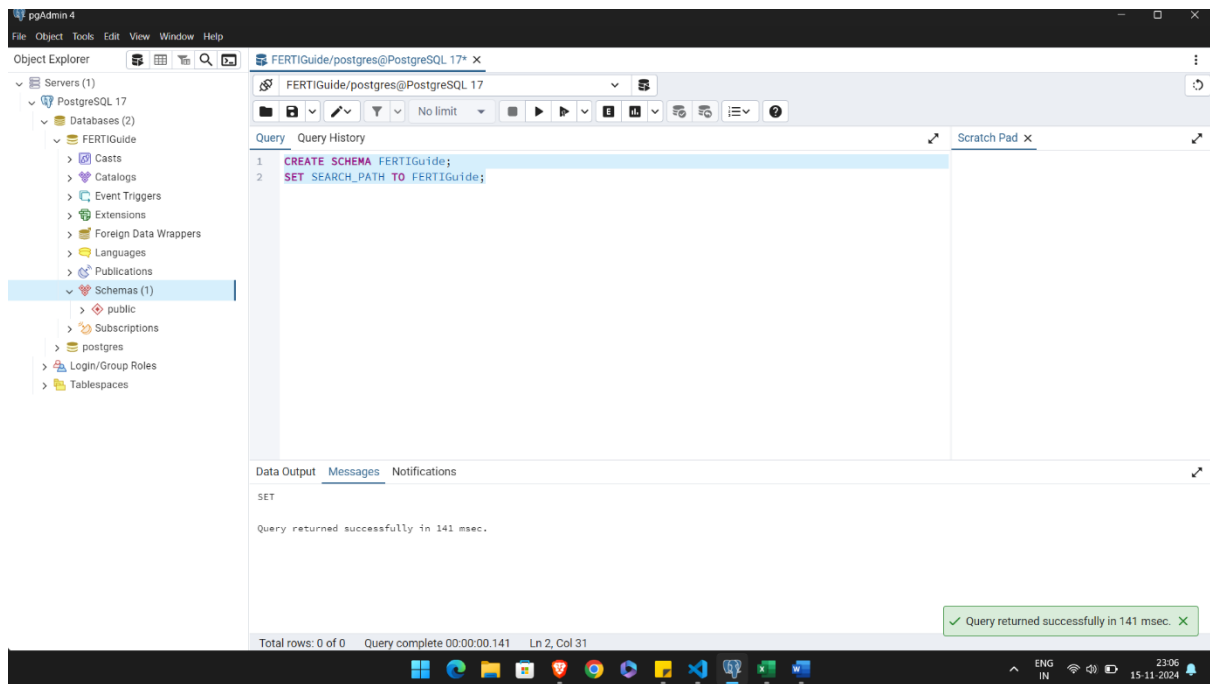
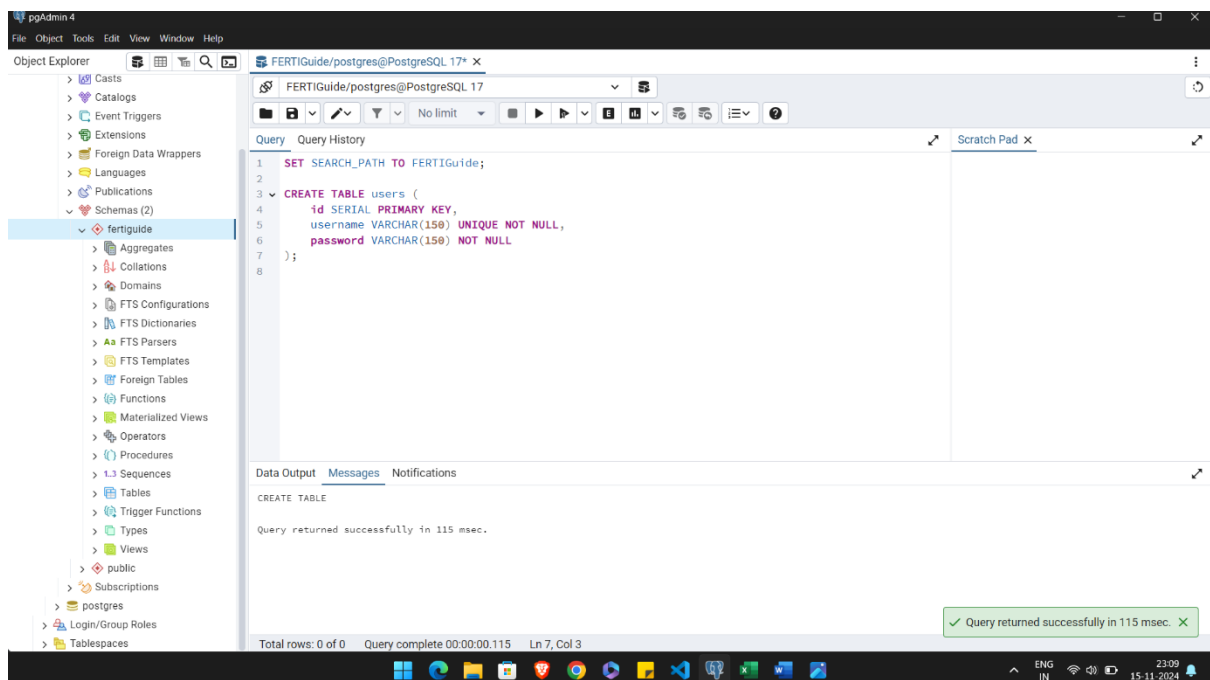


DDL Script for FERTIGuide

```
CREATE SCHEMA FERTIGuide;  
SET SEARCH_PATH TO FERTIGuide;
```

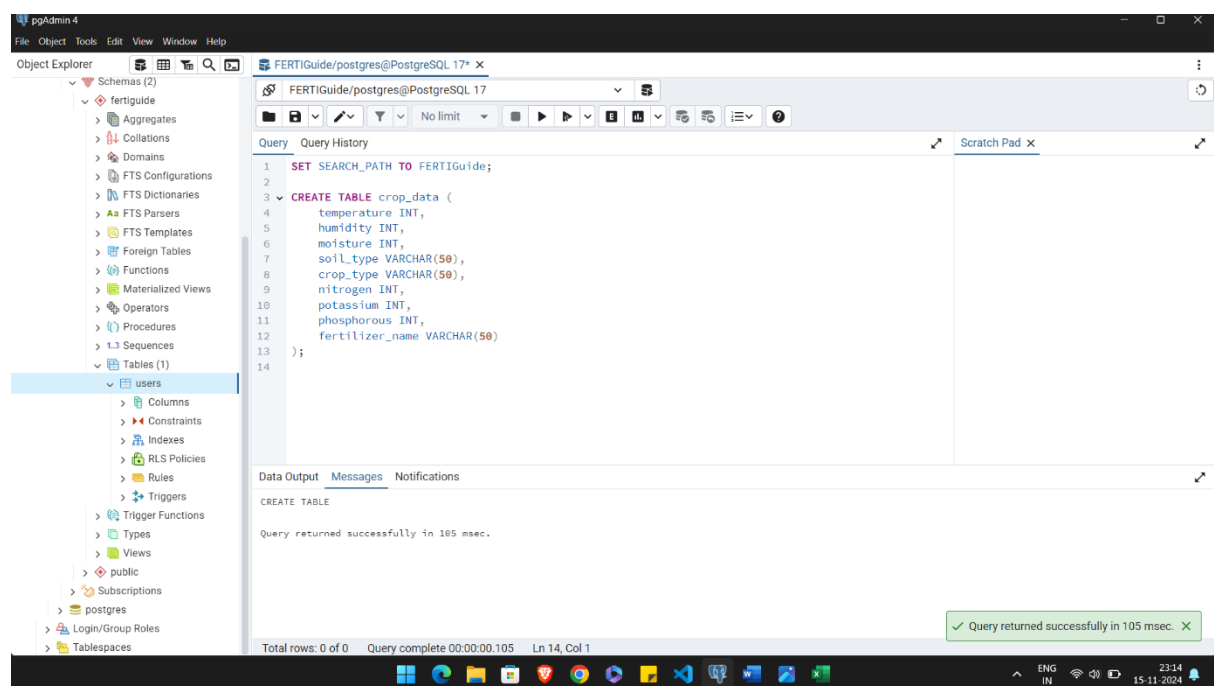


```
SET SEARCH_PATH TO FERTIGuide;  
CREATE TABLE users (  
    id SERIAL PRIMARY KEY,  
    username VARCHAR(150) UNIQUE NOT NULL,  
    password VARCHAR(150) NOT NULL  
);
```



SET SEARCH_PATH TO FERTIGuide;

```
CREATE TABLE crop_data (  
    temperature INT,  
    humidity INT,  
    moisture INT,  
    soil_type VARCHAR(50),  
    crop_type VARCHAR(50),  
    nitrogen INT,  
    potassium INT,  
    phosphorous INT,  
    fertilizer_name VARCHAR(50)  
);
```



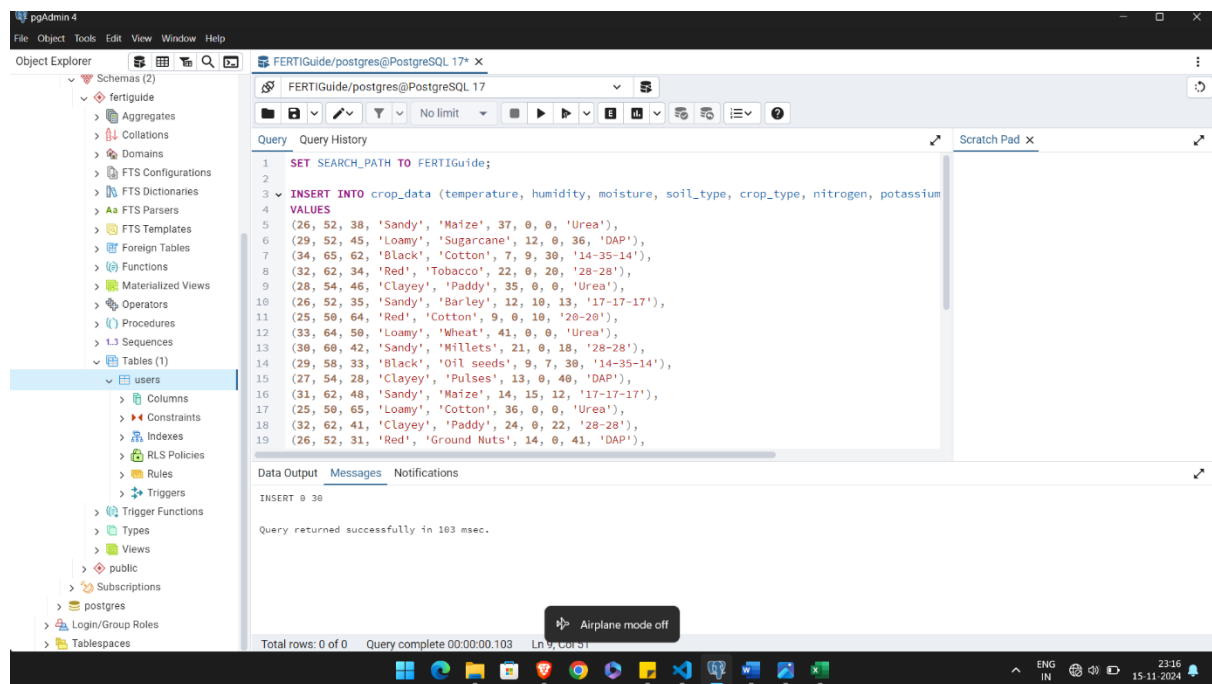
SET SEARCH_PATH TO FERTIGuide;

```
INSERT INTO crop_data (temperature, humidity, moisture, soil_type, crop_type, nitrogen, potassium,  
phosphorous, fertilizer_name)  
VALUES  
(26, 52, 38, 'Sandy', 'Maize', 37, 0, 0, 'Urea'),  
(29, 52, 45, 'Loamy', 'Sugarcane', 12, 0, 36, 'DAP'),  
(34, 65, 62, 'Black', 'Cotton', 7, 9, 30, '14-35-14'),  
(32, 62, 34, 'Red', 'Tobacco', 22, 0, 20, '28-28'),  
(28, 54, 46, 'Clayey', 'Paddy', 35, 0, 0, 'Urea'),  
(26, 52, 35, 'Sandy', 'Barley', 12, 10, 13, '17-17-17'),  
(25, 50, 64, 'Red', 'Cotton', 9, 0, 10, '20-20'),  
(33, 64, 50, 'Loamy', 'Wheat', 41, 0, 0, 'Urea'),  
(30, 60, 42, 'Sandy', 'Millets', 21, 0, 18, '28-28'),  
(29, 58, 33, 'Black', 'Oil seeds', 9, 7, 30, '14-35-14'),  
(27, 54, 28, 'Clayey', 'Pulses', 13, 0, 40, 'DAP'),
```

```

(31, 62, 48, 'Sandy', 'Maize', 14, 15, 12, '17-17-17'),
(25, 50, 65, 'Loamy', 'Cotton', 36, 0, 0, 'Urea'),
(32, 62, 41, 'Clayey', 'Paddy', 24, 0, 22, '28-28'),
(26, 52, 31, 'Red', 'Ground Nuts', 14, 0, 41, 'DAP'),
(31, 62, 49, 'Black', 'Sugarcane', 10, 13, 14, '17-17-17'),
(33, 64, 34, 'Clayey', 'Pulses', 38, 0, 0, 'Urea'),
(25, 50, 39, 'Sandy', 'Barley', 21, 0, 19, '28-28'),
(28, 54, 65, 'Black', 'Cotton', 39, 0, 0, 'Urea'),
(29, 58, 52, 'Loamy', 'Wheat', 13, 0, 36, 'DAP'),
(30, 60, 44, 'Sandy', 'Millets', 10, 0, 9, '20-20'),
(34, 65, 53, 'Loamy', 'Sugarcane', 12, 14, 12, '17-17-17'),
(35, 68, 33, 'Red', 'Tobacco', 11, 0, 37, 'DAP'),
(28, 54, 37, 'Black', 'Millets', 36, 0, 0, 'Urea'),
(33, 64, 39, 'Clayey', 'Paddy', 13, 0, 10, '20-20'),
(26, 52, 44, 'Sandy', 'Maize', 23, 0, 20, '28-28'),
(30, 60, 63, 'Red', 'Cotton', 9, 9, 29, '14-35-14'),
(32, 62, 30, 'Loamy', 'Sugarcane', 38, 0, 0, 'Urea'),
(37, 70, 32, 'Black', 'Oil seeds', 12, 0, 39, 'DAP'),
(26, 52, 36, 'Clayey', 'Pulses', 14, 0, 13, '20-20');

```



SET SEARCH_PATH TO FERTIGuide;

SELECT temperature,
humidity,
moisture,
soil_type,
crop_type,
nitrogen,
potassium,
phosphorous,

fertilizer_name
FROM crop_data;

The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, including the 'crop_data' table. The main pane shows a SQL query that sets the search path to 'FERTIGuide' and selects various columns from the 'crop_data' table. The results pane displays a table with 10 rows of data.

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT temperature,  
4 humidity,  
5 moisture,  
6 soil_type,  
7 crop_type,  
8 nitrogen,  
9 potassium,  
10 phosphorous,  
11 fertilizer_name  
12 FROM crop_data;
```

	temperature integer	humidity integer	moisture integer	soil_type character varying (50)	crop_type character varying (50)	nitrogen integer	potassium integer	phosphorous integer	fertilizer_name character varying (50)
1	26	52	38	Sandy	Maize	37	0	0	Urea
2	29	52	45	Loamy	Sugarcane	12	0	36	DAP
3	34	65	62	Black	Cotton	7	9	30	14-35-14
4	32	62	34	Red	Tabacco	22	0	20	28-28
5	28	54	46	Clayey	Paddy	35	0	0	Urea
6	26	52	35	Sandy	Barley	12	10	13	17-17-17
7	25	50	64	Red	Cotton	9	0	10	20-20
8	33	64	50	Loamy	Wheat	41	0	0	Urea
9	30	60	42	Sandy	Milletts	21	0	18	28-28
10	29	58	33	Black	Oil seeds	9	7	30	14-35-14

Total rows: 30 of 30 Query complete 00:00:00.162 Ln 12, Col 1

SIMPLE QUERIES:

SET SEARCH_PATH TO FERTIGuide;

SELECT * FROM crop_data
WHERE crop_type = 'Maize';

The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, including the 'crop_data' table. The main pane shows a SQL query that sets the search path to 'FERTIGuide' and selects all columns from the 'crop_data' table where the crop_type is 'Maize'. The results pane displays a table with 3 rows of data.

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT * FROM crop_data  
4 WHERE crop_type = 'Maize';
```

	temperature integer	humidity integer	moisture integer	soil_type character varying (50)	crop_type character varying (50)	nitrogen integer	potassium integer	phosphorous integer	fertilizer_name character varying (50)
1	26	52	38	Sandy	Maize	37	0	0	Urea
2	31	62	48	Sandy	Maize	14	15	12	17-17-17
3	26	52	44	Sandy	Maize	23	0	20	28-28

Total rows: 3 of 3 Query complete 00:00:00.155 Ln 4, Col 27

Successfully run. Total query runtime: 155 msec. 3 rows affected.

SET SEARCH_PATH TO FERTIGuide;

**SELECT * FROM crop_data
WHERE soil_type = 'Sandy';**

The screenshot shows the pgAdmin 4 interface with the 'crop_data' table selected in the Object Explorer. The SQL query window contains the following code:

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT * FROM crop_data  
4 WHERE soil_type = 'Sandy';  
5
```

The Data Output tab displays the results of the query, showing 7 rows of data. The status bar at the bottom indicates: "Total rows: 7 of 7 Query complete 00:00:00.134 Ln 5, Col 1". A green message box at the bottom right states: "Successfully run. Total query runtime: 134 msec. 7 rows affected."

	temperature integer	humidity integer	moisture integer	soil_type character varying (50)	crop_type character varying (50)	nitrogen integer	potassium integer	phosphorous integer	fertilizer_name character varying (50)
1	26	52	38	Sandy	Maize	37	0	0	Urea
2	26	52	35	Sandy	Barley	12	10	13	17-17-17
3	30	60	42	Sandy	Millet	21	0	18	28-28
4	31	62	48	Sandy	Maize	14	15	12	17-17-17
5	25	50	39	Sandy	Barley	21	0	19	28-28
6	30	60	44	Sandy	Millet	10	0	9	20-20
7	26	52	44	Sandy	Maize	23	0	20	28-28

SET SEARCH_PATH TO FERTIGuide;

SELECT AVG(temperature) AS avg_temperature FROM crop_data;

The screenshot shows the pgAdmin 4 interface with the 'crop_data' table selected in the Object Explorer. The SQL query window contains the following code:

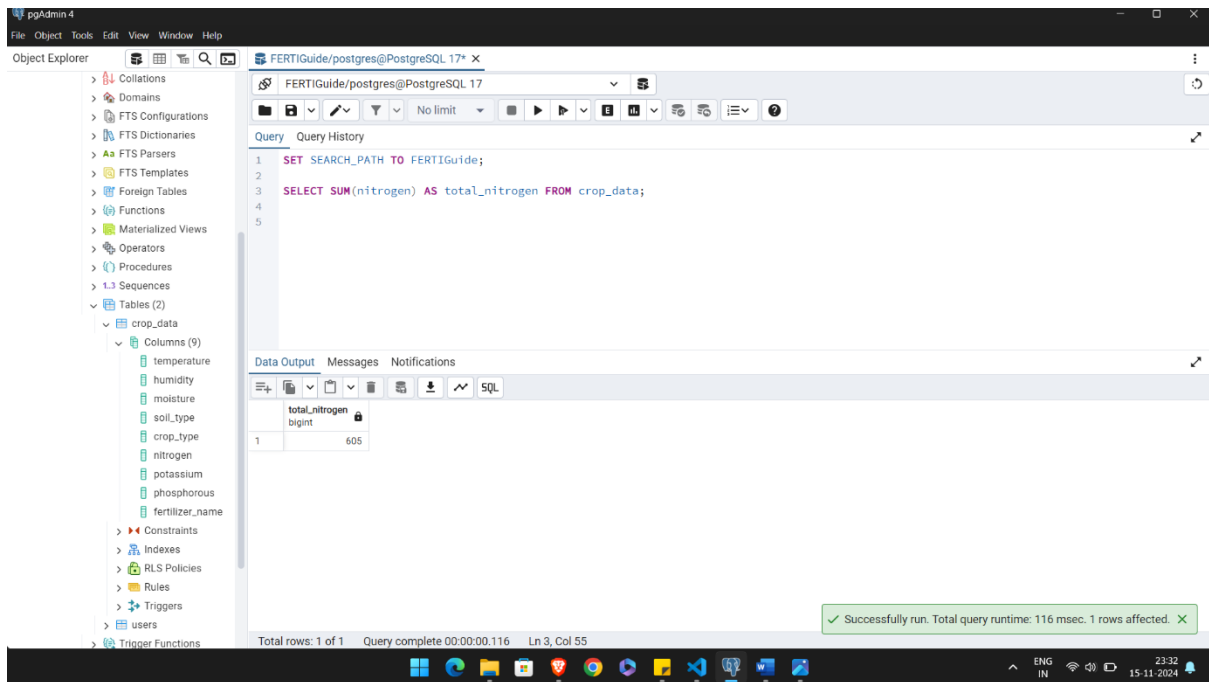
```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT AVG(temperature) AS avg_temperature FROM crop_data;  
4  
5
```

The Data Output tab displays the results of the query, showing 1 row of data. The status bar at the bottom indicates: "Total rows: 1 of 1 Query complete 00:00:00.125 Ln 4, Col 1". A green message box at the bottom right states: "Successfully run. Total query runtime: 125 msec. 1 rows affected."

	avg_temperature numeric
1	29.666666666666667

SET SEARCH_PATH TO FERTIGuide;

SELECT SUM(nitrogen) AS total_nitrogen FROM crop_data;



The screenshot shows the pgAdmin 4 interface with the following details:

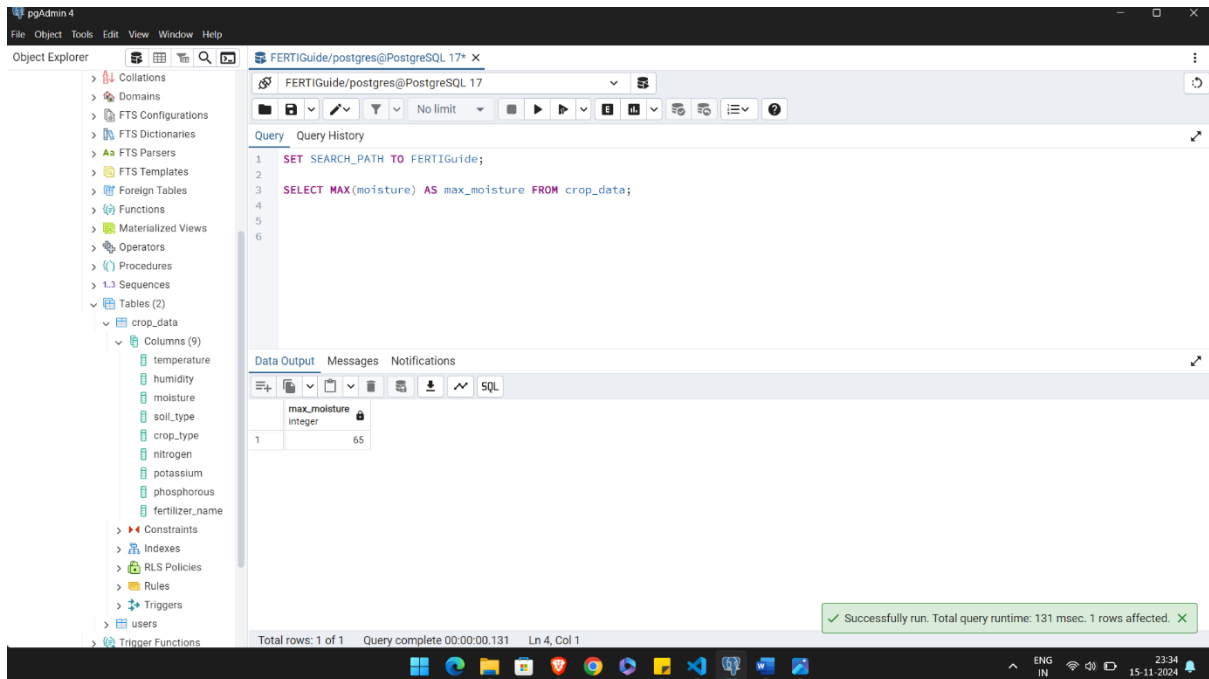
- Object Explorer:** The 'crop_data' table is selected under the 'Tables (2)' category.
- Query Editor:** Contains the SQL script:

```
1 SET SEARCH_PATH TO FERTIGuide;
2
3 SELECT SUM(nitrogen) AS total_nitrogen FROM crop_data;
4
5
```
- Data Output:** A table with one row showing the result of the query:

total_nitrogen
605
- Messages:** A green status bar at the bottom indicates: "Successfully run. Total query runtime: 116 msec. 1 rows affected."

SET SEARCH_PATH TO FERTIGuide;

SELECT MAX(moisture) AS max_moisture FROM crop_data;



The screenshot shows the pgAdmin 4 interface with the following details:

- Object Explorer:** The 'crop_data' table is selected under the 'Tables (2)' category.
- Query Editor:** Contains the SQL script:

```
1 SET SEARCH_PATH TO FERTIGuide;
2
3 SELECT MAX(moisture) AS max_moisture FROM crop_data;
4
5
6
```
- Data Output:** A table with one row showing the result of the query:

max_moisture
65
- Messages:** A green status bar at the bottom indicates: "Successfully run. Total query runtime: 131 msec. 1 rows affected."

COMPLEX QUERIES:

SET SEARCH_PATH TO FERTIGuide;

SELECT crop_type, fertilizer_name
FROM crop_data
WHERE nitrogen > 20;

The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, including the 'crop_data' table. The central pane shows the following SQL query:

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT crop_type, fertilizer_name  
4 FROM crop_data  
5 WHERE nitrogen > 20;  
6  
7  
8  
9
```

The bottom pane displays the results of the query in a table format:

crop_type	fertilizer_name
Maize	Urea
Tobacco	28-28
Paddy	Urea
Wheat	Urea
Millets	28-28
Cotton	Urea
Paddy	28-28
Pulses	Urea
Barley	28-28
Cotton	Urea

A status message at the bottom right indicates: "Successfully run. Total query runtime: 294 msec. 13 rows affected."

SET SEARCH_PATH TO FERTIGuide;

SELECT crop_type, soil_type, nitrogen
FROM crop_data
WHERE nitrogen < 20;

The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, including the 'crop_data' table. The central pane shows the following SQL query:

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT crop_type, soil_type, nitrogen  
4 FROM crop_data  
5 WHERE nitrogen < 20;  
6
```

The bottom pane displays the results of the query in a table format:

crop_type	soil_type	nitrogen
Sugarcane	Loamy	12
Cotton	Black	7
Barley	Sandy	12
Cotton	Red	9
Oil seeds	Black	9
Pulses	Clayey	18
Maize	Sandy	14
Ground Nuts	Red	14
Sugarcane	Black	10
Wheat	Loamy	13

A status message at the bottom right indicates: "Successfully run. Total query runtime: 294 msec. 17 rows affected."

SET SEARCH_PATH TO FERTIGuide;

**SELECT crop_type, AVG(nitrogen) AS avg_nitrogen
FROM crop_data
GROUP BY crop_type;**

The screenshot shows the pgAdmin 4 interface with the 'crop_data' table selected in the Object Explorer. The SQL query editor contains the following code:

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT crop_type, AVG(nitrogen) AS avg_nitrogen  
4 FROM crop_data  
5 GROUP BY crop_type;  
6  
7
```

The Data Output pane displays the results of the query:

crop_type	avg_nitrogen
Paddy	24.0000000000000000
Pulses	21.6666666666666667
Barley	16.5000000000000000
Sugarcane	18.0000000000000000
Wheat	27.0000000000000000
Ground Nuts	14.0000000000000000
Millet	22.3333333333333333
Tobacco	16.5000000000000000
Maize	24.6666666666666667
Oil seeds	10.5000000000000000

A status message at the bottom right indicates: "Successfully run. Total query runtime: 390 msec. 11 rows affected."

SET SEARCH_PATH TO FERTIGuide;

**SELECT crop_type, AVG(moisture) AS avg_moisture
FROM crop_data
GROUP BY crop_type
HAVING AVG(moisture) > 40;**

The screenshot shows the pgAdmin 4 interface with the 'crop_data' table selected in the Object Explorer. The SQL query editor contains the following code:

```
1 SET SEARCH_PATH TO FERTIGuide;  
2  
3 SELECT crop_type, AVG(moisture) AS avg_moisture  
4 FROM crop_data  
5 GROUP BY crop_type  
6 HAVING AVG(moisture) > 40;  
7  
8
```

The Data Output pane displays the results of the query:

crop_type	avg_moisture
Paddy	42.0000000000000000
Sugarcane	44.2500000000000000
Wheat	51.0000000000000000
Millet	41.0000000000000000
Maize	43.3333333333333333
Cotton	63.8000000000000000

A status message at the bottom right indicates: "Successfully run. Total query runtime: 244 msec. 6 rows affected."

SET SEARCH_PATH TO FERTiGuide;

SELECT crop_type, temperature
FROM crop_data
ORDER BY temperature DESC;

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, including the 'crop_data' table. The main pane shows a SQL query with the following lines:

```
1 SET SEARCH_PATH TO FERTiGuide;  
2  
3 SELECT crop_type, temperature  
4 FROM crop_data  
5 ORDER BY temperature DESC;  
6  
7  
8
```

Below the query editor, the 'Data Output' tab displays the results of the query in a table format:

	crop_type character varying (50)	temperature integer
1	Oil seeds	37
2	Tobacco	35
3	Sugarcane	34
4	Cotton	34
5	Wheat	33
6	Pulses	33
7	Paddy	33
8	Tobacco	32
9	Sugarcane	32
10	Paddy	32

A green status bar at the bottom right indicates: 'Successfully run. Total query runtime: 235 msec. 30 rows affected.'

The bottom of the screen shows the Windows taskbar with various application icons and the system clock displaying 23:41 on 15-11-2024.