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Assignment SQL 2.1

Open the usda database and get a query window for that database. Make sure you are in the right database by looking at the text at the top of the query window. It should reference usda and not northwind where we have been working. Run the following queries.

1. Select all records from data_src which came from the journal named 'Food Chemistry'

```
1 SELECT * FROM data_src WHERE journal = 'Food Chemistry';
```

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the 'Object Explorer' with the 'usda/postgres@PostgreSQL 16' database selected. The 'Query' window is active, showing the SQL query: `SELECT * FROM data_src WHERE journal = 'Food Chemistry';`. The 'Data Output' tab is selected, displaying the results of the query in a table with 16 rows. The table has three columns: `data_src_id`, `authors`, and `title`. The results show various food items and their descriptions, such as 'Effect of boiling on the carbohydrate constituents of some non-leafy vegetables' and 'Dietary fiber content and composition of different forms of fruits'.

data_src_id	authors	title
1	O. Longe	Effect of boiling on the carbohydrate constituents of some non-leafy vegetables
2	J. Marlett, N. Vollendorf	Dietary fiber content and composition of different forms of fruits
3	K. Bhaskarachary, D.S. Sankar Rao, Y.G. Deosthale, Vinodini Red...	Carotene content of some common and less familiar foods of plant origin.
4	D.J. Hart, K.J. Scott	Development and evaluation of an HPLC method for the analysis of carotenoids in foods, and the measurement of the car...
5	A.J. Speck, S. Speck-Saichua, W.H. P. Schreurs	Total carotenoid and B-carotene contents of Thai vegetables and the effect of processing.
6	E-Siong Tee, Chin-Lam Lim	Carotenoid composition and content of Malaysian vegetables and fruits by the AOAC and HPLC methods.
7	E. Jakob, I. Elmadafa	Application of a Simplified HPLC Assay for the Determination of Phyloquinone (Vitamin K) in Animal and Plant Food Item
8	M.J. Shearer, C. Bolton-Smith	The UK Food Data-Base for Vitamin K and Why We Need It

2. Find all the food descriptions (food_des) records for manufacturer Kellogg, Co. (must include punctuation for exact match)

```
Query Query History
1 SELECT *
2 FROM food_des
3 WHERE manufacname = 'Kellogg, Co.';
```

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, with the 'manufacname' column highlighted under the 'food_des' table. The main query window shows the following SQL query:

```
1 SELECT *
2 FROM food_des
3 WHERE manufacname = 'Kellogg, Co.';
```

The Data Output pane displays the results of the query as a table with 8 rows and 4 columns: 'ndb_no', 'fdgrp_cd', 'long_desc', and 'shrt_desc'. The results are as follows:

ndb_no	fdgrp_cd	long_desc	shrt_desc
08001	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S ALL-BRAN Original	CEREALS RTE,KELLOGG,KELLOGG'S ALL-BRAN ORIGINAL
08003	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S APPLE JACKS	CEREALS RTE,KELLOGG,KELLOGG'S APPL JACKS
08005	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S ALL-BRAN BRAN BUDS	CEREALS RTE,KELLOGG,KELLOGG'S ALL-BRAN BRAN BUDS
08014	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S COCOA KRISPIES	CEREALS RTE,KELLOGG,KELLOGG'S COCOA KRISPIES
08020	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S Corn Flakes	CEREALS RTE,KELLOGG,KELLOGG'S CORN FLAKES
08023	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S CRACKLIN' OAT BRAN	CEREALS RTE,KELLOGG,KELLOGG'S CRACKLIN' OAT BRAN
08028	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S Complete Wheat Bran Flakes	CEREALS RTE,KELLOGG,KELLOGG'S COMPLETE WHEAT BRAN FLAKES
08030	0800	Cereals ready-to-eat, KELLOGG, KELLOGG'S FROOT LOOPS	CEREALS RTE,KELLOGG,KELLOGG'S FROOT LOOPS

Total rows: 108 of 108 Query complete 00:00:00.091 Ln 3, Col 18

3. Find the number of records in data sources (data_src) that were published after year 2000 (it is numeric field)

Query Query History

```
1 SELECT COUNT(*)
2 FROM data_src
3 WHERE year > 2000;
```

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, with the 'data_src' table highlighted. The main query window shows the following SQL query:

```
1 SELECT COUNT(*)
2 FROM data_src
3 WHERE year > 2000;
```

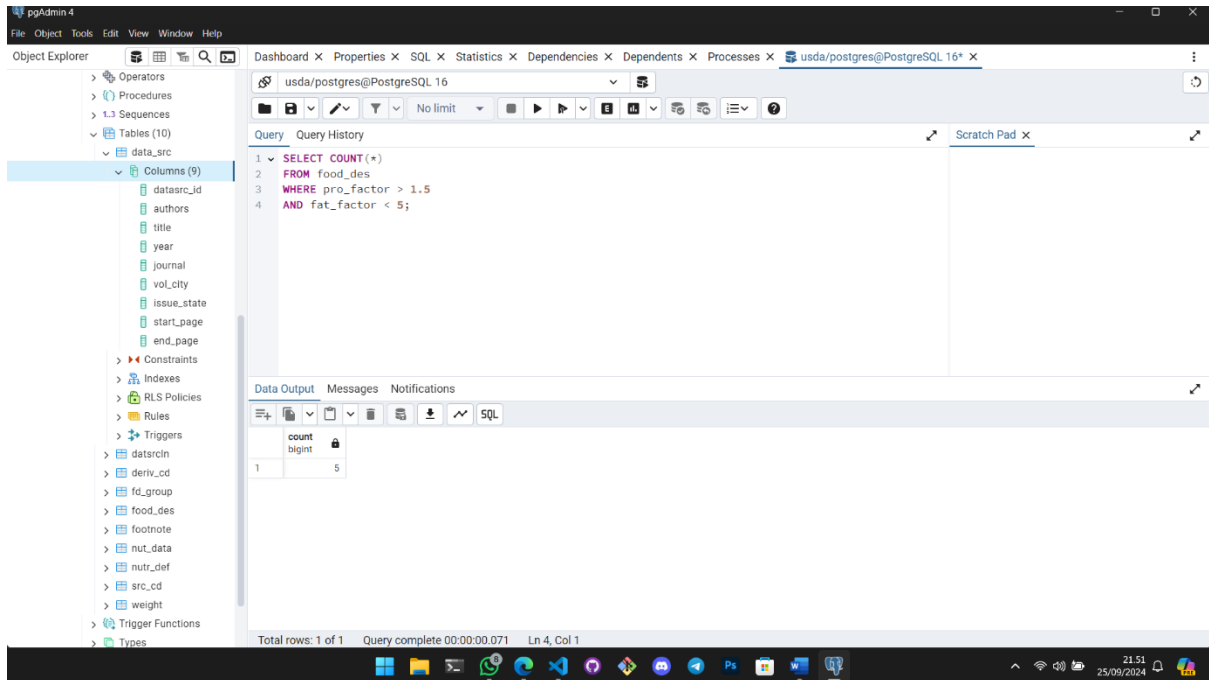
The Data Output pane displays the result of the query as a table with 1 row and 1 column: 'count bigint'. The result is as follows:

count
87

Total rows: 1 of 1 Query complete 00:00:00.071 Ln 3, Col 7

4. Find the number of records in food description table that have pro_factor greater than 1.5 and fat_factor less than 5 Practice What You've Learned

```
Query Query History
1 SELECT COUNT(*)
2 FROM food_des
3 WHERE pro_factor > 1.5
4 AND fat_factor < 5;
```



5. Find the record in data source table that is from year 1990 and the journal Cereal Foods World

```
Query Query History
1 SELECT *
2 FROM data_src
3 WHERE year = 1990
4 AND journal = 'Cereal Foods World';
```

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer shows the database structure, with the 'data_src' table selected under 'Columns (9)'. The main pane displays a SQL query:

```
1 SELECT *
2 FROM data_src
3 WHERE year = 1990
4 AND journal = 'Cereal Foods World';
```

The 'Data Output' pane shows the results of the query:

	data_src_id [PK] character (6)	authors text	title text	year integer	journal text	vol_city text	issue_state text	start_page text	end_pag text
1	D3766	V Chaudhary, F Weber	Barley bran flour evaluated as dietary fiber ingredient in wheat bre...	1990	Cereal Foods World	35	6	560	562

The status bar at the bottom indicates 'Total rows: 1 of 1' and 'Query complete 00:00:00.115'.

6. Select the records in nutr_def table (nutrition definitions) that have units of kj or kcal

Query Query History

```
1 SELECT *
2 FROM nutr_def
3 WHERE units IN ('kj', 'kcal');
```

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer shows the database structure, with the 'nutr_def' table selected under 'Columns (9)'. The main pane displays a SQL query:

```
1 SELECT *
2 FROM nutr_def
3 WHERE units IN ('kj', 'kcal');
```

The 'Data Output' pane shows the results of the query:

	nutr_no [PK] character (3)	units text	tagname text	nutrdesc text	num_dec smallint	sr_order integer
1	208	kcal	ENERC_KCAL	Energy	0	300
2	268	kj	ENERC_KJ	Energy	0	400

The status bar at the bottom indicates 'Total rows: 2 of 2' and 'Query complete 00:00:00.133'.

7. Select all records from data source table (data_src) that where from the year 2000 or the journal Food Chemistry

Query Query History

```
1 SELECT *
2 FROM data_src
3 WHERE year = 2000 OR journal = 'Food Chemistry';
4
```

The screenshot shows the pgAdmin 4 interface. The left pane displays the database structure, including the 'data_src' table with columns like 'datasrc_id', 'authors', 'title', 'year', 'journal', 'vol_city', 'issue_state', 'start_page', and 'end_page'. The main pane shows the SQL query editor with the following query:

```
1 SELECT *
2 FROM data_src
3 WHERE year = 2000 OR journal = 'Food Chemistry';
4
```

The 'Data Output' pane at the bottom displays the results of the query, showing 8 rows of data. The status bar at the bottom indicates 'Total rows: 32 of 32' and 'Query complete 00:00:00.125'.

datasrc_id	authors	title
D1417	O. Longe	Effect of boiling on the carbohydrate constituents of some non-leafy vegetables
D3780	J. Marlett, N. Vollendorf	Dietary fiber content and composition of different forms of fruits
D3863	K. Bhaskarachary, D.S. Sankar Rao, Y.G. Deosthale, Vinodini Reddy	Carotene content of some common and less familiar foods of plant origin
D3924	D.J. Hart, K.J. Scott	Development and evaluation of an HPLC method for the analysis of carotenoids in foods, and the measur
D3964	A.J. Speek, S. Speek-Saichua, W.H. P. Schreurs	Total carotenoid and B-carotene contents of Thai vegetables and the effect of processing
D3969	E-Siong Tee, Chin-Lam Lim	Carotenoid composition and content of Malaysian vegetables and fruits by the AOAC and HPLC methods
D4043	E. Jakob, I. Elmadafa	Application of a Simplified HPLC Assay for the Determination of Phylloquinone (Vitamin K) in Animal and
D4050	M.J. Shearer, C. Bolton-Smith	The UK Food D

8. Find all the records in data sources that where between 1990 and 2000 and either 'J. Food Protection' or 'Food Chemistry'

```
SELECT *
FROM data_src
WHERE year BETWEEN 1990
AND 2000 AND journal
IN ('J. Food Protection', 'Food Chemistry');
```

pgAdmin 4

Object Explorer

- Operators
- Procedures
- Sequences
- Tables (10)
 - data_src
 - Columns (9)
 - data_src_id
 - authors
 - title
 - year
 - journal
 - vol_city
 - issue_state
 - start_page
 - end_page
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - data_srcn
 - deriv_cd
 - fd_group
 - food_des
 - footnote
 - nut_data
 - nutr_def
 - src_cd
 - weight
- Trigger Functions
- Types

Dashboard | Properties | SQL | Statistics | Dependencies | Dependents | Processes | usda/postgres@PostgreSQL 16*

Query Query History

```

1 SELECT *
2 FROM data_src
3 WHERE year BETWEEN 1990
4 AND 2000 AND journal
5 IN ('J. Food Protection', 'Food Chemistry');
6

```

Execute script (F5)

Data Output Messages Notifications

	data_src_id	authors	title
1	D3780	J Marlett, N Vollendorf	Dietary fiber content and composition of different forms of fruits
2	D3863	K. Bhaskarachary, D.S. Sankar Rao, Y.G. Deosthale, Vinodini Red...	Carotene content of some common and less familiar foods of plant origin.
3	D3869	B.H. Chen	Studies on the stability of carotenoids in garland chrysanthemums (Ipomoea spp.) as affected by microwave and convent
4	D3870	B.H. Chen, J.R. Chuang, J.H. Lin, P. Chiu	Quantification of provitamin A compounds in Chinese vegetables by high-performance liquid chromatography
5	D3924	D.J. Hart, K.J. Scott	Development and evaluation of an HPLC method for the analysis of carotenoids in foods, and the measurement of the car
6	D3969	E-Siong Tee, Chin-Lam Lim	Carotenoid composition and content of Malaysian vegetables and fruits by the AOAC and HPLC methods.
7	D4043	E. Jakob, I. Elmadafa	Application of a Simplified HPLC Assay for the Determination of Phylloquinone (Vitamin K) in Animal and Plant Food Item
8	D4050	M.J. Shearer, C. Bolton-Smith	The UK Food Data-Base for Vit

Total rows: 14 of 14 Query complete 00:00:00.100 Ln 5, Col 1

Successfully run. Total query runtime: 100 msec. 14 rows affected.

9. Use BETWEEN syntax to find number of weight records that weight between 50 and 75 grams (gm_wgt)

pgAdmin 4

Object Explorer

- Operators
- Procedures
- Sequences
- Tables (10)
 - data_src
 - data_srcn
 - deriv_cd
 - fd_group
 - food_des
 - footnote
 - nut_data
 - nutr_def
 - src_cd
 - weight
 - Columns (7)
 - ndb_no
 - seq
 - amount
 - msre_desc
 - gm_wgt
 - num_data_pts
 - std_dev
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
- Trigger Functions
- Types
- Views

Dashboard | Properties | SQL | Statistics | Dependencies | Dependents | Processes | usda/postgres@PostgreSQL 16*

Query Query History

```

1 SELECT COUNT(*) FROM weight WHERE
2 weight BETWEEN 50 AND 75;

```

Execute script (F5)

Data Output Messages Notifications

	count
1	933

Total rows: 1 of 1 Query complete 00:00:00.103 Ln 1, Col 60

Successfully run. Total query runtime: 103 msec. 1 rows affected.

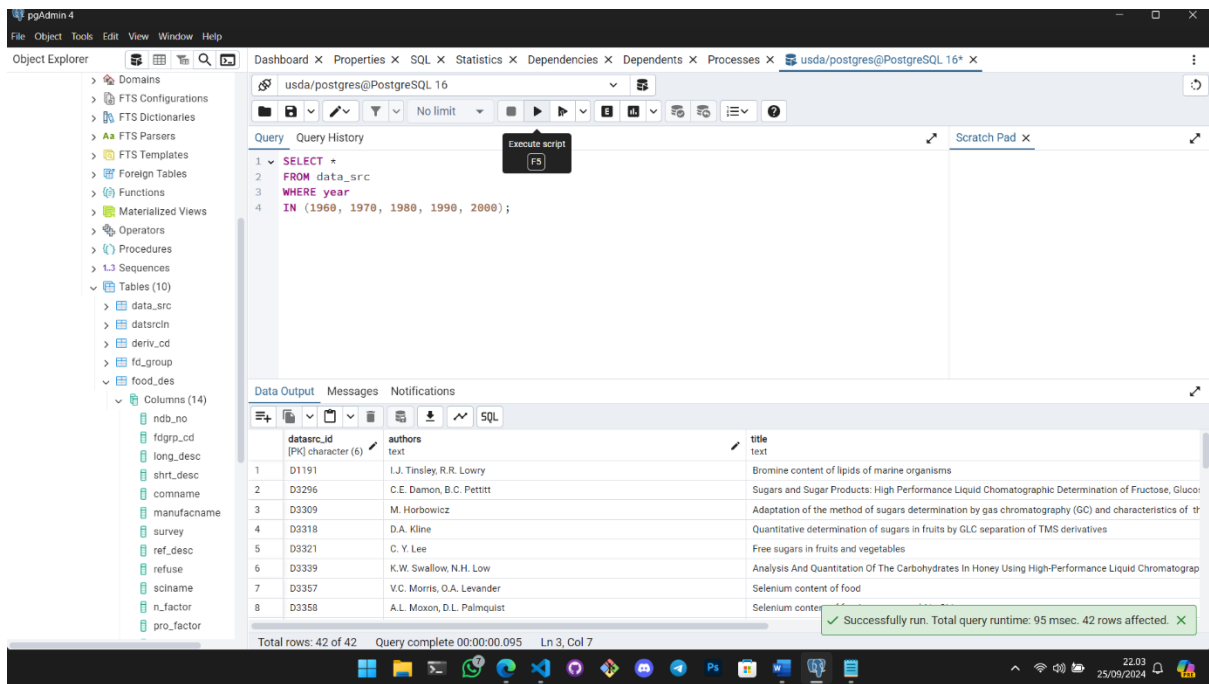
10. Select all records from the data source table that were published in years 1960, 1970, 1980, 1990 and 2000. Use the IN syntax

Query Query History

```

1 SELECT *
2 FROM data_src
3 WHERE year
4 IN (1960, 1970, 1980, 1990, 2000);

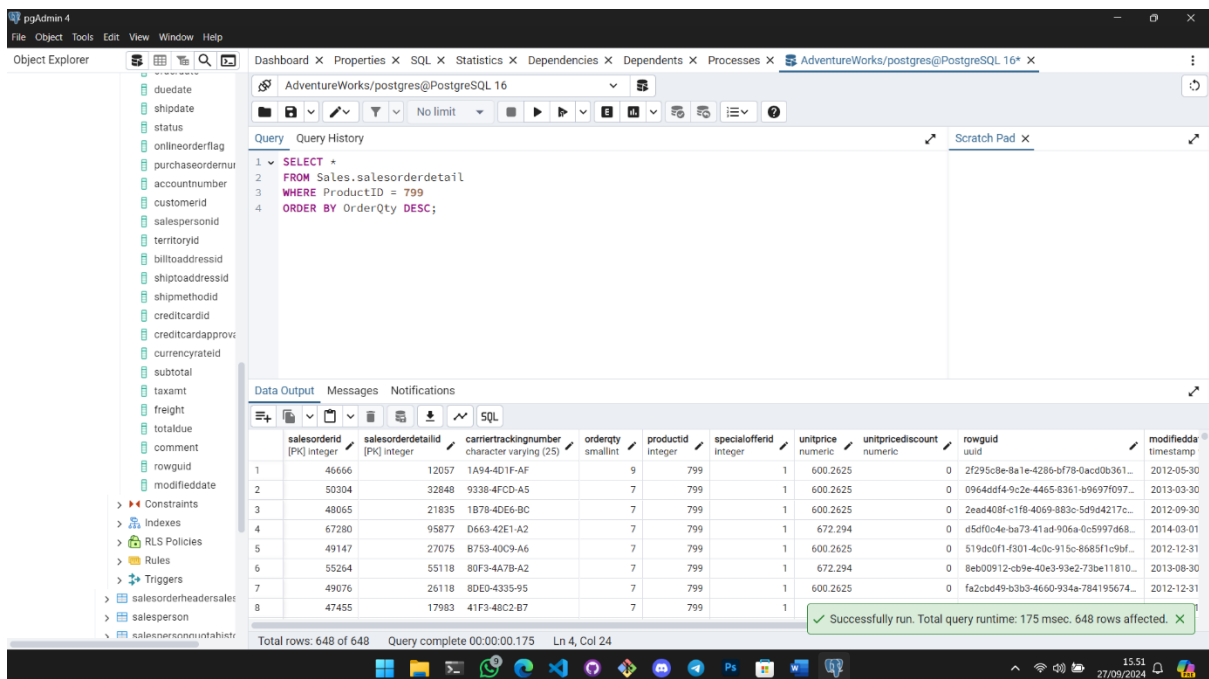
```



Assignment SQL 2.2

Open the AdventureWorks database and get a query window for that database. Make sure you are in the right database by looking at the text at the top of the query window. Run the following queries.

1. Find all the salesorderdetail records to productid 799 and order them by largest orderqty to smallest



2. What is the largest discount percentage offered in the specialoffer table

The screenshot shows the pgAdmin 4 interface with the 'AdventureWorks/postgres@PostgreSQL 16' database selected. The 'Object Explorer' on the left shows the 'sales' schema expanded. The 'Query' tab is active, displaying the following SQL query:

```
1 SELECT MAX(DiscountPct) AS LargestDiscountPct
2 FROM Sales.SpecialOffer;
3
```

The 'Data Output' tab shows the result of the query:

largestdiscountpct	numeric
1	0.5

A status bar at the bottom indicates: 'Successfully run. Total query runtime: 93 msec. 1 rows affected.'

3. Find the sum of scrappedqty from the workorder table for productid 529

The screenshot shows the pgAdmin 4 interface with the 'AdventureWorks/postgres@PostgreSQL 16' database selected. The 'Object Explorer' on the left shows the 'Production' schema expanded. The 'Query' tab is active, displaying the following SQL query:

```
1 SELECT SUM(ScrappedQty) AS TotalScrappedQty
2 FROM Production.WorkOrder
3 WHERE ProductID = 529;
4
```

The 'Data Output' tab shows the result of the query:

totalscrappedqty	bigint
1	422

A status bar at the bottom indicates: 'Successfully run. Total query runtime: 143 msec. 1 rows affected.'

4. Find all vendor names that with a name that starts with letter G

The screenshot shows the pgAdmin 4 interface. The Object Explorer on the left shows the database structure, with the 'Columns' of the 'Purchasing.Vendor' table selected. The SQL query editor contains the following query:

```
1 SELECT Name
2 FROM Purchasing.Vendor
3 WHERE Name LIKE 't%';
4
```

The Data Output pane shows the results of the query:

name
Greenwood Athletic Company
Gardner Touring Cycles
G & K Bicycle Corp.
Green Lake Bike Company
GMA Ski & Bike

A status bar at the bottom indicates: "Successfully run. Total query runtime: 131 msec. 5 rows affected."

5. Search the person table for every firstname that has t as a second letter

The screenshot shows the pgAdmin 4 interface. The Object Explorer on the left shows the database structure, with the 'Columns' of the 'Person.Person' table selected. The SQL query editor contains the following query:

```
1 SELECT FirstName
2 FROM Person.Person
3 WHERE FirstName LIKE '_t%';
4
```

The Data Output pane shows the results of the query:

firstname
Steve
Steven
Stefen
Stuart
Stuart
Stephanie
Stephen
Stephen
Stanley

A status bar at the bottom indicates: "Successfully run. Total query runtime: 132 msec. 288 rows affected."

6. Return the first 20 records from emailaddress table

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- Functions
- Materialized Views
- Operators
- Procedures
- Sequences
- Tables (6)
 - department
 - employee
 - employeedepartmenth
 - employeeepayhistory
 - jobcandidate
 - shift
- Trigger Functions
- Types
- Views
- pe
 - person
 - Aggregates
 - Collations
 - Domains
 - FTS Configurations
 - FTS Dictionaries
 - FTS Parsers
 - FTS Templates
 - Foreign Tables
 - Materialized Views
 - Operators
 - Procedures
 - Sequences

AdventureWorks/postgres@PostgreSQL 16

Query

```

1 SELECT *
2 FROM person.emailaddress
3 LIMIT 20;

```

Data Output

	businessentityid [PK] integer	emailaddressid [PK] integer	emailaddress character varying (50)	rowguid uuid	modifieddate timestamp without time zone
1	1	1	ken0@adventure-works.com	8a1901e4-671b-431a-871c-eadb2942e...	2009-01-07 00:00:00
2	2	2	terri0@adventure-works.com	b5ff9ef6-72a2-4f97-830b-f338f6d4162	2008-01-24 00:00:00
3	3	3	roberto0@adventure-works.com	c8a51084-1c03-4c58-a8b3-55854ae7c4...	2007-11-04 00:00:00
4	4	4	rob0@adventure-works.com	17703ed1-0031-4b4a-afd2-77487a556b...	2007-11-28 00:00:00
5	5	5	gallo@adventure-works.com	e76d2ea3-08e5-409c-bbe2-5dd1cdf89a...	2007-12-30 00:00:00
6	6	6	josef0@adventure-works.com	a9c4093e-4f4a-4cad-bbb4-2c4e920bac...	2013-12-16 00:00:00
7	7	7	dylan0@adventure-works.com	70429de4-c3bf-4f19-a00e-e976c8017fb3	2009-02-01 00:00:00
8	8	8	diane1@adventure-works.com	37102a87-058d-49f8-a20d-965738b0a71f	
9	9	9	cira0@adventure-works.com	f888a16d-0c33-459e-9d72-d16ae0bb1f...	

Total rows: 20 of 20 Query complete 00:00:00.109 Ln 2, Col 13

Successfully run. Total query runtime: 109 msec. 20 rows affected.

7. How many person records have an additionalcontactinfo field that has a value

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- FTS Parsers
- FTS Templates
- Foreign Tables
- Functions
- Materialized Views
- Operators
- Procedures
- Sequences
- Tables (19)
 - countryregioncurrency
 - creditcard
 - currency
 - currencyrate
 - customer
 - personcreditcard
 - salesorderdetail
 - salesorderheader
 - Columns (25)
 - salesorderid
 - revisionnumber
 - orderdate
 - duedate
 - shipdate
 - status
 - onlineorderflag
 - purchaseordernum
 - accountnumber
 - customerid
 - salespersonid
 - territoryid

AdventureWorks/postgres@PostgreSQL 16

Query

```

1 SELECT COUNT(*) AS CountWithAdditionalContactInfo
2 FROM Person.Person
3 WHERE AdditionalContactInfo IS NOT NULL;
4

```

Data Output

	countwithadditionalcontactinfo bigint
1	10

Total rows: 1 of 1 Query complete 00:00:00.104 Ln 4, Col 1

Successfully run. Total query runtime: 104 msec. 1 rows affected.

Assignment SQL 2.3

Open the AdventureWorks database and get a query window for that database. Make sure you are in the right database by looking at the text at the top of the query window.

Run the following queries.

There is more than one way to write most of these queries, so check to make sure the results are the same versus did you get the exact format I chose.

1. Join (with inner join) together person, personphone, businessentity and phonenumtype in the persons schema. Return first name, middle name, last name, phone number and the name of the phone number type (home, office, etc.) Order by business entity id descending.

```
Query Query History
1 SELECT p.FirstName, p.MiddleName, p.LastName, pp.PhoneNumber, pnt.Name AS PhoneNumberType
2 FROM Person.Person p
3 INNER JOIN Person.PersonPhone pp ON p.BusinessEntityID = pp.BusinessEntityID
4 INNER JOIN Person.BusinessEntity be ON p.BusinessEntityID = be.BusinessEntityID
5 INNER JOIN Person.PhoneNumberType pnt ON pp.PhoneNumberTypeID = pnt.PhoneNumberTypeID
6 ORDER BY p.BusinessEntityID DESC;
7
```

The screenshot shows the pgAdmin 4 interface with the AdventureWorks database selected. The query window displays the SQL query, and the Data Output pane shows the results of the query. The results are ordered by BusinessEntityID in descending order.

	firstname character varying (50)	middlename character varying (50)	lastname character varying (50)	phoneNumber character varying (25)	phonenumbertype character varying (50)
1	Crystal	[null]	Hu	1 (11) 500 555-0126	Home
2	Crystal	[null]	Zheng	1 (11) 500 555-0171	Home
3	Crystal	S	He	813-555-0148	Home
4	Isabella	F	Richardson	910-555-0166	Cell
5	Crystal	[null]	Guo	1 (11) 500 555-0171	Cell
6	Crystal	J	Liang	1 (11) 500 555-0120	Home
7	Isabella	[null]	Bailey	808-555-0174	Cell
8	Crystal	J	Gao	1 (11) 500 555-0136	Cell
9	Crystal	C	Zhu	1 (11) 500 555-0180	Home

Total rows: 1000 of 19972 Query complete 00:00:00.125 Ln 7, Col 1

Successfully run. Total query runtime: 125 msec. 19972 rows affected.

2. Join product and productreview in the schema table. Include every record from product and any reviews they have. Return the product name, review rating and comments. Order by rating in ascending order.

```
SELECT p.Name AS ProductName, pr.Rating, pr.Comments
FROM Production.Product p
LEFT JOIN Production.ProductReview pr ON p.ProductID = pr.ProductID
ORDER BY pr.Rating ASC;
```

The screenshot shows pgAdmin 4 with a SQL query executed against the AdventureWorks database. The query is:

```

1 SELECT p.Name AS ProductName, pr.Rating, pr.Comments
2 FROM Production.Product p
3 LEFT JOIN Production.ProductReview pr ON p.ProductID = pr.ProductID
4 ORDER BY pr.Rating ASC;
5

```

The Data Output tab shows the following results:

productname	rating	comments
HL Mountain Pedal	4	Maybe it's just because I'm new to mountain biking, but I had a terrible time getting use
HL Mountain Pedal	4	A little on the heavy side, but overall the entry/exit is easy in all conditions. I've used these pedals for
Mountain Bike Socks, M	5	I can't believe I'm singing the praises of a pair of socks, but I just came back from a grueling
Road-550-W Yellow, 40	5	The Road-550-W from Adventure Works Cycles is everything it's advertised to be. Finally, a quality bike that
Blade	[null]	[null]
LL Crankarm	[null]	[null]
ML Crankarm	[null]	[null]
HL Crankarm	[null]	[null]

Total rows: 505 of 505 Query complete 00:00:00.111 Ln 5, Col 1

3. Use a right join to combine workorder and product from production schema to bring back all products and any work orders they have. Include the product name and workorder orderqty and scrappedqty fields. Order by productid ascending.

```

SELECT p.Name AS ProductName, wo.OrderQty, wo.ScrapedQty
FROM Production.WorkOrder wo
RIGHT JOIN Production.Product p ON wo.ProductID = p.ProductID
ORDER BY p.ProductID ASC;

```

The screenshot shows pgAdmin 4 with a SQL query executed against the AdventureWorks database. The query is:

```

1 SELECT p.Name AS ProductName, wo.OrderQty, wo.ScrapedQty
2 FROM Production.WorkOrder wo
3 RIGHT JOIN Production.Product p ON wo.ProductID = p.ProductID
4 ORDER BY p.ProductID ASC;
5

```

The Data Output tab shows the following results:

productname	orderqty	scrappedqty
Adjustable Race	[null]	[null]
Bearing Ball	[null]	[null]
BB Ball Bearing	220	6
BB Ball Bearing	280	0
BB Ball Bearing	290	0
BB Ball Bearing	400	0
BB Ball Bearing	380	11
BB Ball Bearing	400	0
BB Ball Bearing	370	0

Total rows: 1000 of 72857 Query complete 00:00:00.127 Ln 5, Col 1

Successfully run. Total query runtime: 127 msec. 72857 rows affected.