«به نام خدا»

9631983 - مرضیه علیدادی DB1 - تکلیف سوم

A1)

1	select * from q1										
Oata C	Output Notifications	Messages Explain	n Scratch Pad								
	productname character varying (50) ♠	productnumber character varying (25)	productcategory character varying (50)	productsubcategory character varying (50)	transactionid integer	referenceorderid	referenceorderlineid anteger	transactiondate timestamp without time zone	transactiontype character (1)	quantity integer	actualcost numeric
1	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100159	53454	10	2013-07-31 00:00:00	S	8	7:
2	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100160	53454	34	2013-07-31 00:00:00	S	2	4.7
3	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100299	53458	40	2013-07-31 00:00:00	S	9	7
4	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100300	53458	4	2013-07-31 00:00:00	S	12	4.7
5	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100348	53459	37	2013-07-31 00:00:00	S	2	7
6	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100349	53459	15	2013-07-31 00:00:00	S	6	4.7
7	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100423	53460	35	2013-07-31 00:00:00	S	18	7
8	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100424	53460	5	2013-07-31 00:00:00	S	6	4.7
9	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100517	53465	12	2013-07-31 00:00:00	S	11	7
10	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100518	53465	7	2013-07-31 00:00:00	S	14	4.7
11	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100571	53467	14	2013-07-31 00:00:00	S	5	7
12	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100572	53467	11	2013-07-31 00:00:00	S	3	4.7
13	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100594	53468	2	2013-07-31 00:00:00	S	3	7
14	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100595	53468	31	2013-07-31 00:00:00	S	7	4.7
15	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100742	53472	31	2013-07-31 00:00:00	S	19	7
16	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100743	53472	46	2013-07-31 00:00:00	S	13	4.7
17	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100830	53475	38	2013-07-31 00:00:00	S	28	
18	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100831	53475	20	2013-07-31 00:00:00	S	7	4.
19	Hitch Rack - 4-Bike	RA-H123	Accessories	Bike Racks	100955	53480	37	2013-07-31 00:00:00	S	2	
20	Bike Wash - Dissolver	CL-9009	Accessories	Cleaners	100956	53480	27	2013-07-31 00:00:00	S	2	4.

A3)

. ,		,	
		ctID, salesOr	
2 fro	•	n.product as l uctID = S.prod	P left outer join sales.salesOrderDetail as S
Notification	J	•	ratch Pad Data Output
4	productid integer	salesorderid integer	
1	776	43659	
2	777	43659	
3	778	43659	
4	771	43659	
5	772	43659	
6	773	43659	
7	774	43659	
8	714	43659	
9	716	43659	
10	709	43659	
11	712	43659	
12	711	43659	
13	762	43660	
14	758	43660	
15	745	43661	
16	743	43661	
17	747	43661	
18	712	43661	
19	715	43661	
20	742	43661	

A4)

. ,									
1 2 3 4	<pre>select P.productID, salesOrderID from production.product as P left outer join sales.salesOrderDetail as S on p.productID = S.productID where salesOrderID is null</pre>								
Notifi	cations Mes	sages Explain	Scratch Pad Data Output						
4	productid integer	salesorderid integer							
1	497	[null]							
2	452	[null]							
3	496	[null]							
4	455	[null]							
5	384	[null]							
6	399	[null]							
7	437	[null]							
8	518	[null]							
9	397	[null]							
10	486	[null]							
11	330	[null]							
12	847	[null]							
13	359	[null]							
14	405	[null]							
15	379	[null]							
16	373	[null]							
17	414	[null]							
18	449	[null]							
19	382	[null]							

A5)

برداشت من از صورت سوال، این بود که باید تمام ردیف های دو جدول را در صورت مطابقت، در خروجی بیاورم. به علاوه، برای جدول دیگر نظیرشان نباشد، در خروجی بیاورم. در خروجی بیاورم. در خروجی بیاورم.

		•		
<pre>select S.salespersonid, P.salesYTD , S.salesOrderID from sales.salesPerson as P right outer join sales.SalesOrderHeader as S</pre>	4	salespersonid integer	salesytd numeric	salesorderid integer
<pre>3</pre>	1	279	2315185.611	43659
	2	279	2315185.611	43660
	3	282	2604540.7172	43661
	4	282	2604540.7172	43662
	5	276	4251368.5497	43663
	6	280	1352577.1325	43664
	7	283	1573012.9383	43665
	8	276	4251368.5497	43666
	9	277	3189418.3662	43667
	10	282	2604540.7172	43668
	11	283	1573012.9383	43669
	12	275	3763178.1787	43670
	13	283	1573012.9383	43671
	14	282	2604540.7172	43672
	15	275	3763178.1787	43673
	16	282	2604540.7172	43674
	17	277	3189418.3662	43675
	18	275	3763178.1787	43676
	19	278	1453719.4653	43677
Notifications Messages Explain Scratch Pad X	20	281	2458535.6169	43678
Troumeduono Messages Explain Sciatori Fau	21	278	1453719.4653	43679
	22	281	2458535.6169	43680
	23	279	2315185.611	43681

A6)

1	<pre>select S.salespersonid, P.salesYTD , S.salesOrderID , R.firstName from sales.salesPerson as P right outer join sales.SalesOrderHeader as S on P.BusinessEntityID = S.salespersonid</pre>		salespersonid integer	salesytd numeric	salesorderid integer	firstname character varying (50)
3			279	2315185.611	43659	[null]
4	<pre>left outer join HumanResources.Employee as E on (P.BusinessEntityID = E.BusinessEntityID) left outer join person.person as R on (E.BusinessEntityID = R.BusinessEntityID)</pre>	2	279	2315185.611	43660	[null]
5		3	282	2604540.7172	43661	[null]
6		4	282	2604540.7172	43662	[null]
7		5	276	4251368.5497	43663	[null]
8		6	280	1352577.1325	43664	[null]
		7	283	1573012.9383	43665	[null]
		8	276	4251368.5497	43666	[null]
		9	277	3189418.3662	43667	[null]
		10	282	2604540.7172	43668	[null]
		11	283	1573012.9383	43669	[null]
		12	275	3763178.1787	43670	[null]
		13	283	1573012.9383	43671	[null]
		14	282	2604540.7172	43672	[null]
		15	275	3763178.1787	43673	[null]
		16	282	2604540.7172	43674	[null]
		17	277	3189418.3662	43675	[null]
		18	275	3763178.1787	43676	[null]
		19	278	1453719.4653	43677	[null]
		20	281	2458535.6169	43678	[null]
Not	ifications Messages Explain Scratch Pad	21	278	1453719.4653	43679	[null]
Suc	cessfully run. Total query runtime: 165 msec.	22	281	2458535.6169	43680	[null]
	65 rows affected.	23	279	2315185.611	43681	[null]
			275	3763178.1787	43682	[null]

A7)

select T1.salesOrderID, T2.CurrencyRateID, T2.AverageRate, T4.ShipBase from (sales.salesOrderHeader as T1 left outer join sales.CurrencyRate as T2 on (T1.currencyRateID = T2.currencyRateID)) 3 full outer join 4 (sales.salesOrderHeader as T3 left outer join purchasing.ShipMethod T4 5 on (T3.shipMethodID = T4.shipMethodID)) on T1.salesOrderID = T3.salesOrderID Explain Scratch Pad Data Output Notifications Messages salesorderid currencyrateid averagerate shipbase integer integer numeric numeric 43659 1 [null] [null] 8.99 2 43660 [null] [null] 8.99 3 43661 1.4641 8.99 4 43662 1.4641 8.99 4 4 5 43663 [null] [null] 8.99 6 43664 [null] [null] 8.99 7 43665 [null] [null] 8.99 8 43666 [null] [null] 8.99 [null] 9 43667 [null] 8.99 10 43668 4 1.4641 8.99 [null] [null] 11 43669 8.99 43670 [null] [null] 8.99 12 13 43671 [null] [null] 8.99 1.4641 14 43672 8.99 15 43673 [null] [null] 8.99 43674 1.4641 16 4 8.99

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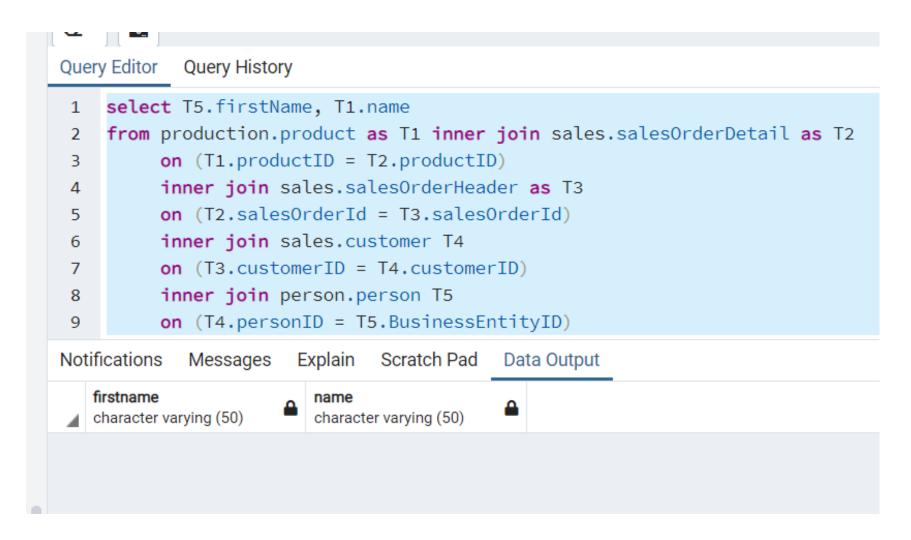
A8)

برداشت من از این سوال این بود که باید تمام ردیف های دو جدول، در خروجی آورده شوند؛ حتی در صورت عدم تطابق.

1 select T4.BusinessEntityID, T1.productID		businessentityid integer	productid integer
2 from production.product as T1 full outer join sales.salesOrderDetail T2	1	279	776
<pre>on T1.productID = T2.productID full outer join sales.salesOrderHeader as T3</pre>	2	279	777
on (T2.sales0rderID = T3.sales0rderID)	3	279	778
full outer join sales.salesPerson as T4		279	778
<pre>7</pre>	4		771
8	5	279	
9	6	279	773
	7	279	774
	8	279	714
	9	279	716
	10	279	709
	11	279	712
	12	279	711
	13	279	762
	14	279	758
	15	282	745
	16	282	743
	17	282	747
	18	282	712
	19	282	715
	20	282	742
Notifications Messages Explain Scratch Pad	21	282	775
<u> </u>	22	282	778
	23	282	711
	24	282	741

A9)

چون جدول person.person خالی است و رکوردی ندارد، نتیجه خالی می شود.



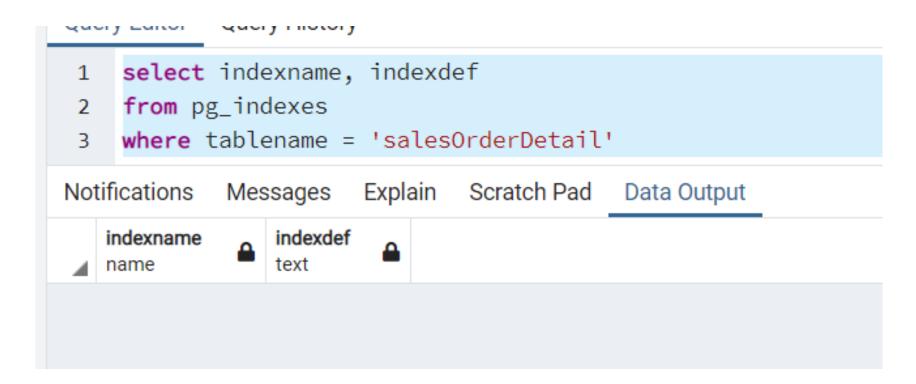
A10)

بزرگ ترین جدول از نظر تعداد رکورد، جدول sales.salesOrderDetail است:

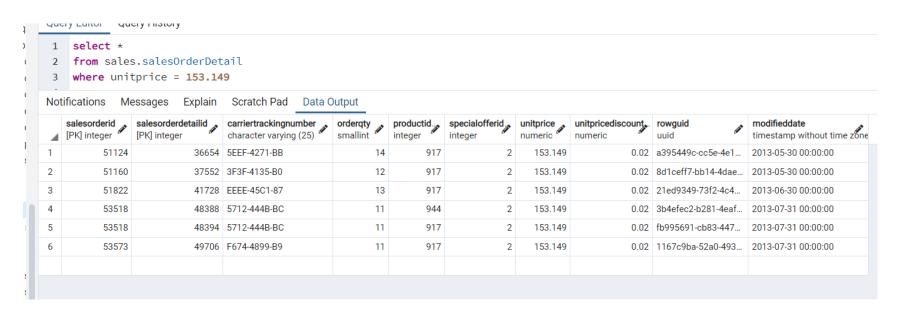
1 2	SELECT nspname as schemaName, relname as relationName, reltuples as recordsNubmer FROM pg_class as C		name	relationname name	recordsnubmer real
3	LEFT JOIN pg_namespace N ON (N.oid = C.relnamespace)	1	sales	salesorderdetail	121317
4	WHERE nspname NOT IN ('pg_catalog', 'information_schema') AND relkind='r'	2	production	transactionhistory	113443
5	ORDER BY reltuples DESC;	3	production	transactionhistoryarchive	89253
		4	production	workorder	72591
		5	production	workorderrouting	67131
		6	sales	salesorderheader	31465
		7	sales	salesorderheadersalesreason	27647
		8	sales	customer	19820
		9	person	address	19614
		10	sales	creditcard	19118
		11	sales	personcreditcard	19118
		12	sales	currencyrate	13532
		13	purchasing	purchaseorderdetail	8845
		14	purchasing	purchaseorderheader	4012
		15	production	billofmaterials	2679
		16	production	productinventory	1069
		17	production	productmodelproductdescriptionculture	762
		18	sales	specialofferproduct	538
		19	production	productproductphoto	504
		20	production	product	504
Noti	otifications Messages Explain Scratch Pad X		purchasing	productvendor	460
			production	productlistpricehistory	395
		23	production	productcosthistory	395
			humanresources	employeepayhistory	316

A11)

هیچ index ای روی فیلد های این جدول وجود ندارد.



A12)



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P12)

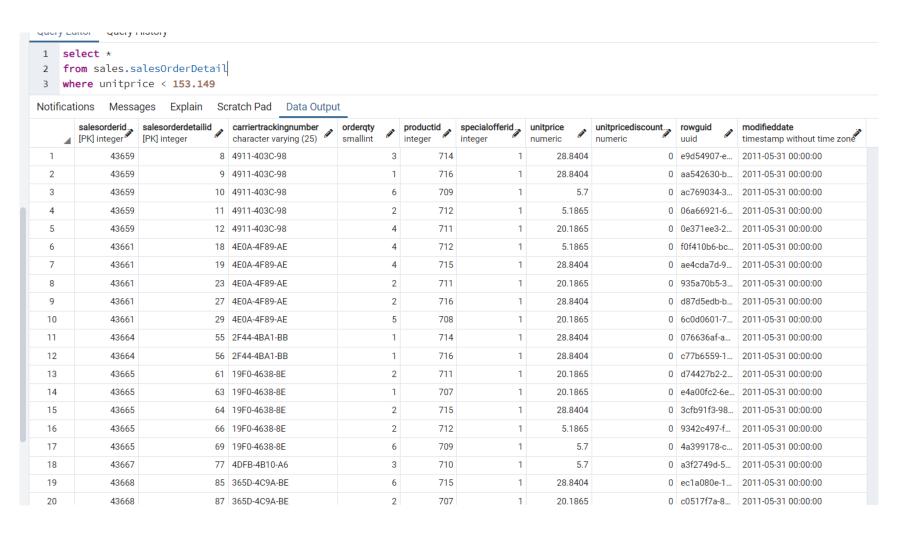
1 explain select *
2 from sales.salesOrderDetail
3 where unitprice = 153.149

Notifications Messages Explain Scratch Pad Data Output

QUERY PLAN
text

1 Seq Scan on salesorderdetail (cost=0.00..2955.46 rows=76 width=64)
2 Filter: (unitprice = 153.149)

A13)

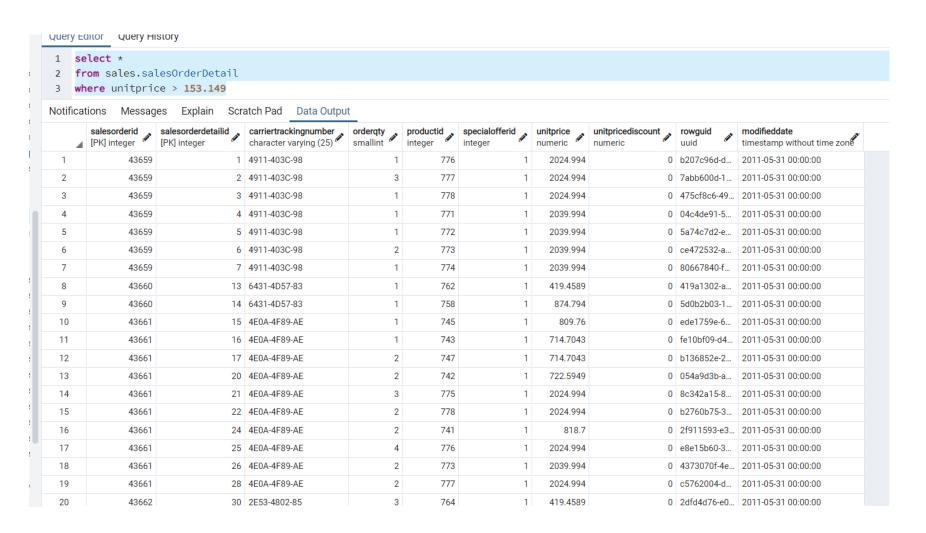


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P13)

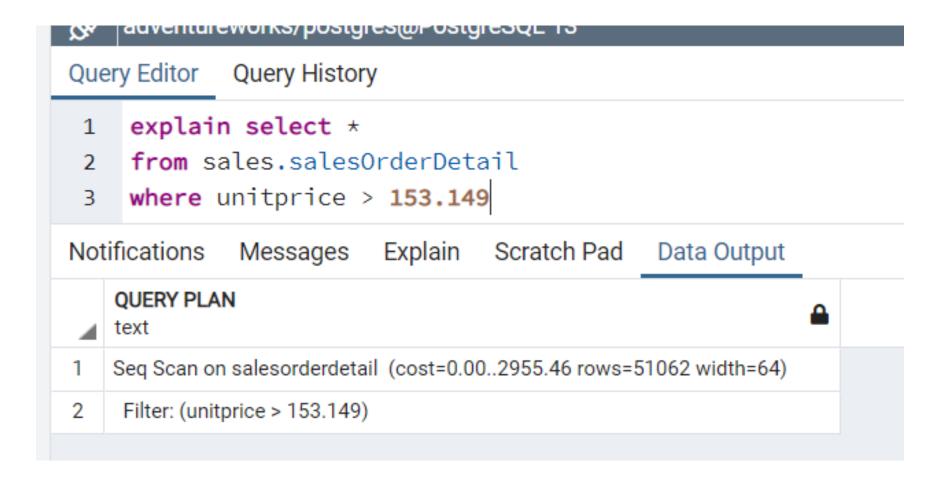
Query Euitor Query mistory explain select * from sales.salesOrderDetail where unitprice < 153.149 Messages Explain Scratch Pad Data Output Notifications **QUERY PLAN** text Seq Scan on salesorderdetail (cost=0.00..2955.46 rows=70179 width=64) 2 Filter: (unitprice < 153.149)

A14)



/^^^^^^

P14)



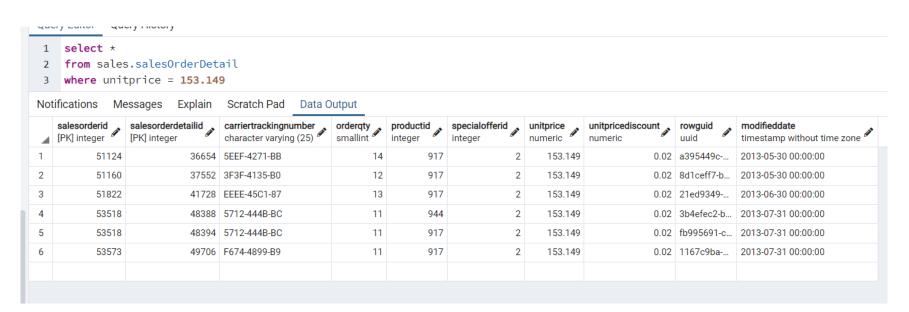
• index ای که روی فیلد unitPrice ایجاد شد:

```
1 create index index_salesOrderDetail_unitPrice
2 on sales.salesOrderDetail (unitPrice)
3

Notifications Messages Explain Scratch Pad Data Output
CREATE INDEX
```

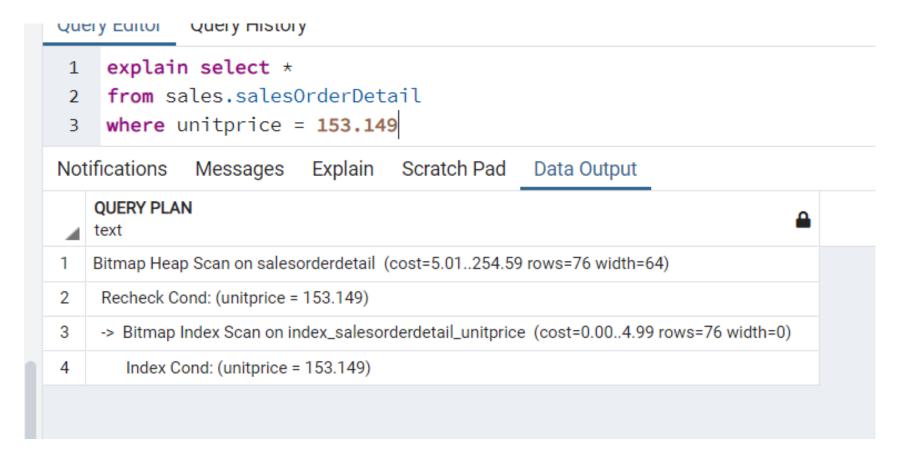
Query returned successfully in 589 msec.

A15)



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P15)



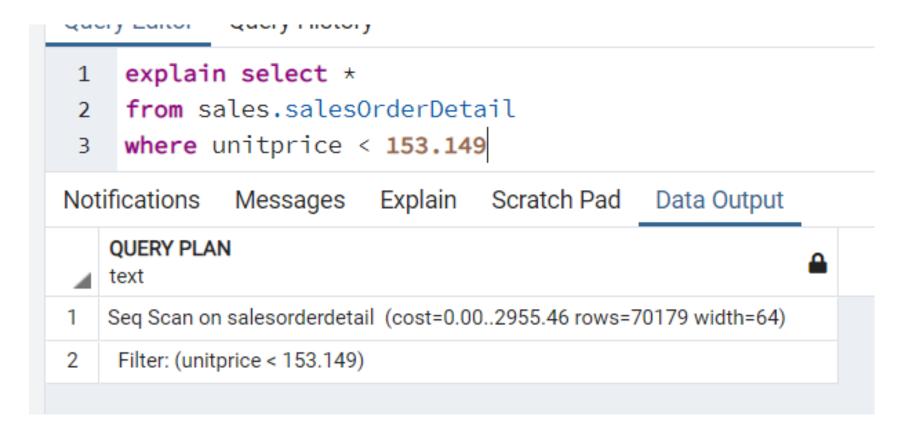
A16)

and a marine 1 select * 2 from sales.salesOrderDetail where unitprice < 153.149 Notifications Messages Explain Scratch Pad Data Output unitpricediscount , carriertrackingnumber orderqty productid specialofferid modifieddate salesorderid salesorderdetailid smallint 🖋 unitprice rowguid character varying (25) numeric 🇳 [PK] integer timestamp without time zone integer integer numeric uuid 43659 8 4911-403C-98 3 714 28.8404 0 e9d54907-e7b... 2011-05-31 00:00:00 2 43659 9 4911-403C-98 716 28.8404 0 aa542630-bdc... 2011-05-31 00:00:00 3 43659 10 4911-403C-98 6 709 1 5.7 0 ac769034-3c2... 2011-05-31 00:00:00 4 43659 11 4911-403C-98 2 712 5.1865 0 06a66921-6b9... 2011-05-31 00:00:00 711 5 43659 12 4911-403C-98 4 1 20.1865 0 0e371ee3-253... 2011-05-31 00:00:00 6 43661 18 4E0A-4F89-AE 712 1 5.1865 0 f0f410b6-bc93... 2011-05-31 00:00:00 7 43661 19 4E0A-4F89-AE 4 715 1 28.8404 0 ae4cda7d-9b6... 2011-05-31 00:00:00 8 43661 23 4E0A-4F89-AE 2 711 1 20.1865 0 935a70b5-33a... 2011-05-31 00:00:00 9 43661 27 4E0A-4F89-AE 2 716 1 28.8404 0 d87d5edb-b89... 2011-05-31 00:00:00 5 0 6c0d0601-76ff... 2011-05-31 00:00:00 10 43661 29 4E0A-4F89-AE 708 1 20.1865 11 43664 55 2F44-4BA1-BB 1 714 28.8404 0 076636af-a24f... 2011-05-31 00:00:00 1 12 43664 56 2F44-4BA1-BB 716 1 28.8404 0 c77b6559-1f2... 2011-05-31 00:00:00 13 43665 61 19F0-4638-8E 2 711 1 20.1865 0 d74427b2-27e... 2011-05-31 00:00:00 14 43665 63 19F0-4638-8E 1 707 1 20.1865 0 e4a00fc2-6ed... 2011-05-31 00:00:00 15 43665 64 19F0-4638-8E 2 715 28.8404 0 3cfb91f3-98ab... 2011-05-31 00:00:00 43665 2 0 9342c497-f31... 2011-05-31 00:00:00 16 66 19F0-4638-8E 712 1 5.1865 17 43665 69 19F0-4638-8E 6 709 5.7 0 4a399178-c0a... 2011-05-31 00:00:00 18 43667 77 4DFB-4B10-A6 710 0 a3f2749d-522... 2011-05-31 00:00:00 19 43668 6 715 28.8404 85 365D-4C9A-BE 1 0 ec1a080e-1ec... 2011-05-31 00:00:00 20 43668 87 365D-4C9A-BE 2 707 20.1865 0 c0517f7a-899... 2011-05-31 00:00:00

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P16)



A17)

query manner query morery 1 select * 2 from sales.salesOrderDetail where unitprice > 153.149 Notifications Messages Explain Scratch Pad Data Output specialofferid orderqty productid integer salesorderdetailid carriertrackingnumber unitprice 🗼 unitpricediscount rowguid modifieddate character varying (25) numeric * [PK] integer timestamp without time zone [PK] integer integer numeric uuid 43659 1 4911-403C-98 776 2024.994 0 b207c96d-d9e... 2011-05-31 00:00:00 2 43659 2 4911-403C-98 3 777 2024.994 0 7abb600d-1e7... 2011-05-31 00:00:00 3 43659 3 4911-403C-98 1 778 2024,994 0 475cf8c6-49f6... 2011-05-31 00:00:00 4 43659 4 4911-403C-98 1 771 2039.994 0 04c4de91-581... 2011-05-31 00:00:00 5 43659 5 4911-403C-98 1 772 2039.994 0 5a74c7d2-e64... 2011-05-31 00:00:00 43659 6 4911-403C-98 2 773 2039.994 0 ce472532-a4c... 2011-05-31 00:00:00 6 7 43659 7 4911-403C-98 1 774 2039.994 0 80667840-f96... 2011-05-31 00:00:00 8 43660 13 6431-4D57-83 1 762 419.4589 0 419a1302-ac7... 2011-05-31 00:00:00 9 43660 14 6431-4D57-83 1 758 1 874.794 0 5d0b2b03-1d4... 2011-05-31 00:00:00 10 43661 15 4E0A-4F89-AE 745 809.76 0 ede1759e-673... 2011-05-31 00:00:00 1 743 714.7043 11 43661 16 4E0A-4F89-AE 0 fe10bf09-d477... 2011-05-31 00:00:00 12 43661 17 4E0A-4F89-AE 2 747 714.7043 0 b136852e-24c... 2011-05-31 00:00:00 20 4E0A-4F89-AE 2 742 722,5949 0 054a9d3b-a17... 2011-05-31 00:00:00 13 43661 14 43661 21 4E0A-4F89-AE 3 775 2024.994 0 8c342a15-857... 2011-05-31 00:00:00 15 43661 22 4E0A-4F89-AE 2 778 1 2024.994 0 b2760b75-3f1... 2011-05-31 00:00:00 43661 24 4E0A-4F89-AE 2 741 818.7 0 2f911593-e3b... 2011-05-31 00:00:00 16 1 17 43661 25 4E0A-4F89-AE 4 776 2024.994 0 e8e15b60-3a7... 2011-05-31 00:00:00 18 43661 26 4E0A-4F89-AE 2 773 0 4373070f-4ebf... 2011-05-31 00:00:00 2039.994 19 43661 28 4E0A-4F89-AE 2 777 2024.994 0 c5762004-de9... 2011-05-31 00:00:00 20 30 2E53-4802-85 3 0 2dfd4d76-e02... 2011-05-31 00:00:00 43662 764 419,4589

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P17)

1 explain select *
2 from sales.salesOrderDetail
3 where unitprice > 153.149

Notifications Messages Explain Scratch Pad Data Output

QUERY PLAN
text

1 Seq Scan on salesorderdetail (cost=0.00..2955.46 rows=51062 width=64)

2 Filter: (unitprice > 153.149)