

NAME – SUSHMITA KUMARI GUPTA
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COURSE – BUSINESS ANALYST
Assignment - SQL [Major]

Q1) Create a table “STATION ” to store information about weather observation stations:

ANSWER :

The screenshot displays the Oracle Live SQL web application interface. The browser's address bar shows the URL <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::>. The application header includes the 'Live SQL' logo, a 'Feedback' link, a 'Help' link, and a user profile for 'realchandan2001@gmail.com'. A left-hand navigation menu contains links to 'Home', 'SQL Worksheet', 'My Session', 'Schema', 'Quick SQL', 'My Scripts', 'My Tutorials', and 'Code Library'. The 'SQL Worksheet' section is active, showing a code editor with the following SQL statement:

```
1 create table STATION
2 (ID number PRIMARY KEY,
3 CITY char(20),
4 STATE char(2),
5 LAT_N number,
6 LONG_W NUMBER)
```

Below the code editor, a message states 'Table created.' The bottom of the interface features a footer with the text: '2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym' and 'Built with ❤️ using Oracle APEX · Privacy · Terms of Use'. An 'Activate Windows' watermark is visible in the bottom right corner. The Windows taskbar at the very bottom shows the date '16-01-2024' and time '00:55'.

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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

ANS :

The screenshot displays the Live SQL web application interface. The browser tab is titled "SQL Worksheet" and the URL is <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::>. The interface includes a sidebar with navigation options: Home, SQL Worksheet (selected), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled "SQL Worksheet" and contains three lines of SQL code:

```
1 INSERT INTO STATION VALUES(13, 'PHOENIX', 'AZ', 33, 112);  
2 INSERT INTO STATION VALUES(44, 'DENVER', 'CO', 40, 105);  
3 INSERT INTO STATION VALUES(66, 'CARIBOU', 'ME', 47, 68);
```

Below the code, the execution results are shown:

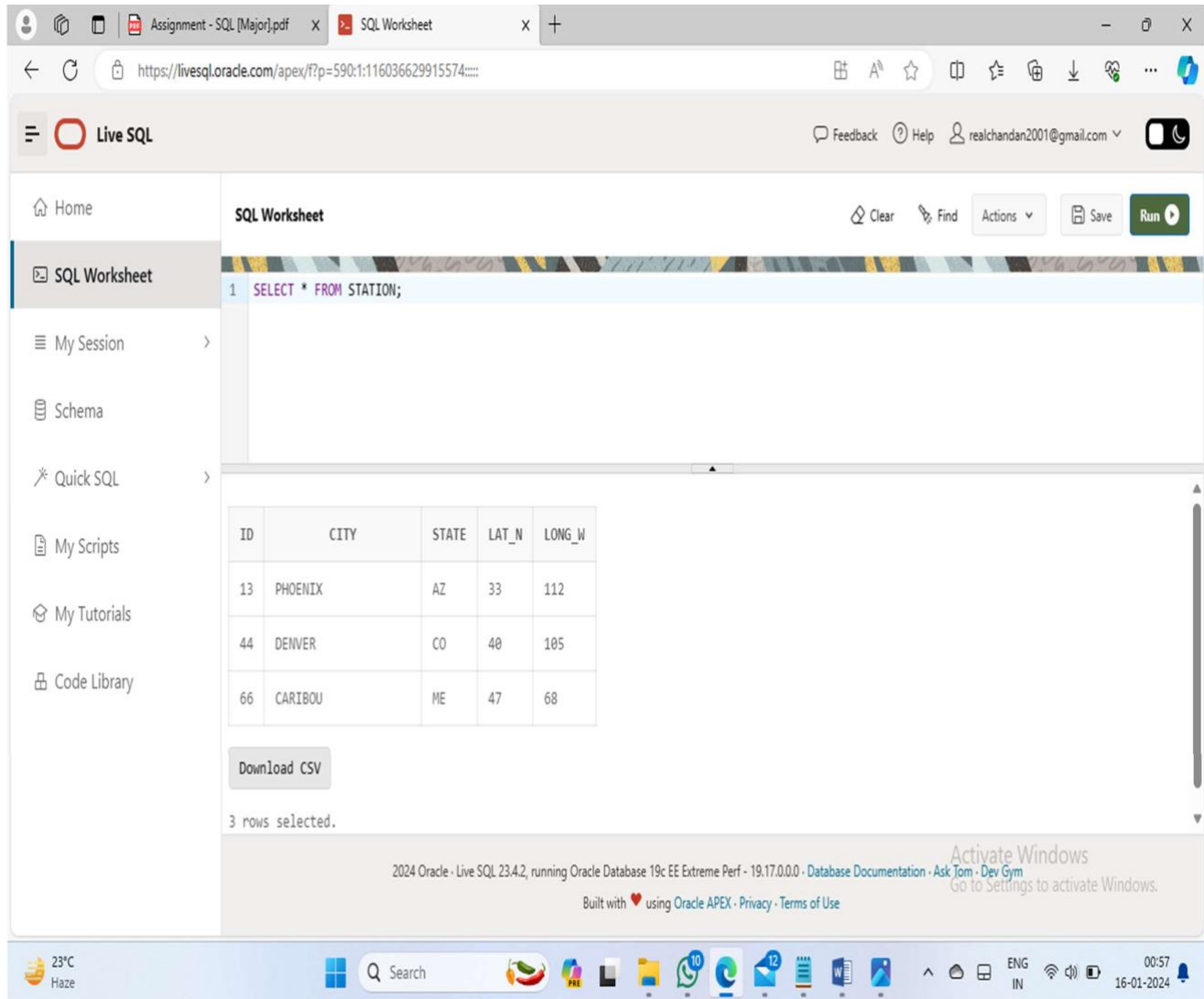
```
1 row(s) inserted.  
1 row(s) inserted.  
1 row(s) inserted.
```

At the bottom of the interface, there is a footer with the text: "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym" and "Built with ❤️ using Oracle APEX · Privacy · Terms of Use". A Windows watermark is visible in the bottom right corner.

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

ANS :



The screenshot displays the Oracle Live SQL web interface. The browser's address bar shows the URL <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::>. The interface includes a sidebar with navigation options: Home, SQL Worksheet, My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled "SQL Worksheet" and contains a text editor with the query `1 SELECT * FROM STATION;`. Below the editor, the query results are displayed in a table format. The table has five columns: ID, CITY, STATE, LAT_N, and LONG_W. It contains three rows of data. Below the table, there is a "Download CSV" button and a status message "3 rows selected.". At the bottom of the interface, a footer provides information about the Oracle Live SQL version (23.4.2) and the underlying database (Oracle Database 19c EE Extreme Perf). The Windows taskbar at the bottom shows the system clock as 00:57 on 16-01-2024, along with various system icons and a search bar.

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

Download CSV

3 rows selected.

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

ANS :

The image displays two screenshots of a SQL IDE interface, likely DBeaver, showing the execution of a query to select northern stations (Northern latitude > 39.7).

Top Screenshot: The SQL editor shows the query: `SELECT * FROM STATION WHERE LAT > 39.7`. The query is highlighted in blue. The interface includes a sidebar with a tree view of the database schema, a central editor area, and a bottom status bar.

Bottom Screenshot: The same SQL IDE interface is shown, but the query has been executed. The results are displayed in a table with 5 columns: `STATION_ID`, `STATION_NAME`, `CLASS`, `LAT`, and `LON`. The results are as follows:

STATION_ID	STATION_NAME	CLASS	LAT	LON
1	STATION 1	STATION	39.8	12.3
2	STATION 2	STATION	39.9	12.4
3	STATION 3	STATION	40.0	12.5
4	STATION 4	STATION	40.1	12.6
5	STATION 5	STATION	40.2	12.7

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

(There will be no Duplicate ID and MONTH combination.)

ID must match with same 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)

ANS :

The screenshot displays the Live SQL web application interface. The browser's address bar shows the URL <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::>. The application header includes the 'Live SQL' logo, a user profile for 'realchandan2001@gmail.com', and navigation links for 'Feedback' and 'Help'. A sidebar on the left contains a menu with 'Home', 'SQL Worksheet' (selected), 'My Session', 'Schema', 'Quick SQL', 'My Scripts', 'My Tutorials', and 'Code Library'. The main content area, titled 'SQL Worksheet', contains the following SQL code:

```
1 CREATE TABLE STATS
2 (ID NUMBER,
3  MONTH NUMBER CHECK(MONTH BETWEEN 1 AND 12),
4  TEMP_F NUMBER CHECK (TEMP_F BETWEEN -80 AND 150),
5  RAIN_I NUMBER CHECK (RAIN_I BETWEEN 0 AND 100),
6  CONSTRAINT STATS_ID_MONTH UNIQUE (ID,MONTH),
7  CONSTRAINT STATS_ID_FK FOREIGN KEY (ID) REFERENCES STATION(ID)) ;
```

Below the code editor, a status message reads 'Table created.' The bottom of the interface features a footer with system information: '2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym', a Windows activation watermark, and a taskbar at the bottom showing the date '16-01-2024' and time '01:03'.

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

ANS :

The screenshot displays the Oracle Live SQL web interface. The browser tabs include 'Assignment - SQL [Major].pdf', 'SQL Worksheet', and '1.pdf'. The address bar shows the URL: <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::>. The interface features a sidebar with navigation options: Home, SQL Worksheet (selected), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains six lines of SQL code for inserting data into the 'STATS' table. Below the code, the execution results show '1 row(s) inserted.' for each statement. The footer of the interface includes version information: '2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym'. A Windows watermark is visible in the bottom right corner.

```
1 INSERT INTO STATS VALUES(13,1,57.4,0.31);
2 INSERT INTO STATS VALUES(13,7,91.7,5.15);
3 INSERT INTO STATS VALUES(44,1,27.3,0.18);
4 INSERT INTO STATS VALUES(44,7,74.8,2.11);
5 INSERT INTO STATS VALUES(66,1,6.7,2.1);
6 INSERT INTO STATS VALUES(66,7,65.8,4.52);
```

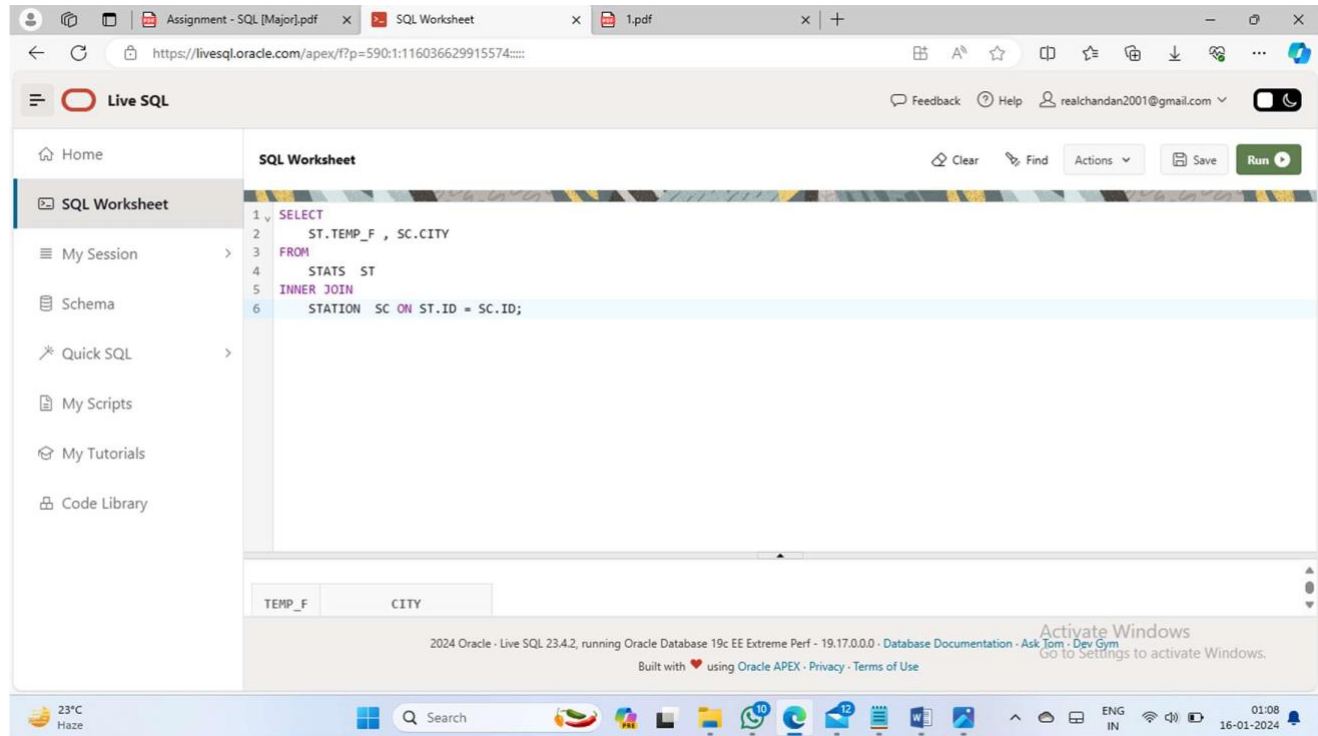
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.

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

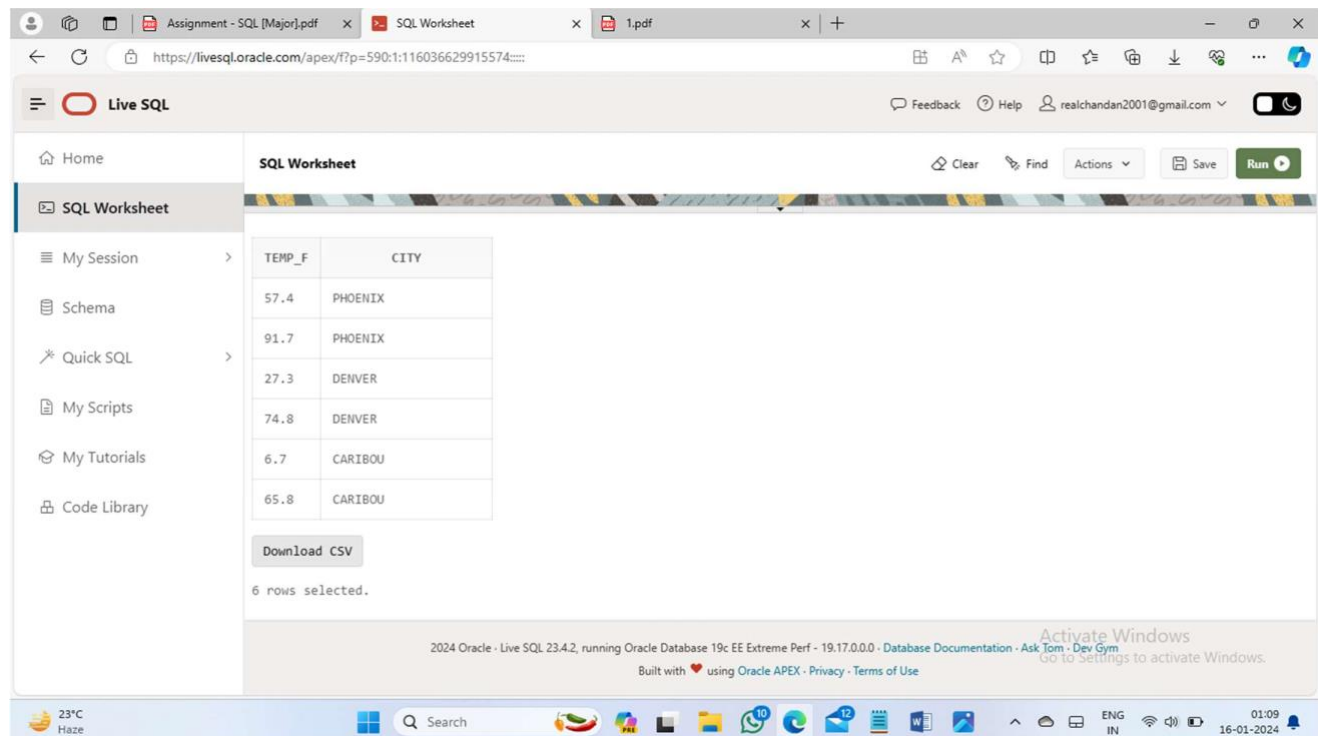
ANS :



The screenshot shows the Live SQL interface with the following SQL query entered in the worksheet:

```
1 SELECT
2 ST.TEMP_F , SC.CITY
3 FROM
4 STATS ST
5 INNER JOIN
6 STATION SC ON ST.ID = SC.ID;
```

The interface includes a sidebar with navigation options: Home, SQL Worksheet, My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The top bar shows the URL <https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::> and the user [realchandan2001@gmail.com](#). The bottom status bar indicates the system is running Oracle SQL 23.4.2 on Oracle Database 19c EE Extreme Perf.



The screenshot shows the same Live SQL interface, but now displaying the results of the query in a table:

TEMP_F	CITY
57.4	PHOENIX
91.7	PHOENIX
27.3	DENVER
74.8	DENVER
6.7	CARIBOU
65.8	CARIBOU

Below the table, there is a "Download CSV" button and a message stating "6 rows selected." The interface elements and status bar are consistent with the previous screenshot.

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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.

ANS :

The screenshot displays a web browser window with a SQL query editor and its results. The query is as follows:

```
SELECT city, month, rainfall, temp FROM STATS ORDER BY month, rainfall;
```

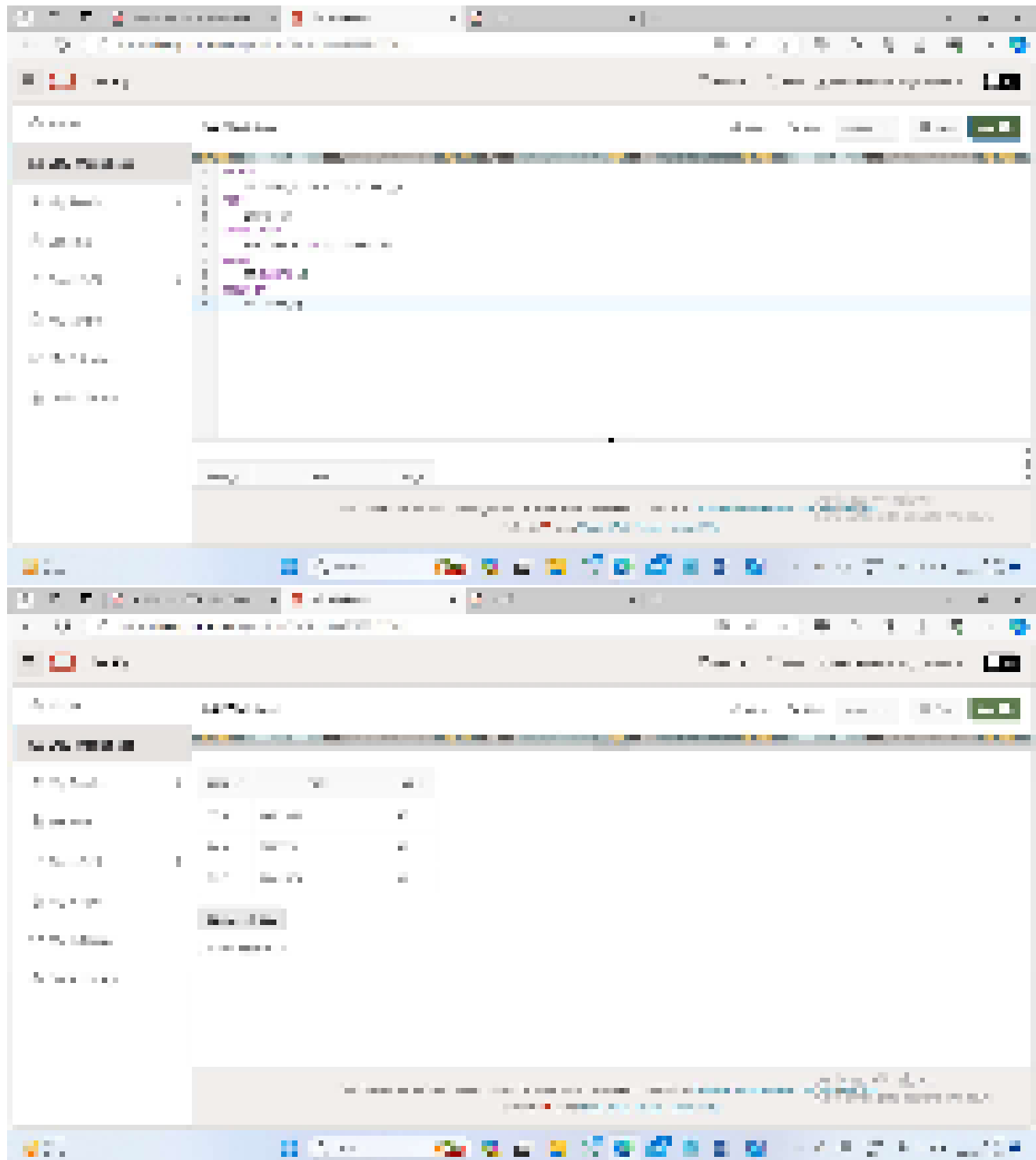
The results are shown in a table with the following data:

city	month	rainfall	temp
London	1	10	50°F
Paris	1	15	50°F
New York	1	20	50°F
Los Angeles	1	25	50°F
San Francisco	1	30	50°F
Chicago	1	35	50°F
Phoenix	1	40	50°F

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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.

ANS :



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

ANS :

The screenshot displays a web browser window with a SQL query editor and its results. The query is as follows:

```
SELECT city, MAX(temp) AS maxtemp, MIN(temp) AS mintemp, AVG(rain) AS avgrain
FROM weather
GROUP BY city;
```

The results table shows the following data:

city	maxtemp	mintemp	avgrain
London	15.0	5.0	10.0
Paris	16.0	6.0	11.0
New York	17.0	7.0	12.0
Tokyo	18.0	8.0	13.0

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

ANS :

The screenshot displays a web browser window with a SQL query editor and its results. The query is: `SELECT city, month, temp_c, rainfall FROM weather;` The results table shows data for various cities and months.

city	month	temp_c	rainfall
London	Jan	5.1	40.3
London	Feb	5.9	47.1
London	Mar	6.5	50.8
London	Apr	7.3	48.2
London	May	10.6	28.1
London	Jun	13.7	19.8
London	Jul	15.3	18.5
London	Aug	14.4	20.9
London	Sep	12.6	24.7
London	Oct	9.3	30.5
London	Nov	6.5	39.6
London	Dec	4.8	46.7

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

ANS :

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```
159 UPDATE STATS
160 SET RAIN_I = RAIN_I+ 0.01;
161
162
163
164
```

Below the code editor, the execution result is displayed as '6 row(s) updated.'. At the bottom of the interface, there is a footer with the text '2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym' and 'Built with ❤️ using Oracle APEX · Privacy · Terms of Use'. An 'Activate Windows' watermark is also visible in the bottom right corner of the application area. The Windows taskbar at the very bottom shows the system clock as 01:33 on 16-01-2024, along with various system icons and a search bar.

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

The screenshot displays the Oracle Live SQL web application interface. The browser's address bar shows the URL `https://livesql.oracle.com/apex/f?p=590:1:116036629915574:::`. The application header includes the 'Live SQL' logo, a user profile for 'realchandan2001@gmail.com', and navigation links for 'Feedback' and 'Help'. A left-hand sidebar contains a menu with options: 'Home', 'SQL Worksheet' (which is currently selected), 'My Session', 'Schema', 'Quick SQL', 'My Scripts', 'My Tutorials', and 'Code Library'. The main content area is titled 'SQL Worksheet' and features a code editor with the following SQL query:

```
1 UPDATE STATION ST
2 SET ST.TEMP_F = 74.9
3 WHERE ST.MONTH = 7 AND ST.ID IN (SELECT ID FROM STATION WHERE CITY = 'DENVER');
```

Below the code editor, the execution result is displayed as '1 row(s) updated.'. At the bottom of the interface, there is a footer with version information: '2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym'. It also includes a note 'Built with ❤️ using Oracle APEX - Privacy - Terms of Use' and a large 'Activate Windows' watermark. The Windows taskbar at the very bottom shows the date as '16-01-2024' and the time as '01:38'.