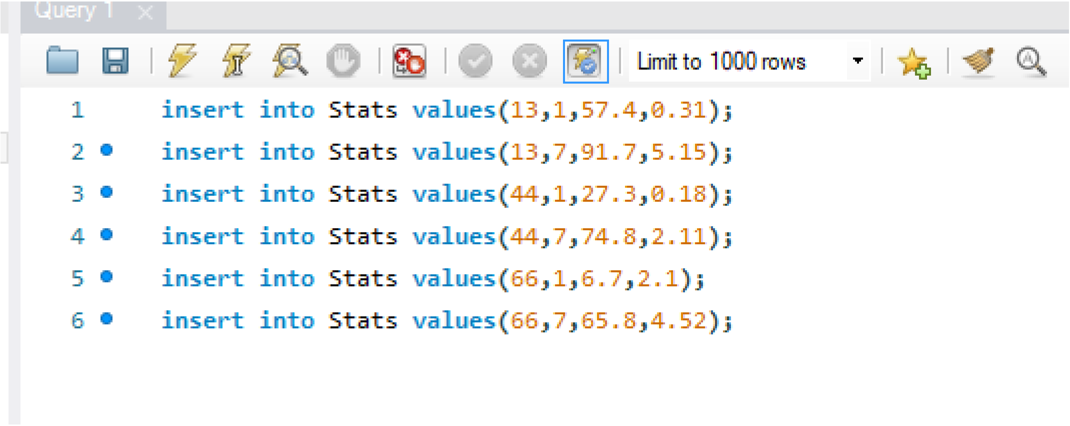
	ID	MONTH	TEMP_F	RAIN_I
*	NULL	NULL	NULL	NULL

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

SQL Query Screenshot:



```
insert into Stats values(13,1,57.4,0.31);
insert into Stats values(13,7,91.7,5.15);
insert into Stats values(44,1,27.3,0.18);
insert into Stats values(44,7,74.8,2.11);
insert into Stats values(66,1,6.7,2.1);
insert into Stats values(66,7,65.8,4.52);
```

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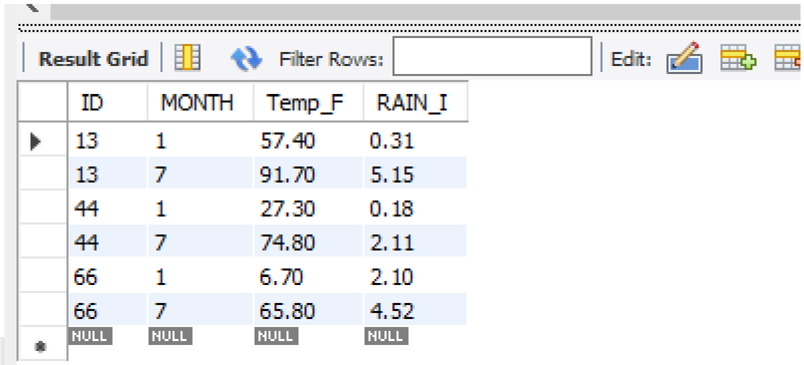
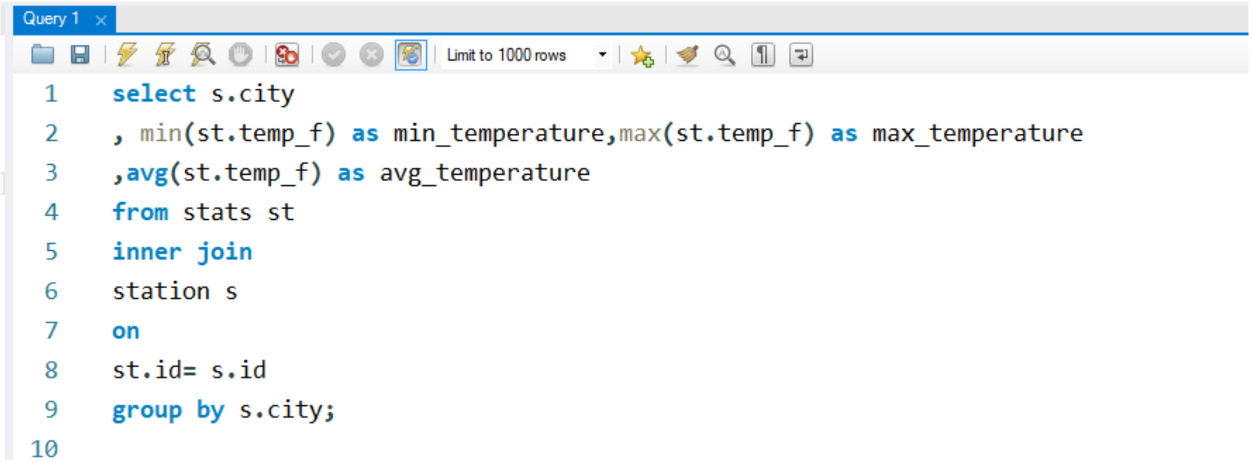
Query Output Screenshot:



ID	MONTH	Temp_F	RAIN_I
13	1	57.40	0.31
13	7	91.70	5.15
44	1	27.30	0.18
44	7	74.80	2.11
66	1	6.70	2.10
66	7	65.80	4.52
NULL	NULL	NULL	NULL

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

SQL Query Screenshot:



```sql
select s.city
, min(st.temp_f) as min_temperature,max(st.temp_f) as max_temperature
,avg(st.temp_f) as avg_temperature
from stats st
inner join
station s
on
st.id= s.id
group by s.city;

```

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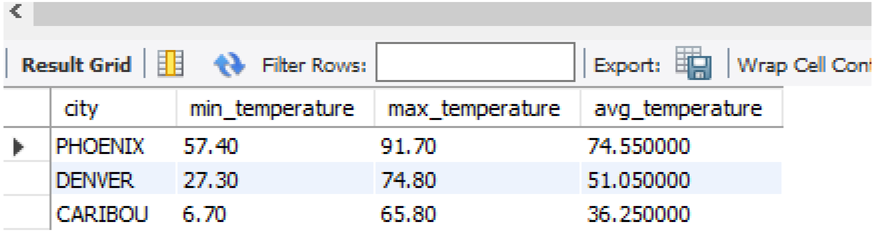
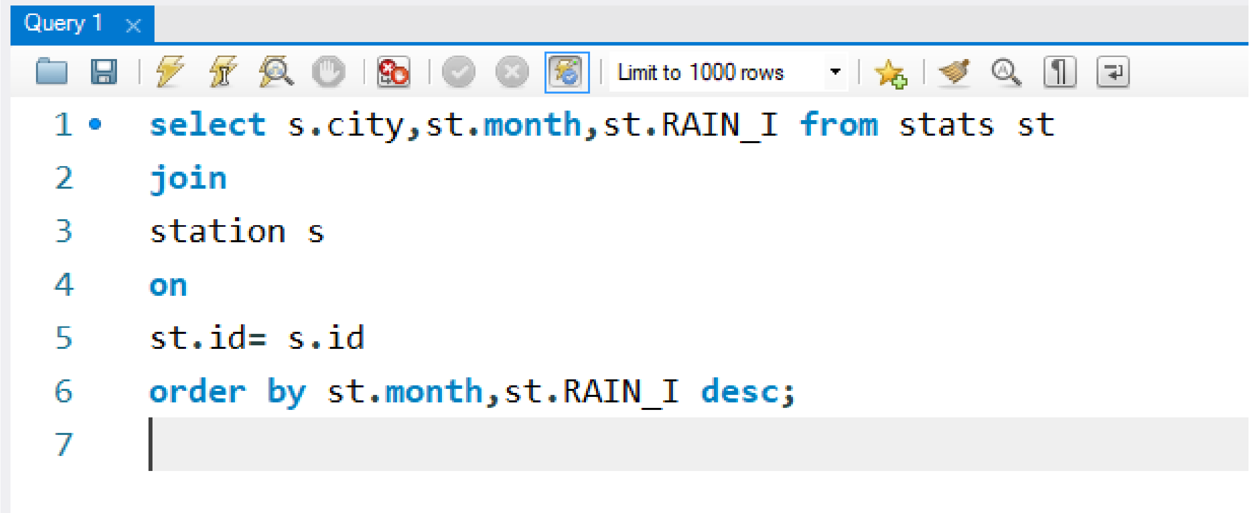
Query Output Screenshot:



city	min_temperature	max_temperature	avg_temperature
PHOENIX	57.40	91.70	74.550000
DENVER	27.30	74.80	51.050000
CARIBOU	6.70	65.80	36.250000

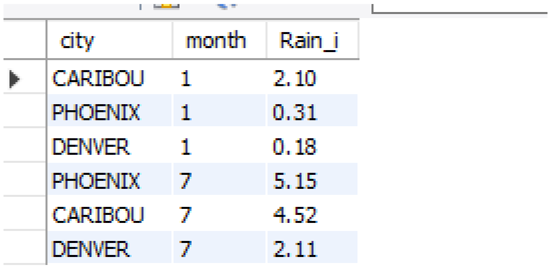
Q8) Execute a query to look at the table STATS, ordered by month and greatest rain fall, with columns rearranged. It should also show the corresponding cities.

SQL Query Screenshot:



```
select s.city,st.month,st.RAIN_I from stats st
join
station s
on
st.id= s.id
order by st.month,st.RAIN_I desc;
```

Query Output Screenshot:



city	month	Rain_i
CARIBOU	1	2.10
PHOENIX	1	0.31
DENVER	1	0.18
PHOENIX	7	5.15
CARIBOU	7	4.52
DENVER	7	2.11

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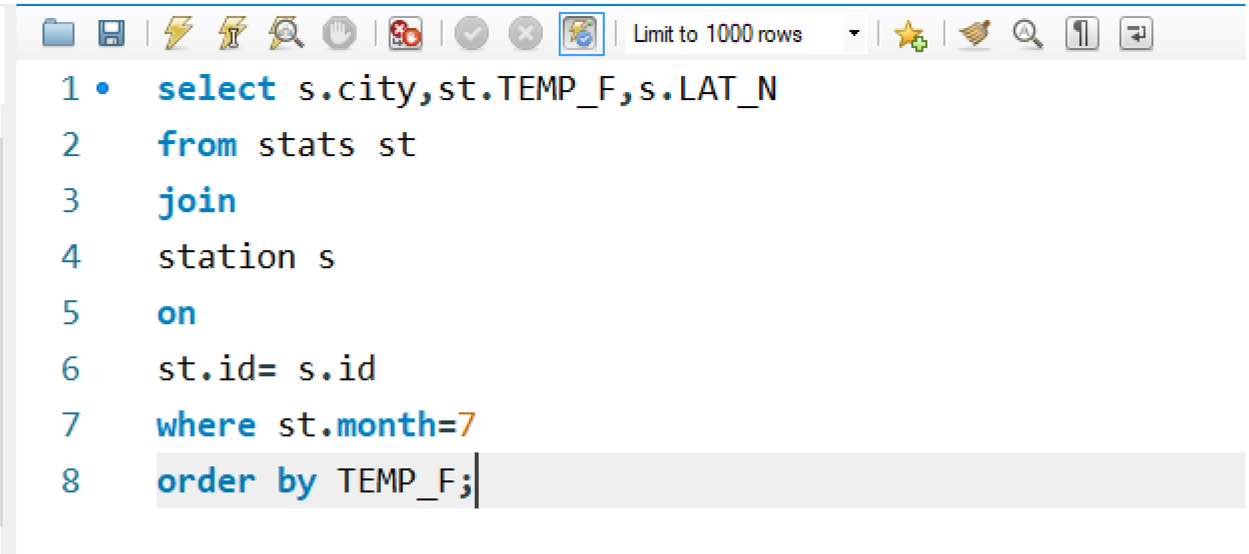
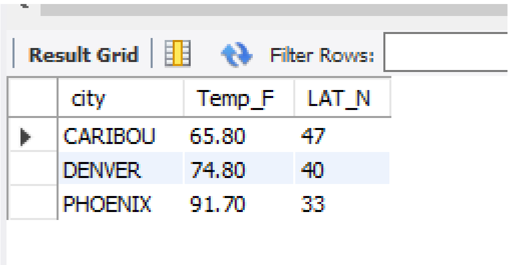
Q9) Execute a query to look at temperatures for July from table STATS, lowest temperatures first, picking up city name and latitude.

SQL Query Screenshot:



```
select s.city,st.TEMP_F,s.LAT_N
from stats st
join
station s
on
st.id= s.id
where st.month=7
order by TEMP_F;
```

Query Output Screenshot:



city	Temp_F	LAT_N
CARIBOU	65.80	47
DENVER	74.80	40
PHOENIX	91.70	33

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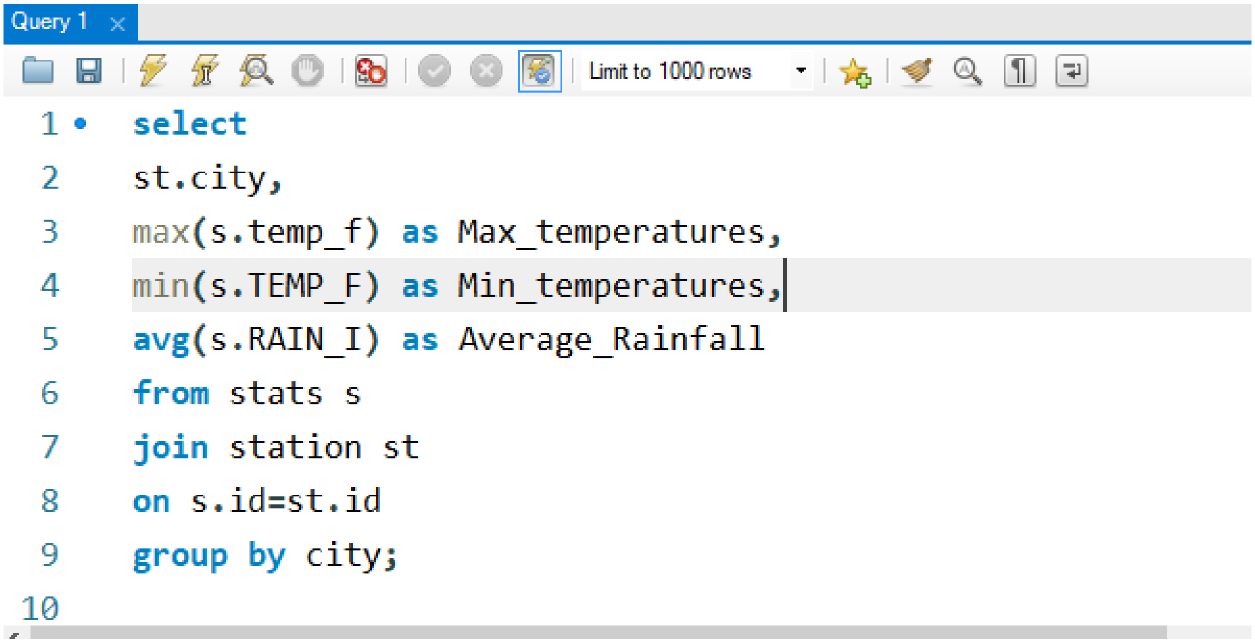
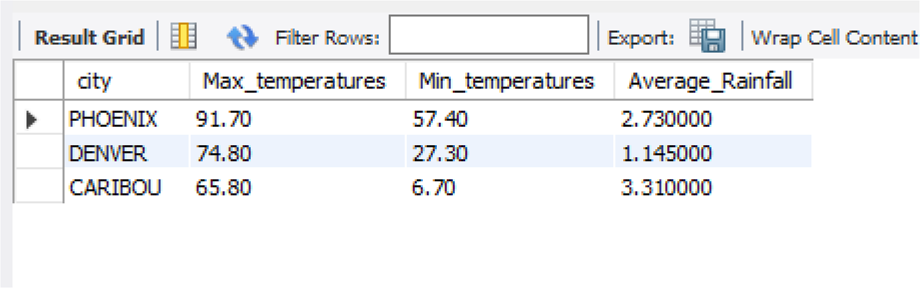
Q10) Execute a query to show MAX and MIN temperatures as well as average rainfall for each city.

SQL Query Screenshot:



```sql
select
st.city,
max(s.temp_f) as Max_temperatures,
min(s.TEMP_F) as Min_temperatures,
avg(s.RAIN_I) as Average_Rainfall
from stats s
join station st
on s.id=st.id
group by city;
```

Query Output Screenshot:



city	Max_temperatures	Min_temperatures	Average_Rainfall
PHOENIX	91.70	57.40	2.730000
DENVER	74.80	27.30	1.145000
CARIBOU	65.80	6.70	3.310000

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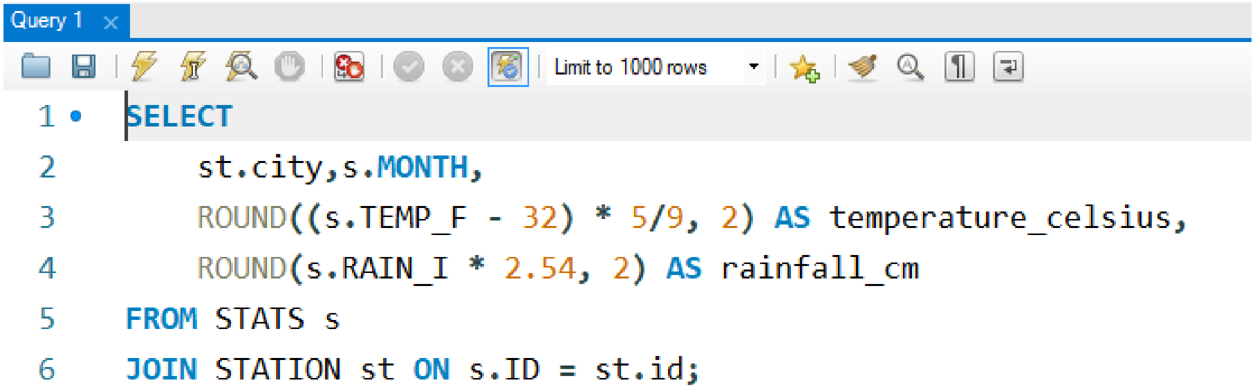
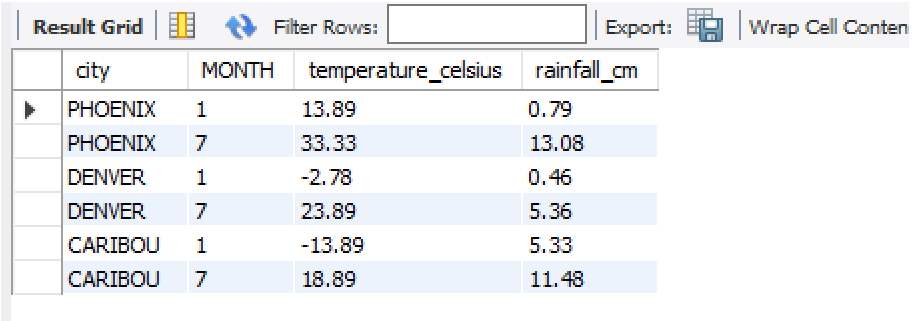
Q11) Execute a query to display each city's monthly temperature in Celsius and rain fall in Centimeter.

SQL Query Screenshot:



```
SELECT
        st.city,s.MONTH,
        ROUND((s.TEMP_F - 32) * 5/9, 2) AS temperature_celsius,
        ROUND(s.RAIN_I * 2.54, 2) AS rainfall_cm
FROM STATS s
JOIN STATION st ON s.ID = st.id;
```

Query Output Screenshot:



city	MONTH	temperature_celsius	rainfall_cm
PHOENIX	1	13.89	0.79
PHOENIX	7	33.33	13.08
DENVER	1	-2.78	0.46
DENVER	7	23.89	5.36
CARIBOU	1	-13.89	5.33
CARIBOU	7	18.89	11.48

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

SQL Query Screenshot:

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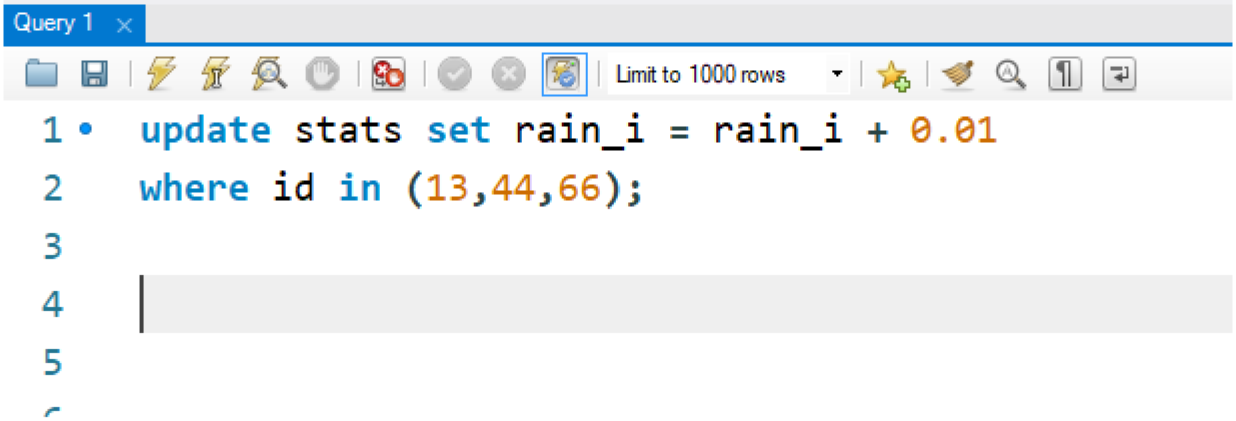
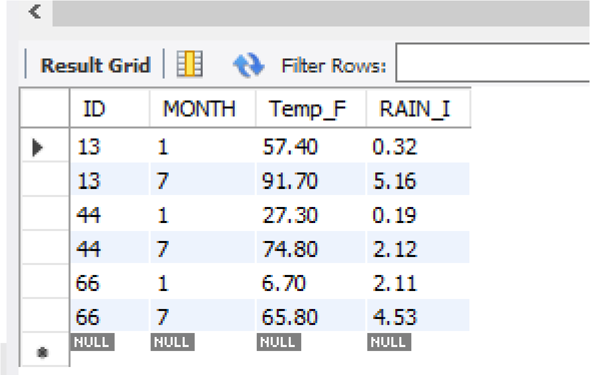


```
update stats set rain_i = rain_i + 0.01
where id in (13,44,66);
```

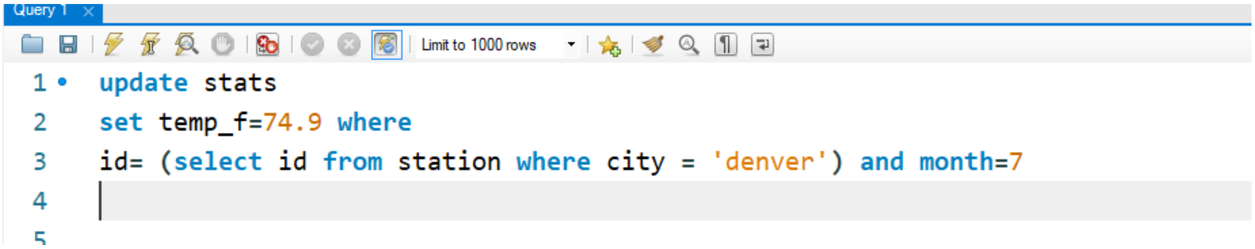
Query Output Screenshot:



ID	MONTH	Temp_F	RAIN_I
13	1	57.40	0.32
13	7	91.70	5.16
44	1	27.30	0.19
44	7	74.80	2.12
66	1	6.70	2.11
66	7	65.80	4.53
NULL	NULL	NULL	NULL

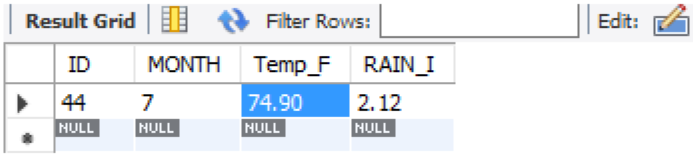
Q13) Update Denver's July temperature reading as 74.9

SQL Query Screenshot:



```
update stats
set temp_f=74.9 where
id= (select id from station where city = 'denver') and month=7
```

Query Output Screenshot:



ID	MONTH	Temp_F	RAIN_I
44	7	74.90	2.12
NULL	NULL	NULL	NULL