Soha Khalid

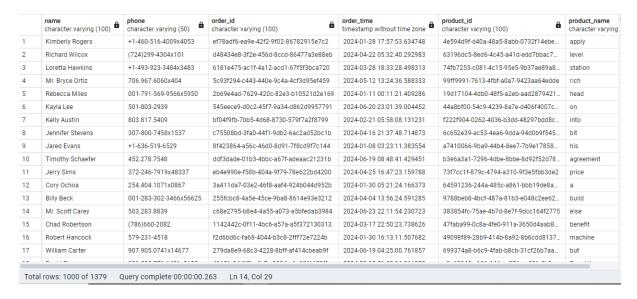**BWT – Data Engineering**

Task 05 [Topics: JOINS and WINDOW FUNCTIONS]

- Write a query to retrieve all orders placed by customers, including customer details (name, phone), order details (order ID, timestamp), and item details (product, amount).

```
SELECT
 C.name,
 c.phone,
 O.order_id,
 O.order_time,
 i.product_id,
 p.name AS product_name FROM
 sales.customers AS c RIGHT JOIN
 sales.orders AS o ON
 C.customer_id= O.customer_id LEFT JOIN
 sales.items AS i ON
 O.order_id = i.order_id LEFT JOIN
 sales.products AS p ON
 i.product_id = p.product_id
```

	name character varying (100)	phone character varying (50)	order_id character varying (100)	order_time timestamp without time zone	product_id character varying (100)	product_name character varying
1	Kimberly Rogers	+1-460-516-4009x4053	ef78adf6-ea9e-42f2-9f02-86782915e7c2	2024-01-28 17:57:53.634748	4e594d9f-d40a-48a5-8abb-0732f14ebe...	apply
2	Richard Wilcox	(724)299-4304x101	d48434e8-3f2e-456d-8ccd-86477a3e88eb	2024-04-22 05:32:40.292983	63196dc5-8ed6-4c45-a41d-edd7bbac7...	level
3	Loretta Hawkins	+1-493-923-3484x3483	6181e475-ac1f-4a12-acd1-67f5f3bca720	2024-03-28 18:33:28.498313	74fb7255-c081-4c15-95e5-9b37ae89a8...	station
4	Mr. Bryce Ortiz	706.967.6060x404	5c93f294-c443-440e-9c4a-4cf3d95ef459	2024-05-12 13:24:36.588333	99ff9991-7613-4fbf-a0a7-9423aa64edde	rich
5	Rebecca Miles	001-791-569-9566x5950	2b69e4ad-7629-420c-82e3-b10521d2e169	2024-01-11 00:11:21.409286	19d17104-4db0-48f5-a2eb-aad2879421...	head
6	Kayla Lee	501-803-2939	545eece9-d0c2-45f7-9a34-d862d9957791	2024-06-20 23:01:39.004452	44a8bf00-54c9-4239-8a7e-d406f4007c...	on
7	Kelly Austin	803.817.5409	bf04f9fb-7bb5-4d68-8730-579f7a2f8799	2024-02-21 05:58:08.131231	f222f904-0262-4036-b3dd-48297bdd8c...	into
8	Jennifer Stevens	307-800-7458x1537	c75508bd-3fa0-44f1-9db2-6ac2ad52bc1b	2024-04-16 21:37:48.714873	6c652e39-ac53-4ea6-9dda-94d0b9f545...	bit
9	Jared Evans	+1-636-519-6529	8f423864-a56c-46d0-8d91-7f8cd9f7c144	2024-01-08 03:23:11.383554	a7410066-9ba9-44b4-8ee7-7b9e17858...	his
10	Timothy Schaefer	452.278.7548	ddf3dade-01b3-4bbc-a67f-adeaac21231b	2024-06-19 08:48:41.429451	b3e6a3a1-7296-4dbe-8bbe-8d92f52d78...	agreement
11	Jerry Sims	372-246-7919x48337	eb4e990e-f58b-404a-9f79-78e622bd4200	2024-04-25 16:47:23.159788	73f7cc1f-879c-4794-a310-9f3e5fbb3de2	price
12	Cory Ochoa	254.404.1071x0867	3a411da7-03e2-46f8-aaf4-924b044d952b	2024-01-30 05:21:24.166373	64591236-244a-485c-a861-bbb19de8a...	a
13	Billy Beck	001-283-302-3466x56625	255fcbc8-4a5e-45ce-9ba8-8614e93e3212	2024-04-04 13:56:24.591285	9788beb8-4bcf-487a-81b3-e048c2ee62...	build
14	Mr. Scott Carey	503.283.8839	c68e2795-b8e4-4a55-a073-a5bfedab3984	2024-06-23 22:11:54.230723	383854fc-75ae-4b7d-8e7f-9dcc164f2775	else
15	Chad Robertson	(786)660-2082	1142442c-0f11-4bc6-a57a-a5f372130313	2024-03-17 22:50:23.738626	47faba99-0c8a-4fe0-911a-3650d4aab8...	benefit
16	Robert Hancock	579-231-4518	f2d6bd6c-fa68-4044-b3c8-2fff72e7224b	2024-01-30 16:13:11.507682	49098f89-28b9-414b-8a92-8b6cdd8137...	machine
17	William Carter	907.905.0741x14677	279da8e9-68c3-4228-8bff-af414cbeab9f	2024-06-19 04:25:00.761857	699374a8-b6c9-4fab-8cb-31cf26b7aa...	but

Total rows: 1000 of 1379   Query complete 00:00:00.263   Ln 14, Col 29

- Write a query to fetch all products along with their suppliers' details (name, phone) and the corresponding category name.

SELECT

p.name AS product_name,

p.category AS product_category,

s.name AS supplier_name, s.phone AS supplier_phone,

s.category AS supplier_category

FROM sales.products AS p

INNER JOIN sales.suppliers AS s

ON

p.supplier_id = s.supplier_id

product_name character varying (50) 🔒	product_category character varying (50) 🔒	supplier_name character varying (100) 🔒	supplier_phone character varying (100) 🔒	supplier_category character varying (50) 🔒
1	talk	different	Turner, Newman and Rodriguez	001-650-863-5785x75794	accept
2	letter	write	Hall, Garcia and Wiggins	888-551-8790x931	decision
3	decade	decision	Acosta-Freeman	+1-949-497-5202	participant
4	major	believe	Reed, Gonzalez and Moore	+1-999-431-0825	common
5	various	speech	Alvarado-Cannon	6822144562	participant
6	security	trouble	Hill PLC	(534)558-4604x4870	offer
7	cost	rest	Smith, Burton and Smith	389-455-1435	difference
8	we	defense	Walker, Graham and Hernandez	001-978-752-3677	something
9	themselves	statement	Delacruz, Cummings and Silva	470.752.0877x6294	space
10	husband	develop	Torres-Calderon	495-368-0111x874	kitchen
11	relationship	market	Drake Group	994-564-8546x29857	forget
12	field	understand	Freeman and Sons	3797776077	take
13	too	deep	House Inc	497.914.9268	step
14	talk	third	Gordon LLC	001-820-250-0746x7939	could
15	family	system	Wilkinson, Marshall and Schmidt	2389552301	investment
16	voice	raise	Jordan-Marquez	(546)382-9420	decide
17	place	talk	Lopez-Haney	7272005184	budget
18	voice	wife	Salazar Group	6188988557	suffer

Total rows: 1000 of 1000   Query complete 00:00:00.181   Ln 24, Col 31

- Write a query to retrieve details of all orders including the product name and amount ordered for each item.

SELECT O.order_id,

O.status,

O.order_time,

O.total_amount AS order_amount, p.name AS product_name, i.amount AS item_amount

FROM sales.orders AS o

LEFT JOIN sales.items AS i

ON

O.order_id = i.order_id LEFT JOIN

sales.products AS p ON

i.product_id = p.product_id ORDER BY

O.order_id

	order_id character varying (100)	status character varying (50)	order_time timestamp without time zone	order_amount double precision	product_name character varying (50)	item_amount double precision
1	002466f4-e2d2-41b6-908f-b12418db9f1d	Cancelled	2024-06-23 10:28:57.545177	123.93	[null]	[null]
2	0077622c-f789-402f-8f27-a8ef29b92f99	Completed	2024-01-04 07:44:52.702814	252.56	will	32.05
3	007c6893-fc40-44f8-a794-741ad1bfd9c7	Cancelled	2024-06-09 00:25:09.386567	834.56	difference	52.99
4	00860b6c-6b06-4694-8708-f7aa4375d5e4	Pending	2024-03-08 06:58:18.346432	25.97	build	73.93
5	00860b6c-6b06-4694-8708-f7aa4375d5e4	Pending	2024-03-08 06:58:18.346432	25.97	difficult	39.54
6	00860b6c-6b06-4694-8708-f7aa4375d5e4	Pending	2024-03-08 06:58:18.346432	25.97	evidence	99.77
7	00871b7a-6c23-4916-aeff-e22ee8e27ea9	Completed	2024-05-29 11:27:53.906636	315.29	citizen	65.86
8	00aa2373-5f66-4165-8ebf-7724b314028a	Pending	2024-02-06 17:35:35.482997	862.98	major	26.53
9	00aa2373-5f66-4165-8ebf-7724b314028a	Pending	2024-02-06 17:35:35.482997	862.98	address	10.07
10	00ce4abc-b40a-4918-a245-5489bea007…	Completed	2024-05-31 07:51:38.545976	14.33	that	91.49
11	00ce4abc-b40a-4918-a245-5489bea007…	Completed	2024-05-31 07:51:38.545976	14.33	voice	89.47
12	01ae2353-d4b0-4d78-aed1-8601b1dd35…	Pending	2024-03-18 10:40:16.493308	477.12	sea	22.43
13	01c88a63-a876-47fc-a466-3b6a935d9150	Cancelled	2024-05-01 19:46:00.87493	575.5	nature	86.03
14	0220b92a-e2f1-4b71-8c13-d210bb31ba49	Cancelled	2024-04-23 01:21:16.145443	724.26	[null]	[null]
15	02708129-1014-4295-a762-b453812395…	Completed	2024-01-02 20:40:16.145567	118.1	now	24.17
16	02708129-1014-4295-a762-b453812395…	Completed	2024-01-02 20:40:16.145567	118.1	government	86.68
17	02730423-38bf-4279-84f4-a764ac2c2215	Cancelled	2024-01-10 07:42:10.506051	282.29	[null]	[null]
18	02a76bfd-d417-4c03-9ab2-2bd69d21e025	Pending	2024-06-08 07:33:57.775438	26.15	ever	8.46

Total rows: 1000 of 1379   Query complete 00:00:00.388   Ln 37, Col 12

- Write a query to retrieve all suppliers along with the city and country where they are located, and the products they supply.

SELECT

s.name AS supplier_name, s.phone, s.location AS city, C.country,

p.name AS product_name FROM

sales.suppliers AS s LEFT JOIN

sales.cities AS c ON

s.location = c.name LEFT JOIN

sales.products AS p ON

s.supplier_id = p.supplier_id

	supplier_name character varying (100)	phone character varying (100)	city character varying (50)	country character varying (100)	product_name character varying (50)
1	Wilson, Freeman and Ware	+1-573-920-0632x8160	South Christine	Israel	[null]
2	Stein-Adams	724-831-9559x9164	New Frank	Belgium	outside
3	Stein-Adams	724-831-9559x9164	New Frank	Belgium	investment
4	Stein-Adams	724-831-9559x9164	New Frank	Belgium	should
5	Hall, Garcia and Wiggins	888-551-8790x931	Lake Michael	Slovenia	letter
6	Hall, Garcia and Wiggins	888-551-8790x931	Lake Michael	Slovenia	his
7	Hall, Garcia and Wiggins	888-551-8790x931	Lake Michael	Slovenia	rock
8	Mcconnell-Edwards	576-782-8489	Lake Michael	Slovenia	[null]
9	Gonzales-Hood	(295)289-5207x846	Wrightton	Guyana	[null]
10	Ortega Group	643.992.4069x56421	East Mark	Greece	part
11	Ortega Group	643.992.4069x56421	East Mark	Greece	movie
12	Montgomery, Roy and Wood	+1-419-521-1471x553	Thomasfort	Faroe Islands	[null]
13	Griffin-Wang	(985)633-4185	Port Matthew	Poland	[null]
14	Warren Group	+1-206-285-6660	Smithtown	Yemen	[null]
15	Jones PLC	493.651.3252x417	New Justin	Senegal	[null]
16	Jennings, Curry and Grant	001-824-340-4466	North Brian	Philippines	very
17	Brooks, Martinez and Orozco	264-594-3936	Gregoryborough	Canada	[null]
18	Smith PLC	001-625-595-2379x737	East Jeffrey	Saudi Arabia	[null]

Total rows: 1000 of 1370   Query complete 00:00:01.177   Ln 47, Col 31

- Write a query to fetch details of the most recent order (by timestamp) placed by each customer, including the product details for each item in the order. [This question will use a Window Function alongside Joins]

WITH RankedOrders AS (

  SELECT

    o.customer_id,

    RANK() OVER (PARTITION BY o.customer_id ORDER BY o.order_time DESC) AS order_rank_for_customer,

    o.order_id,

    o.order_time,

    c.name,

    c.location,

    p.name AS product_name,

    p.category AS product_category,

    p.price AS product_price

  FROM

    sales.orders AS o

  LEFT JOIN

    sales.customers AS c

```sql
        ON
            o.customer_id = c.customer_id
        LEFT JOIN
            sales.items AS i
        ON
            o.order_id = i.order_id
        LEFT JOIN
            sales.products AS p
        ON
            i.product_id = p.product_id
)
SELECT
        customer_id,
        name AS customer_name,
        location AS customer_location,
        order_id,
        order_time,
        product_name,
        product_category,
        product_price
FROM
        RankedOrders
WHERE
        order_rank_for_customer = 1
ORDER BY
        customer_id DESC;
```

	customer_id character varying (100)	customer_name character varying (100)	customer_location character varying (50)	order_id character varying (100)	order_time timestamp without time zone	product_name character varying (50
1	ffb7c3c7-705e-43b6-8a9a-0f743164ea94	Jesse Greer	East Timothyfort	6f32e006-cebd-43fa-bad0-e23cada47c...	2024-05-29 00:36:38.51086	customer
2	ffb7c3c7-705e-43b6-8a9a-0f743164ea94	Jesse Greer	East Timothyfort	6f32e006-cebd-43fa-bad0-e23cada47c...	2024-05-29 00:36:38.51086	police
3	ff878edc-47e7-4b39-a24f-9bd26f936cfe	Thomas Roberts	Coxside	c98cbffa-4918-4175-88a7-c8ca682494...	2024-01-09 07:01:32.409216	suffer
4	ff845231-1e77-47eb-9949-433e38afbb96	Andrea Davis	Lake Stephanieside	9eda8c53-d1d8-4593-b9e6-6b03a2a1c...	2024-05-30 07:55:43.06364	million
5	ff71de97-5e4f-4749-bc7e-1021c73f9d34	Shelly Haley	North Pamela	92e966a1-46e1-45ea-b07c-2f49e0dfb4...	2024-04-17 13:40:05.036449	[null]
6	ff6dceba-1795-4271-ac35-96219afeaaae	Stephanie Ferguson	West Michael	a293a612-e954-4496-a164-4d1927050...	2024-06-20 16:43:40.069428	program
7	ff6dceba-1795-4271-ac35-96219afeaaae	Stephanie Ferguson	West Michael	a293a612-e954-4496-a164-4d1927050...	2024-06-20 16:43:40.069428	big
8	ff52b73e-74b4-48f6-941b-40d324016105	John Rodriguez	New Natashamouth	d1ba21ce-33eb-49ca-8022-6a01a7868...	2024-04-13 13:23:09.472914	[null]
9	feea5f6d-b82f-4094-80e4-f4d84509b604	Tiffany Bishop	Benjaminfurt	d02cdb84-46d3-45d5-ac38-05f203d10...	2024-05-10 16:35:24.849445	[null]
10	fee8f537-dcce-49c4-ba71-6781792656d7	Sydney Little	Petersfort	0468ffb8-8c01-42d5-81f0-c944e11433...	2024-02-22 00:41:20.029938	smile
11	fea10b26-f4f3-4d51-8aa7-87d9984bcb14	Courtney Cooley	Lake Jenniferstad	9d5bbff6-ad52-4f15-82c9-a6db7cb5f8...	2024-03-04 07:12:35.396137	able
12	fea10b26-f4f3-4d51-8aa7-87d9984bcb14	Courtney Cooley	Lake Jenniferstad	9d5bbff6-ad52-4f15-82c9-a6db7cb5f8...	2024-03-04 07:12:35.396137	chair
13	fe80a051-7a76-472e-b885-26e603274a...	Jordan Duncan	East Rebeccaland	3860c311-6a50-43cd-8402-f196832b3...	2024-02-13 01:29:06.48799	teacher
14	fd6d7340-7156-491e-a0cc-165806c1b0...	Gregory Brown	Sheilaburgh	002466f4-e2d2-41b6-908f-b12418db9f...	2024-06-23 10:28:57.545177	[null]
15	fce9c2c0-aa0c-4455-8047-7e1f5271add2	Charles Garcia	South Theresaborough	5f5f5b63-5c45-4a84-bfba-e9e83a71c0...	2024-05-16 12:57:23.944187	happen
16	fce9c2c0-aa0c-4455-8047-7e1f5271add2	Charles Garcia	South Theresaborough	5f5f5b63-5c45-4a84-bfba-e9e83a71c0...	2024-05-16 12:57:23.944187	customer
17	fce0da82-4068-4ea4-9286-a0e999a130c5	Janice White	South Adam	121b9871-869e-4d0c-adc5-c26df3a81...	2024-06-16 12:55:01.971986	career

Total rows: 850 of 850   Query complete 00:00:00.259   Ln 90, Col 2

product_name character varying (50)	product_category character varying (50)	product_price double precision
customer	eight	40.59
police	hour	411.02
suffer	property	316.08
million	lose	310.71
[null]	[null]	[null]
program	talk	228.27
big	race	173.49
[null]	[null]	[null]
[null]	[null]	[null]
smile	total	112.02
able	blood	76.61
chair	task	150.75
teacher	current	280.6
[null]	[null]	[null]
happen	firm	256.21
customer	eight	40.59
career	weight	120.99