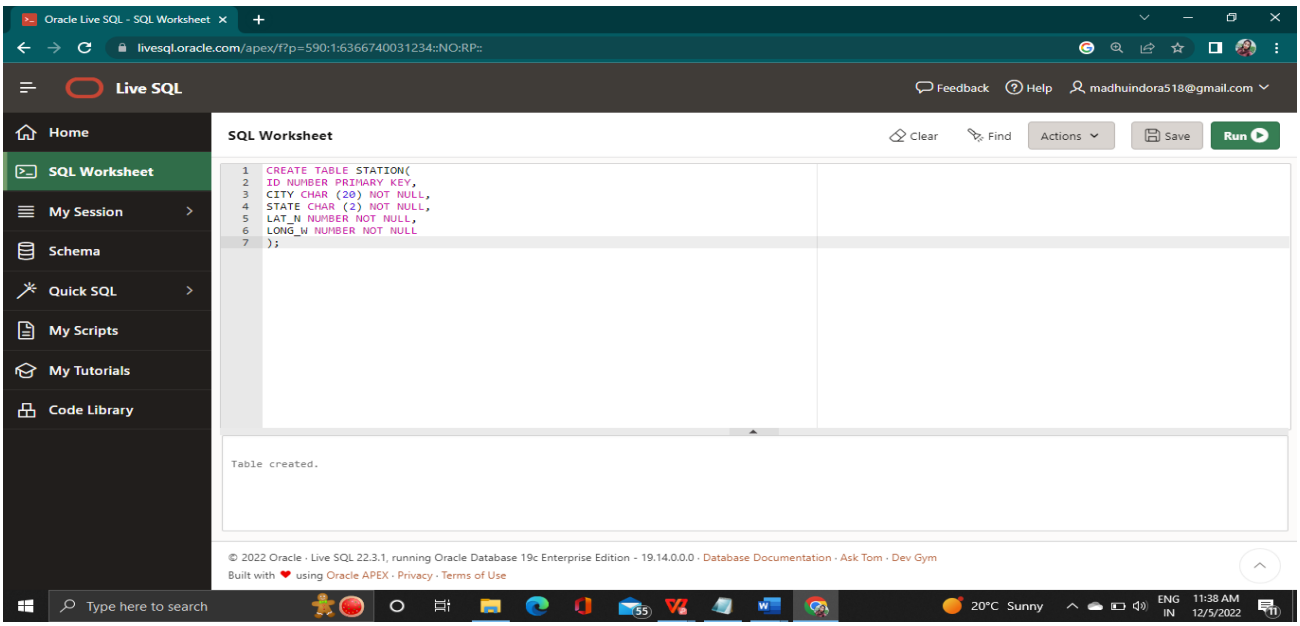
SQL MAJOR ASSIGNMENT

1) Create a table “Station” to store information about weather observation stations:
QUERY-

```
CREATE TABLE STATION(
ID NUMBER PRIMARY KEY,
CITY CHAR (20) NOT NULL,
STATE CHAR (2) NOT NULL,
LAT_N NUMBER NOT NULL,
LONG_W NUMBER NOT NULL
);
```



2) Insert the following records into the table:

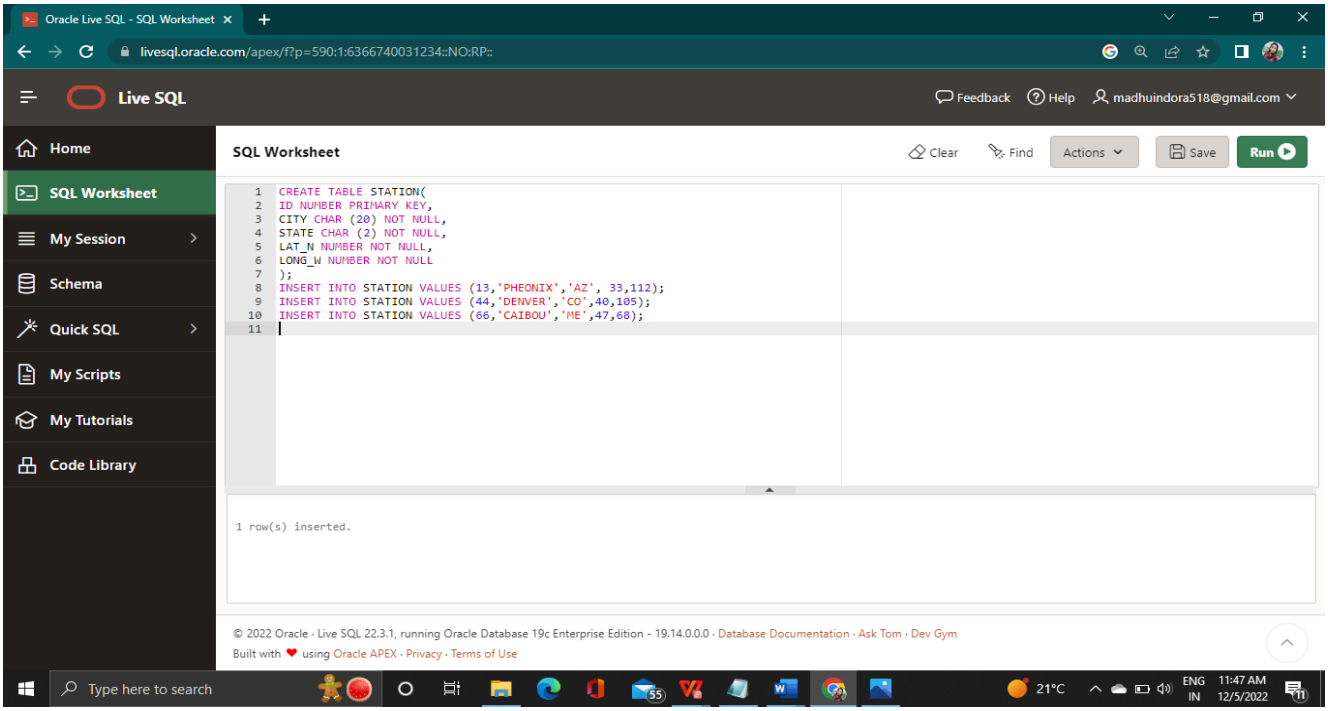
QUERY-

```
INSERT INTO STATION VALUES (13,'PHEONIX','AZ', 33,112);

INSERT INTO STATION VALUES (44,'DENVER','CO',40,105);

INSERT INTO STATION VALUES (66,'CAIBOU','ME',47,68);
```

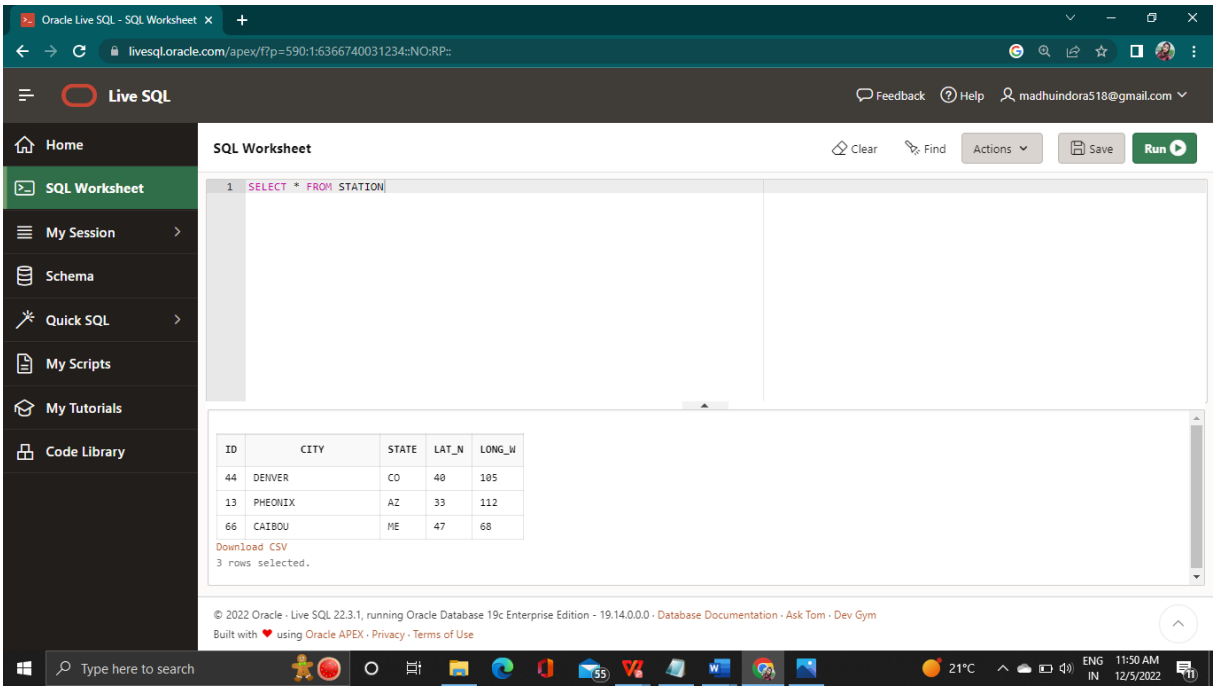
OUTPUT-



3)Execute a query to look at table STATION in undefined order:

QUERY-

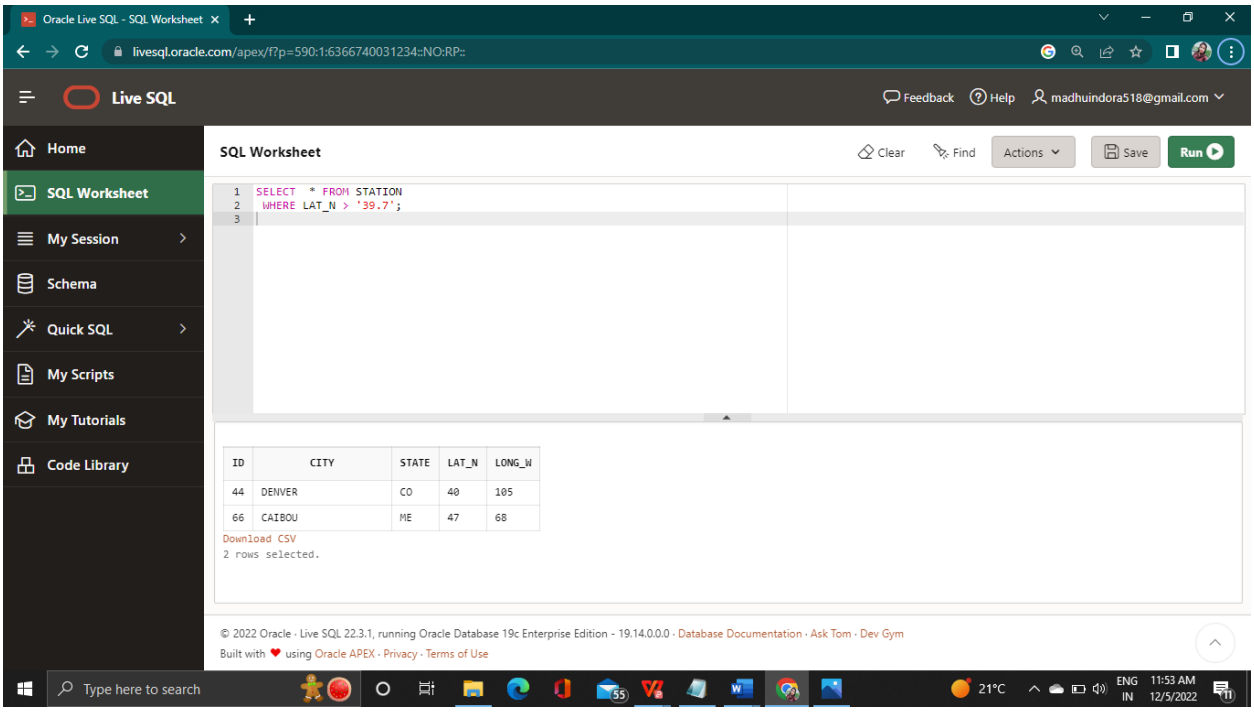
SELECT * FROM STATION;



4)Execute a query to select Northern stations (Northern latitude > 39.7):

QUERY-

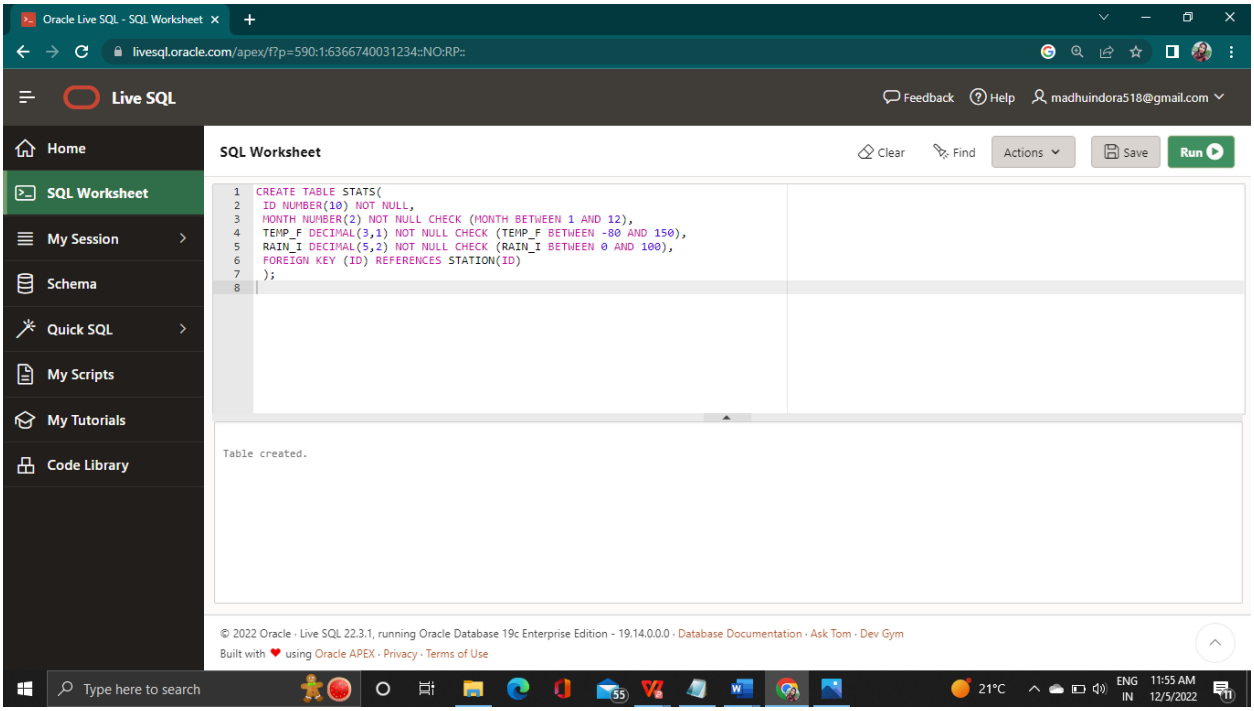
```
SELECT  * FROM STATION
 WHERE LAT_N > '39.7';
```



5)Create another table, ‘STATS’, to store normalized temperature and precipitation data:

QUERY-

```
CREATE TABLE STATS(
 ID NUMBER(10) NOT NULL,
 MONTH NUMBER(2) NOT NULL CHECK (MONTH BETWEEN 1 AND 12),
 TEMP_F DECIMAL(3,1) NOT NULL CHECK (TEMP_F BETWEEN -80 AND 150),
 RAIN_I DECIMAL(5,2) NOT NULL CHECK (RAIN_I BETWEEN 0 AND 100),
 FOREIGN KEY (ID) REFERENCES STATION(ID)
 );
```



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

QUERY-

INSERT INTO STATS VALUES (13, 1, 57.4, 0.31);

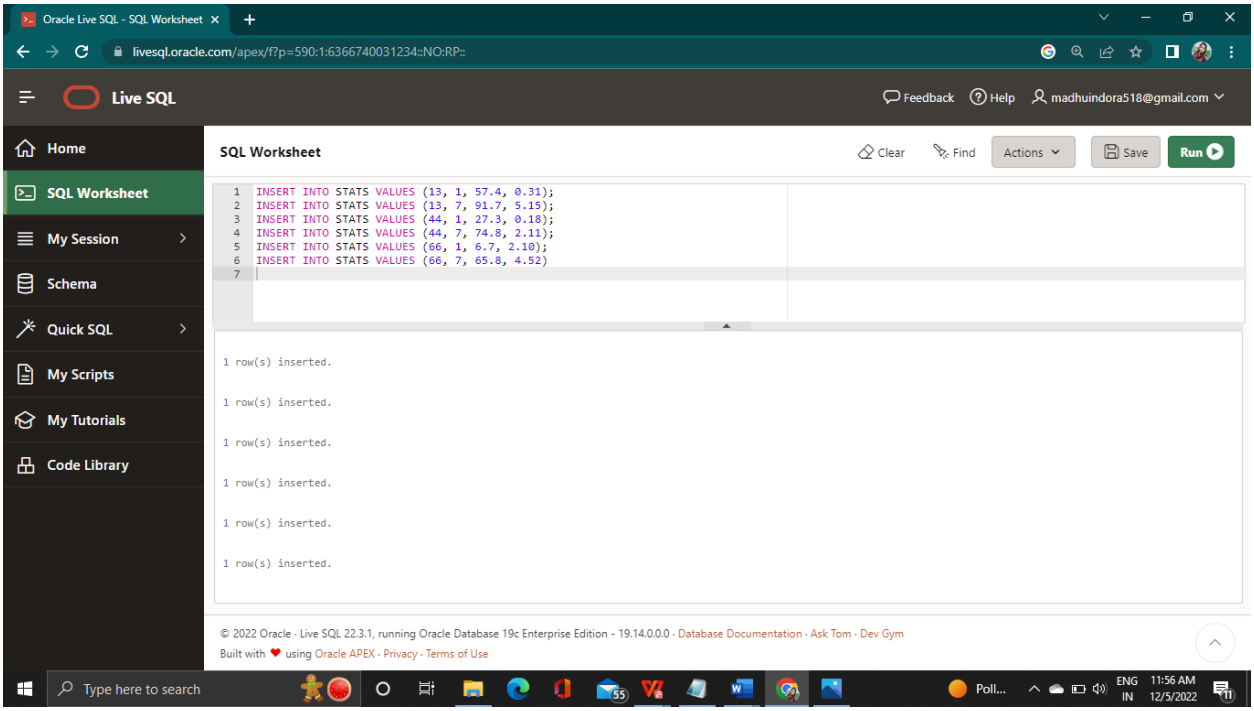
INSERT INTO STATS VALUES (13, 7, 91.7, 5.15);

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, 2.10);

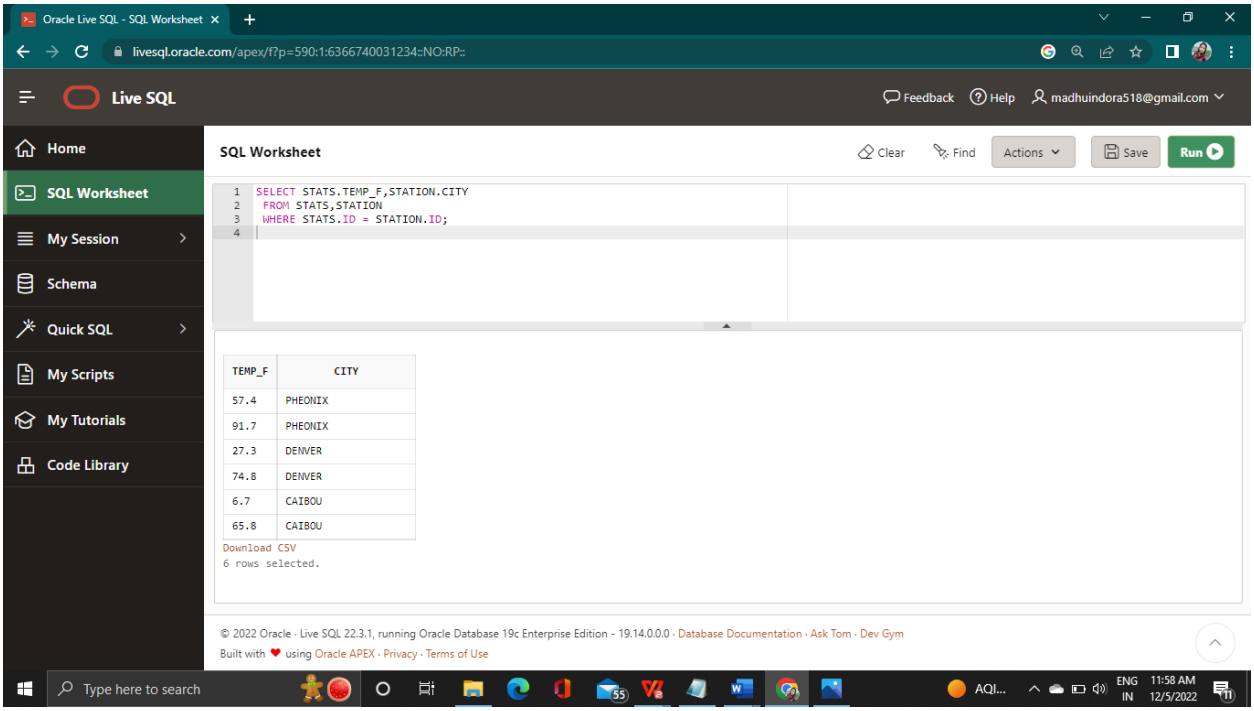
INSERT INTO STATS VALUES (66, 7, 65.8, 4.52)



7)Execute a query to display temperature stats (from STATS table) for each city (from Station table):

QUERY-

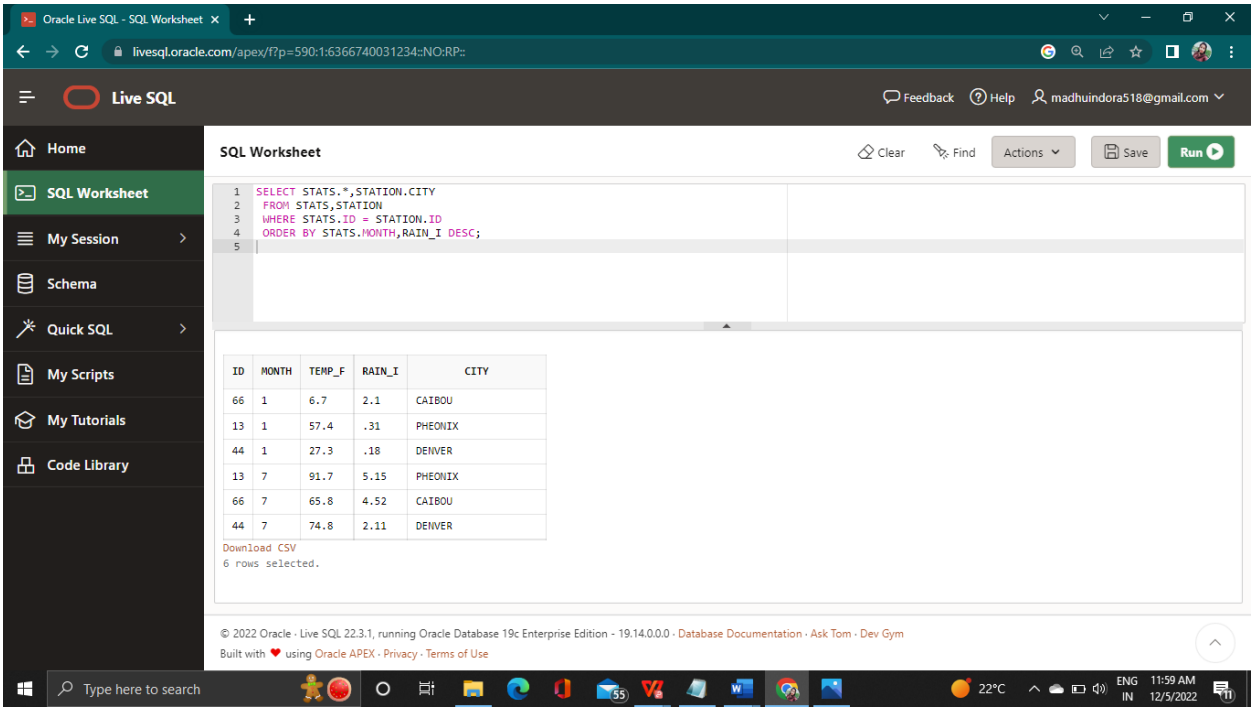
```
SELECT STATS.TEMP_F,STATION.CITY
 FROM STATS,STATION
 WHERE STATS.ID = STATION.ID;
```



8)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:

QUERY-

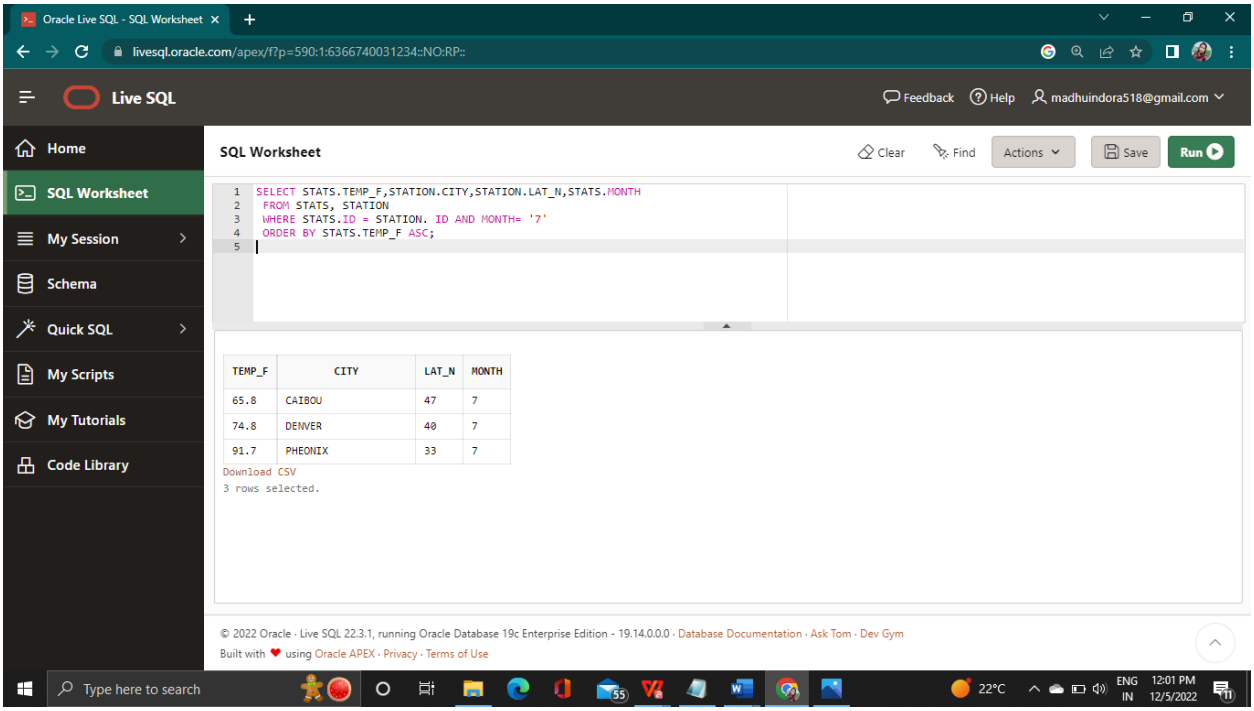
```
SELECT STATS.*,STATION.CITY
 FROM STATS,STATION
 WHERE STATS.ID = STATION.ID
 ORDER BY STATS.MONTH,RAIN_I DESC;
```



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

QUERY-

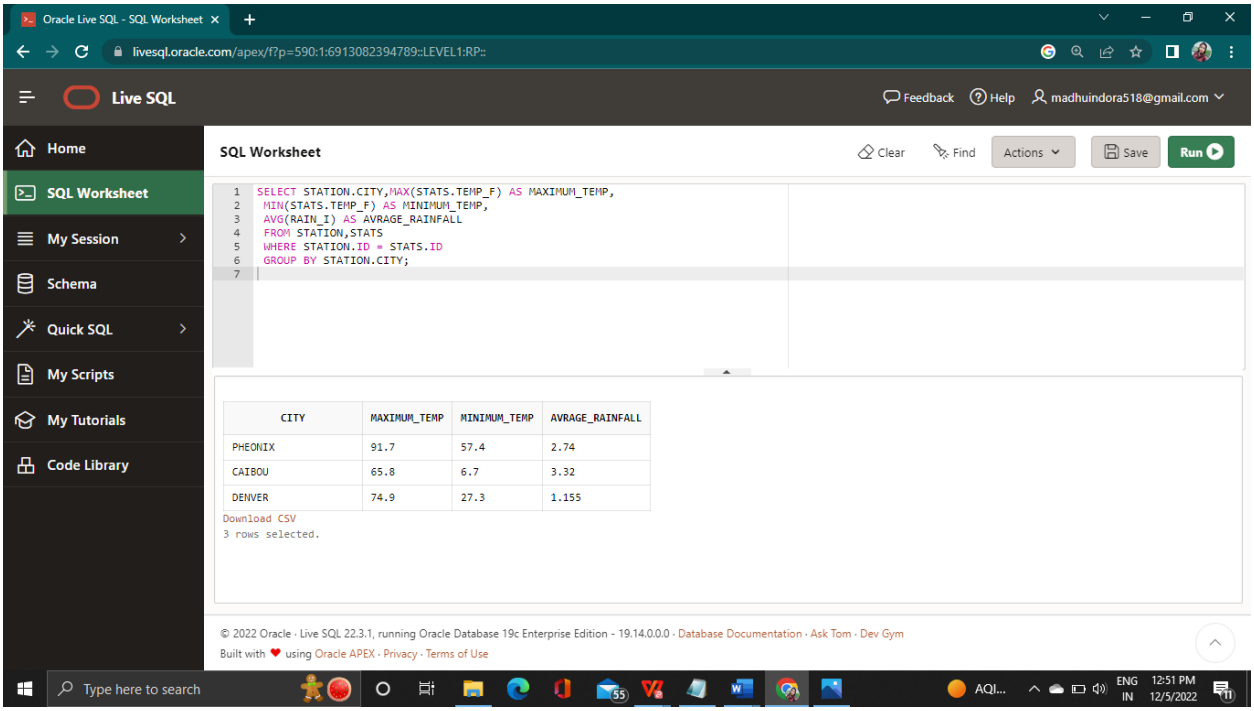
```
SELECT STATS.TEMP_F,STATION.CITY,STATION.LAT_N,STATS.MONTH
 FROM STATS, STATION
 WHERE STATS.ID = STATION. ID AND MONTH= '7'
 ORDER BY STATS.TEMP_F ASC;
```



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

QUERY-

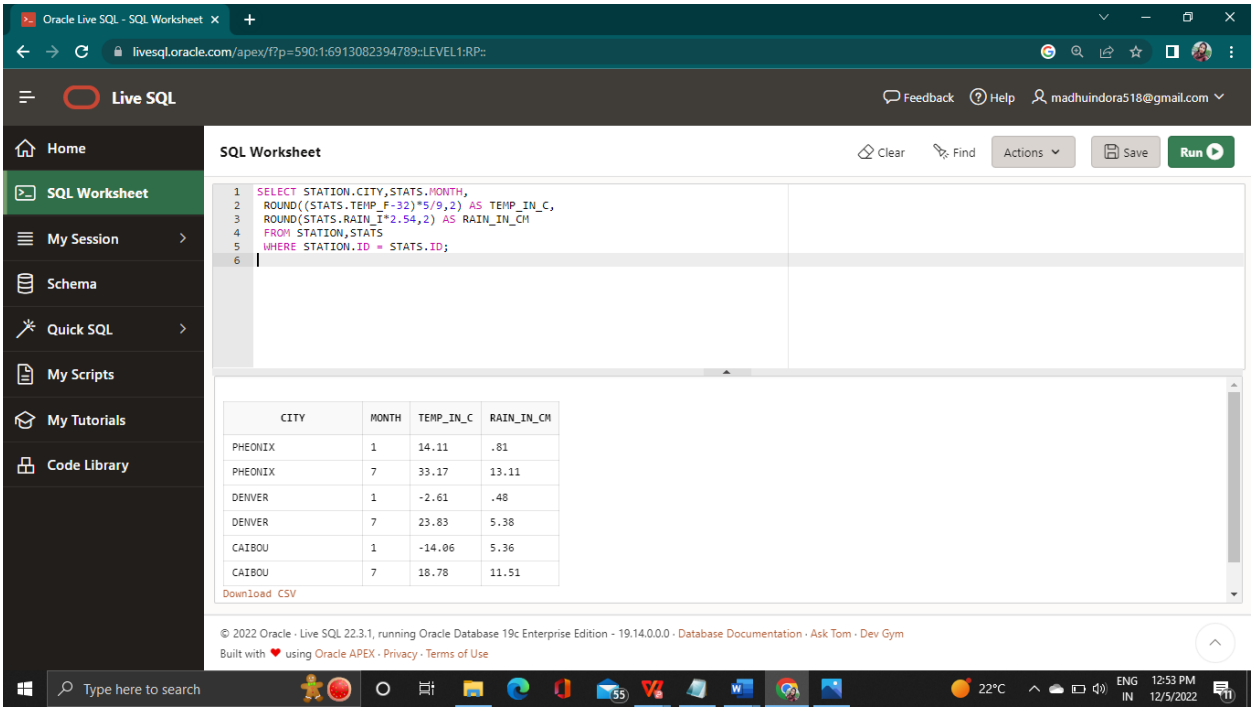
```
SELECT STATION.CITY,MAX(STATS.TEMP_F) AS MAXIMUM_TEMP,
 MIN(STATS.TEMP_F) AS MINIMUM_TEMP,
 AVG(RAIN_I) AS AVRAGE_RAINFALL
 FROM STATION,STATS
 WHERE STATION.ID = STATS.ID
 GROUP BY STATION.CITY;
```



11)Execute a query to display each city's monthly temperature in Celcius and rainfall in Centimeter:

QUERY-

```
SELECT STATION.CITY,STATS.MONTH,
 ROUND((STATS.TEMP_F-32)*5/9,2) AS TEMP_IN_C,
 ROUND(STATS.RAIN_I*2.54,2) AS RAIN_IN_CM
 FROM STATION,STATS
 WHERE STATION.ID = STATS.ID;
```

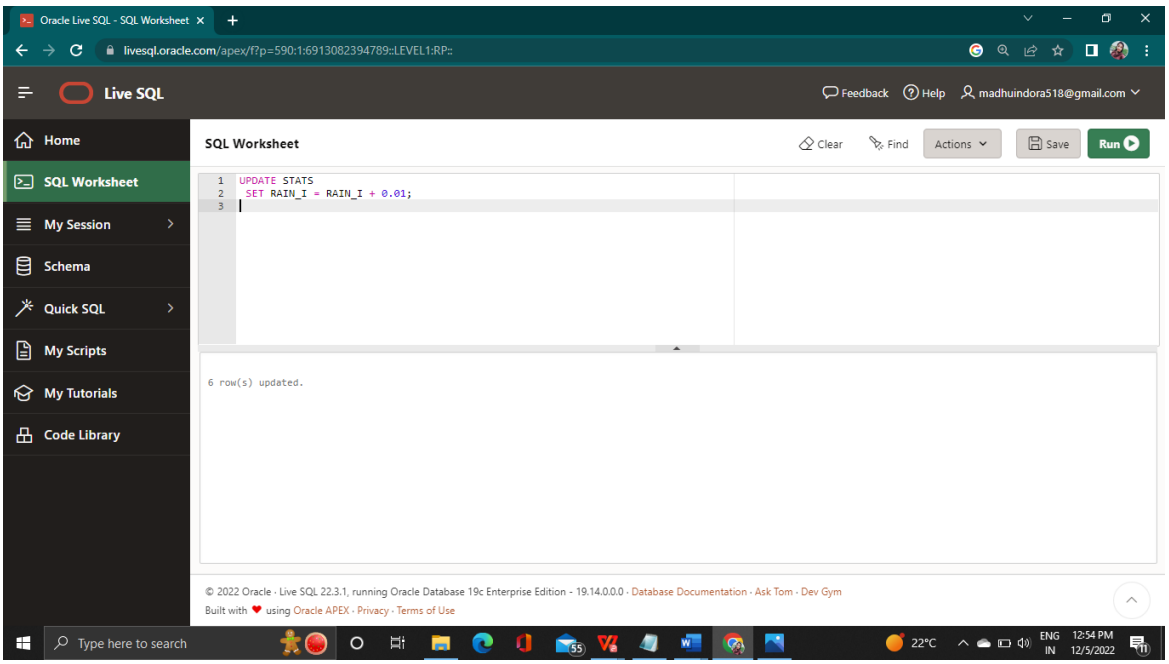


12)Update all rows of table STATS to compensate for faulty rain gauges known to read 0.01 inches low:

QUERY-

UPDATE STATS

SET RAIN_I = RAIN_I + 0.01;



13)Update Denver's July temperature reading as 74.9:

QUERY-

```
UPDATE STATS
 SET TEMP_F = 74.9
 WHERE ID=44 AND MONTH=7;
```