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## Course: SQL

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**Database:** RetailAB

**Tables:** Address, Customers, DataTable, Products, Regions, Returns, Salesdata, Segment, Shipmode,

Q 1. Print invoice details like OrderId, OrderDate, ShipDate, UpdatedDate, ShipMode, Region, City, State, Country, PostalCode, ProductName, Category, Sub-Category, CustomerName, Segment, Sales, Quantity, Discount, Profit, returned.

```
Create view vw_SalesReport as
select  a.OrderId,i.date OrderDate ,j.Date ShipDate
        ,a.UpdatedDate,h.ShipMode,f.Region
        ,c.City,c.State,c.Country,c.PostalCode
        ,e.ProductName,e.Category, e.[Sub-Category]
        ,d.CustomerName
        ,a.OrderDateKey,a.ShipDateKey
        ,g.Segment
        ,a.Sales,a.Quantity,a.Discount,a.Profit
        ,b.returned
        ,i.[Year] OrderYr ,i.QtrNum OrderQtrNum,i.QtrName OrderQtrName,i.[Month] OrderMonth,i.[MonthName] OrderMonthName
        ,i.WeekNum OrderWeekNum ,i.WeekName OrderWeekName ,i.[Day] OrderDay,i.WeekDayNum OrderWeekDayNum,i.WeekDayName OrderWeekDayName
        ,j.[Year] ShipYr ,j.QtrNum ShipQtrNum,j.QtrName ShipQtrName,j.[Month] ShipMonth,j.[MonthName] ShipMonthName
        ,j.WeekNum ShipWeekNum ,j.WeekName ShipWeekName ,j.[Day] ShipDay,j.WeekDayNum ShipWeekDayNum,j.WeekDayName ShipWeekDayName
from SalesData a
left outer Join [Returns] b on a.OrderId=b.OrderId
inner join [address] c on c.AddressId=a.AddressId
inner join customers d on d.CustomerId=a.CustomerId
inner join products e on e.ProductId =a.ProductId
inner join Regions f on f.RegionId=a.RegionId
inner join segment g on g.SegmentId=a.SegmentId
inner join shipmode h on h.ShipModeId=a.ShipModeId
inner join DataTable i on i.DateKey=a.OrderDateKey
inner join DataTable j on j.DateKey=a.ShipDateKey ;

--select * from vw_SalesReport;
```

Q 2. Find total sales orders, customers, products, regions, segments, ship modes, sales, quantity, discount, profit summary by sales and sales return.

```

use RetailAB;
go
Alter view vw_SaleSummary as
select 'Total Sales' Type, count(*) Records, count(distinct a.OrderId) Orders , count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
, count(distinct a.Region) Regions, count(distinct a.Segment) Segments, count(distinct a.ShipMode) ShopModes
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sales , Round(Sum(a.discount),2) Discount, Round(Sum(a.Profit),2) Profit
from vw_SalesReport a --where isnull(a.returned,'')<>'Yes'
union all
select 'Total Return Sale' Type, count(*) Records, count(distinct a.OrderId) Orders , count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
, count(distinct a.Region) Regions, count(distinct a.Segment) Segments, count(distinct a.ShipMode) ShopModes
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sales , Round(Sum(a.discount),2) Discount, Round(Sum(a.Profit),2) Profit
from vw_SalesReport a where a.returned='Yes'
Union all
select 'Net Sales' Type, count(*) Records, count(distinct a.OrderId) Orders , count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
, count(distinct a.Region) Regions, count(distinct a.Segment) Segments, count(distinct a.ShipMode) ShopModes
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sales , Round(Sum(a.discount),2) Discount, Round(Sum(a.Profit),2) Profit
from vw_SalesReport a where isnull(a.returned,'')<>'Yes';
go
select * from vw_SaleSummary;
go

```

Type	Records	Orders	Customers	Products	Regions	Segments	ShopModes	Quantity	Sales	Discount	Profit
Total Sales	9994	5009	793	1850	4	3	4	37873	2297200.86	1561.09	286397.02
Total Return Sale	800	296	247	646	4	3	4	3053	180504.28	114.74	23232.36
Net Sales	9194	4713	791	1842	4	3	4	34820	2116696.58	1446.35	263164.66

Q 3. Find top 3 products by sale and profit.

```

--Top 3 Products by Sales Order
select top 3 a.ProductName , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.ProductName
order by count(a.OrderId) desc;

--Top 3 Products by Profit
select top 3 a.ProductName , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.ProductName
order by Round(sum(a.Profit),2) desc;

```

ProductName	Orders	Customers	Quantity	Sale	Profit
Staple envelope	48	45	170	1686.81	751.63
Staples	46	43	215	755.47	292.2
Easy-staple paper	46	46	150	2504.19	1096.03

  

ProductName	Orders	Customers	Quantity	Sale	Profit
Canon imageCLASS 2200 Advanced Copier	5	5	20	61599.82	25199.93
Fellowes PB500 Electric Punch Plastic Comb Bindin...	10	10	31	27453.38	7753.04
Hewlett Packard LaserJet 3310 Copier	8	8	38	18839.69	6983.88

Q 4. Find category wise top 3 products by sale.

```
--Categorywise Top 3 products by Sale
WITH Top3Products AS (
    SELECT a.Category, a.Productname, Round(sum(a.Sales),2) Sales, Round(sum(a.Profit),2) Profit,
           ROW_NUMBER() OVER(PARTITION BY category ORDER BY Round(sum(a.Sales),2) DESC) AS rn
    FROM vw_SalesReport a
    group by a.Category, a.Productname
)
SELECT Category, Productname, Sales, Profit
FROM Top3Products
WHERE rn <= 3
Order by Category, Sales desc;
```

Category	Productname	Sales	Profit
Furniture	HON 5400 Series Task Chairs for Big and Tall	21870.58	0
Furniture	Riverside Palais Royal Lawyers Bookcase, Royale C...	15610.97	-669.54
Furniture	Bretford Rectangular Conference Table Tops	12995.29	-327.23
Office Supplies	Fellowes PB500 Electric Punch Plastic Comb Bindi...	27453.38	7753.04
Office Supplies	GBC DocuBind TL300 Electric Binding System	19823.48	2233.51
Office Supplies	GBC Ibimaster 500 Manual ProClick Binding System	19024.5	760.98
Technology	Canon imageCLASS 2200 Advanced Copier	61599.82	25199.93
Technology	Cisco TelePresence System EX90 Videoconferenci...	22638.48	-1811.08
Technology	Hewlett Packard LaserJet 3310 Copier	18839.69	6983.88

Q 5. Find category wise top 3 products by profit.

```
--Categorywise Top 3 products by Profit
WITH Top3Products AS (
    SELECT a.Category, a.Productname, Round(sum(a.Sales),2) Sales, Round(sum(a.Profit),2) Profit,
           ROW_NUMBER() OVER(PARTITION BY category ORDER BY Round(sum(a.Profit),2) DESC) AS rn
    FROM vw_SalesReport a
    group by a.Category, a.Productname
)
SELECT Category, Productname, Sales, Profit
FROM Top3Products
WHERE rn <= 3
Order by Category, Profit desc;
```

Category	Productname	Sales	Profit
Furniture	Hon Deluxe Fabric Upholstered Stacking Chairs, Ro...	10637.53	1927.44
Furniture	Global Deluxe High-Back Manager's Chair	8665.19	1558.59
Furniture	Hon Pagoda Stacking Chairs	6483.8	1540.7
Office Supplies	Fellowes PB500 Electric Punch Plastic Comb Bindi...	27453.38	7753.04
Office Supplies	Ibico EPK-21 Electric Binding System	15875.92	3345.28
Office Supplies	Honeywell Enviracaire Portable HEPA Air Cleaner fo...	11304.44	3247.02
Technology	Canon imageCLASS 2200 Advanced Copier	61599.82	25199.93
Technology	Hewlett Packard LaserJet 3310 Copier	18839.69	6983.88
Technology	Canon PC1060 Personal Laser Copier	11619.83	4570.93

Q 6. Find top 3 customers by sale and profit.

```

--Top 3 Customers by Orders
select top 3 a.CustomerName , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.CustomerName
order by count(a.OrderId) desc;

--Top 3 Customers by Profit
select top 3 a.CustomerName , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.CustomerName
order by Round(sum(a.Profit),2) desc;

```

CustomerName	Orders	Customers	Quantity	Sale	Profit
William Brown	37	1	146	6160.1	714.33
Paul Prost	34	1	138	7252.61	1495.09
John Lee	34	1	143	9799.92	228.91

  

CustomerName	Orders	Customers	Quantity	Sale	Profit
Tamara Chand	12	1	42	19052.22	8981.32
Raymond Buch	18	1	71	15117.34	6976.1
Sanjit Chand	22	1	87	14142.33	5757.41

Q 7. Find top and bottom 3 cities by sales orders.

```

--Top 3 City by Orders
select top 3 a.City , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.City
order by count(a.OrderId) desc;

--Bottom 3 City by Orders
select top 3 a.City , count(a.OrderId) Orders, count(distinct a.CustomerName) Customers
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.City
order by count(a.OrderId) asc;

```

City	Orders	Customers	Quantity	Sale	Profit
New York City	915	355	3417	256368.16	62036.98
Los Angeles	747	304	2879	175851.34	30440.76
Philadelphia	537	239	1981	109077.01	-13837.77

  

City	Orders	Customers	Quantity	Sale	Profit
Aberdeen	1	1	3	25.5	6.63
Abilene	1	1	2	1.39	-3.76
Antioch	1	1	3	19.44	9.33

Q 8. Find Region wise sales summary.

```
--Regionwise Sales Summary
select a.Region ,count(a.OrderId) Orders,count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
,sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.region
;
```

Region	Orders	Customers	Products	Quantity	Sale	Profit
Central	2323	629	1295	8780	501239.89	39706.36
East	2848	674	1415	10618	678781.24	91522.78
South	1620	512	1042	6209	391721.91	46749.43
West	3203	686	1503	12266	725457.82	108418.45

Q 9. Find ship mode wise sales summary.

```
--Ship Modewise Summary
select a.ShipMode ,count(a.OrderId) Orders,count(distinct a.CustomerName) Customers
,count(distinct a.ProductName) Products
,sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.ShipMode;
```

ShipMode	Orders	Customers	Products	Quantity	Sale	Profit
First Class	1538	494	1049	5693	351428.42	48969.84
Same Day	543	227	464	1960	128363.13	15891.76
Second Class	1945	550	1191	7423	459193.57	57446.64
Standard Class	5968	774	1761	22797	1358215.74	164088.79

Q 10. Find segment wise sales summary.

```
--Segmentwise Sales Summary
select a.Segment ,count(a.OrderId) Orders,count(distinct a.CustomerName) Customers
,count(distinct a.ProductName) Products
,sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.Segment;
```

Segment	Orders	Customers	Products	Quantity	Sale	Profit
Consumer	5191	409	1704	19521	1161401.34	134119.21
Corporate	3020	236	1444	11608	706146.37	91979.13
Home Office	1783	148	1106	6744	429653.15	60298.68

Q 11. Find category wise sales summary.

```
--Categorywise Sales Summary
select a.Category ,count(a.OrderId) Orders,count(distinct a.CustomerName) Customers
      ,count(distinct a.ProductName) Products
      ,sum(a.Quantity) Quantity,Round(sum(a.Sales),2) Sale,Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.Category;
```

Category	Orders	Customers	Products	Quantity	Sale	Profit
Furniture	2121	707	380	8028	741999.8	18451.27
Office Supplies	6026	788	1058	22906	719047.03	122490.8
Technology	1847	687	412	6939	836154.03	145454.95

Q 12. Find category wise sales summary.

```
--Categorywise Sales Summary
select a.Category ,count(a.OrderId) Orders,count(distinct a.CustomerName) Customers
      ,count(distinct a.ProductName) Products
      ,sum(a.Quantity) Quantity,Round(sum(a.Sales),2) Sale,Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.Category;
```

Category	Orders	Customers	Products	Quantity	Sale	Profit
Furniture	2121	707	380	8028	741999.8	18451.27
Office Supplies	6026	788	1058	22906	719047.03	122490.8
Technology	1847	687	412	6939	836154.03	145454.95

Q 13. Find category, subcategory wise sales summary.

```
--Category Subcategorywise Sales Summary
select a.Category ,a.[Sub-Category],count(a.OrderId) Orders
      ,count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
      ,sum(a.Quantity) Quantity,Round(sum(a.Sales),2) Sale,Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by a.Category,a.[Sub-Category];
```

Category	Sub-Category	Orders	Customers	Products	Quantity	Sale	Profit
Furniture	Bookcases	228	195	50	868	114880	-3472.56
Furniture	Chairs	617	407	88	2356	328449.1	26590.17
Furniture	Furnishings	957	528	186	3563	91705.16	13059.14
Furniture	Tables	319	261	56	1241	206965.53	-17725.48
Office Supplies	Appliances	466	356	97	1729	107532.16	18138.01
Office Supplies	Art	796	494	157	3000	27118.79	6527.79
Office Supplies	Binders	1523	650	211	5974	203412.73	30221.76
Office Supplies	Envelopes	254	206	44	906	16476.4	6964.18
Office Supplies	Fasteners	217	191	34	914	3024.28	949.52
Office Supplies	Labels	364	281	70	1400	12486.31	5546.25
Office Supplies	Paper	1370	611	277	5178	78479.21	34053.57
Office Supplies	Storage	846	514	132	3158	223843.61	21278.83
Office Supplies	Supplies	190	160	36	647	46673.54	-1189.1
Technology	Accessories	775	474	147	2976	167380.32	41936.64
Technology	Copiers	68	64	13	234	149528.03	55617.82
Technology	Machines	115	99	63	440	189238.63	3384.76
Technology	Phones	889	511	189	3289	330007.05	44515.73

Q 14. Find shipping day wise sales summary.

```
--Shipping Daywise Sales Summary
select DateDiff(day, cast(a.OrderDate as date),a.ShipDate) ShipDays
, count(a.OrderId) Orders, count(distinct a.CustomerName) Customers, count(distinct a.ProductName) Products
, sum(a.Quantity) Quantity, Round(sum(a.Sales),2) Sale, Round(sum(a.Profit),2) Profit
from vw_SalesReport a
group by DateDiff(day, cast(a.OrderDate as date),a.ShipDate)
order by DateDiff(day, cast(a.OrderDate as date),a.ShipDate);
```

ShipDays	Orders	Customers	Products	Quantity	Sale	Profit
0	519	217	444	1864	124907.69	15385.97
1	369	162	336	1384	67975.33	7541.23
2	1336	461	946	4995	368693.53	53196.08
3	1004	365	752	3807	204448.09	26791.07
4	2770	651	1404	10649	631045.32	71058.09
5	2168	596	1259	8208	494760.65	58771.46
6	1205	426	855	4554	240653.91	33314.44
7	621	249	516	2402	164635.97	20313.16
8	2	1	2	10	80.36	25.52