



TP06

# INTRO TO DATABASE



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## Do Davin



```
USE classicmodels;
```

```
-- 1. Show rst name and last name of customer from France.  
-- (Hint: SELECT, WHERE clause on country column from customers)
```

```
SELECT contactLastName, contactFirstName FROM Customers WHERE country = 'France';
```

	contactLastName	contactFirstName
►	Schmitt	Carine
	Labrune	Janine
	Saveley	Mary
	Rancé	Martine
	Bertrand	Marie
	Citeaux	Frédérique
	Roulet	Annette
	Da Silva	Daniel
	Tonini	Daniel

```
-- 2. Show the rst name and last name of employee who is a sale manager.  
-- (Hint: SELECT, WHERE on jobTitle in employees)
```

```
SELECT firstName, lastName, jobTitle FROM Employees WHERE jobTitle LIKE  
'sale%manager%';
```

	firstName	lastName	jobTitle
►	William	Patterson	Sales Manager (APAC)
	Gerard	Bondur	Sale Manager (EMEA)
	Anthony	Bow	Sales Manager (NA)

```
-- 3. Pair the name and number of employees along with the name of his/her  
advisor.  
-- (Hint: SELF JOIN on employees using employeeNumber = reportsTo)
```

```
SELECT concat(e1.firstName, ' ', e1.lastName) as name,  
       e2.employeeNumber, concat(e2.firstName, ' ', e2.lastName) AS AdvName FROM
```

```
employees AS e1
  LEFT JOIN employees AS e2 ON e1.reportsTo = e2.employeeNumber;
```

	name	employeeNumber	AdvName
▶	Diane Murphy	NULL	NULL
	Mary Patterson	1002	Diane Murphy
	Jeff Firrelli	1002	Diane Murphy
	William Patterson	1056	Mary Patterson
	Gerard Bondur	1056	Mary Patterson
	Anthony Bow	1056	Mary Patterson
	Leslie Jennings	1143	Anthony Bow
	Leslie Thompson	1143	Anthony Bow

```
-- 4. Pair the name and number of customers along with the name of sale
representative that works with
-- them. If the sale representative is null, replace iwith N/A.**
-- (Hint: LEFT JOIN between customers and employees with COALESCE)
```

```
SELECT c.contactLastName, c.contactFirstName, e.lastName, e.firstName
FROM customers AS c JOIN employees AS e
ON c.salesRepEmployeeNumber = e.employeeNumber;
```

	contactLastName	contactFirstName	lastName	firstName
▶	Schmitt	Carine	Hernandez	Gerard
	King	Jean	Thompson	Leslie
	Ferguson	Peter	Fixter	Andy
	Labrune	Janine	Hernandez	Gerard
	Bergulfsen	Jonas	Jones	Barry
	Nelson	Susan	Jennings	Leslie
	Keitel	Roland	Jones	Barry
	Murphy	Julie	Jennings	Leslie
	Lee	Kwai	Vanau	George

```
-- 5. Show information of customer, if the creditlimit is greater than 80000, then
the customer is VIP. If not,
-- he is normal.
-- (Hint: SELECT, CASE WHEN or IF on creditLimit from customers)
```

```
SELECT *, IF(creditLimit > 80000, 'VIP', 'NORMAL') AS status FROM customers;
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit	status
103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale	NULL	Nantes	NULL	44000	France	1370	21000	NORMAL
112	Signal Gift Stores	King	Jean	7025551838	8489 Strong St.	NULL	Las Vegas	NV	83030	USA	1166	71800	NORMAL
114	Australian Collectors, Co.	Ferguson	Peter	03 9520 4555	636 St Kilda Road	Level 3	Melbourne	Victoria	3004	Australia	1611	117300	VIP
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France	1370	118200	VIP
121	Baane Mini Imports	Bergulfsen	Jonas	07-98 9555	Erling Skakkes gate 78	NULL	Stavern	NULL	4110	Norway	1504	81700	VIP
124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.	NULL	San Rafael	CA	97562	USA	1165	210500	VIP
125	Havel & Zbyszek Co	Piestrzeniewicz	Zbyszek	(26) 642-7555	ul. Filtrów 68	NULL	Warszawa	NULL	01-012	Poland	NULL	0	NORMAL
128	Blauer See Auto, Co.	Keitel	Roland	+49 69 66 90 2555	Lyonerstr. 34	NULL	Frankfurt	NULL	60528	Germany	1504	59700	NORMAL
170	Mini Wholesale Co.	Munshi	Vijay	6505555787	5557 North Bendale Street	NULL	San Francisco	CA	04717	USA	1165	64600	NORMAL

Result 16 x

- 6. Show all products which are in "classic car" product line.
- (Hint: SELECT, WHERE on productLine from products)

```
SELECT * FROM products WHERE productLine LIKE '%classic%car%';
```

productCode	productName	productLine	productScale	productVendor	productDescription	quantityInStock	buyPrice	MSRP
S10_1949	1952 Alpine Renault 1300	Classic Cars	1:10	Classic Metal Creations	Turnable front wheels; steering function; detail...	7305	98.58	214.3
S10_4757	1972 Alfa Romeo GTA	Classic Cars	1:10	Motor City Art Classics	Features include: Turnable front wheels; steeri...	3252	85.68	136
S10_4962	1962 Lancia Delta 16V	Classic Cars	1:10	Second Gear Diecast	Features include: Turnable front wheels; steeri...	6791	103.42	147.74
S12_1099	1968 Ford Mustang	Classic Cars	1:12	Autoart Studio Design	Hood, doors and trunk all open to reveal highly ...	68	95.34	194.57
S12_1108	2001 Ferrari Enzo	Classic Cars	1:12	Second Gear Diecast	Turnable front wheels; steering function; detail...	3619	95.59	207.8
S12_3148	1969 Corvair Monza	Classic Cars	1:18	Welly Diecast Productions	1:18 scale die-cast about 10" long doors open, ...	6906	89.14	151.08
S12_3380	1968 Dodge Charger	Classic Cars	1:12	Welly Diecast Productions	1:12 scale model of a 1968 Dodge Charger. Ho...	9123	75.16	117.44
S12_3891	1969 Ford Falcon	Classic Cars	1:12	Second Gear Diecast	Turnable front wheels; steering function; detail...	1049	83.05	173.02
S12_3900	1970 Plymouth Hemi Cuda	Classic Cars	1:12	Studio M Art Models	Very detailed 1970 Plymouth Cuda model in 1:1	5663	31.07	70.8

- 7. Show all products containing "Toyota" in its name.
- (Hint: SELECT, LIKE clause on productName from products)

```
SELECT * FROM products WHERE productName LIKE '%Toyota%';
```

productCode	productName	productLine	productScale	productVendor	productDescription	quantityInStock	buyPrice	MSRP
S18_3233	1985 Toyota Supra	Classic Cars	1:18	Highway 66 Mini Classics	This model features soft rubber tires, working s...	7733	57.01	107.57
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- 8. Show all products with the scale smaller than 1:24.
- (Hint: SELECT, consider CAST/CONVERT on productScale string if comparison needed)

```
SELECT * FROM products WHERE CAST(SUBSTRING_INDEX(productScale, ':', -1) AS DECIMAL) < 24;
```

productCode	productName	productLine	productScale	productVendor	productDescription	quantityInStock	buyPrice	MSRP
S10_1678	1969 Harley Davidson Ultimate Chopper	Motorcycles	1:10	Min Lin Diecast	This replica features working kickstand, front su...	7933	48.81	95.7
S10_1949	1952 Alpine Renault 1300	Classic Cars	1:10	Classic Metal Creations	Turnable front wheels; steering function; detail...	7305	98.58	214.3
S10_2016	1996 Moto Guzzi 1100i	Motorcycles	1:10	Highway 66 Mini Classics	Official Moto Guzzi logos and insignias, saddle b...	6625	68.99	118.94
S10_4698	2003 Harley-Davidson Eagle Drag Bike	Motorcycles	1:10	Red Start Diecast	Model features, official Harley Davidson logos a...	5582	91.02	193.66
S10_4757	1972 Alfa Romeo GTA	Classic Cars	1:10	Motor City Art Classics	Features include: Turnable front wheels; steeri...	3252	85.68	136
S10_4962	1962 Lancia Delta 16V	Classic Cars	1:10	Second Gear Diecast	Features include: Turnable front wheels; steeri...	6791	103.42	147.74
S12_1099	1968 Ford Mustang	Classic Cars	1:12	Autoart Studio Design	Hood, doors and trunk all open to reveal highly ...	68	95.34	194.57
S12_1108	2001 Ferrari Enzo	Classic Cars	1:12	Second Gear Diecast	Turnable front wheels; steering function; detail...	3619	95.59	207.8
S12_1666	1958 Setra Bus	Trucks and Buses	1:12	Welly Diecast Productions	Model features 30 windows, headlights & plane re...	1570	77.0	136.67

products 19 x

- 9. Show all products from the vendor "Autoart Studio Design".
- (Hint: SELECT, WHERE on productVendor from products)

```
SELECT * FROM products WHERE productVendor LIKE '%autoart%studio%design%';
```

	productCode	productName	productLine	productScale	productVendor	productDescription	quantityInStock	buyPrice	MSRP
▶	S12_1099	1968 Ford Mustang	Classic Cars	1:12	Autoart Studio Design	Hood, doors and trunk all open to reveal highly ...	68	95.34	194.57
	S18_2325	1932 Model A Ford J-Coupe	Vintage Cars	1:18	Autoart Studio Design	This model features grille-mounted chrome horn...	9354	58.48	127.13
	S24_1578	1997 BMW R 1100 S	Motorcycles	1:24	Autoart Studio Design	Detailed scale replica with working suspension a...	7003	60.86	112.7
	S24_2300	1962 Volkswagen Microbus	Trucks and Buses	1:24	Autoart Studio Design	This 1:18 scale die cast replica of the 1962 Micr...	2327	61.34	127.79
	S24_2841	1900s Vintage Bi-Plane	Planes	1:24	Autoart Studio Design	Hand crafted diecast-like metal bi-plane is re-cr...	5942	34.25	68.51
	S24_3420	1937 Horch 930V Limousine	Vintage Cars	1:24	Autoart Studio Design	Features opening hood, opening doors, openin...	2902	26.3	65.75
	S50_4713	2002 Yamaha YZR M1	Motorcycles	1:50	Autoart Studio Design	Features rotating wheels , working kick stand. ...	600	34.17	81.36
	S700_1138	The Schooner Bluenose	Ships	1:700	Autoart Studio Design	All wood with canvas sails. Measures 31 1/2 inc...	1897	34	66.67

- 10. Show all products with MSRP higher than twice the cost of buyPrice.  
 -- (Hint: SELECT, WHERE with comparison expression: MSRP > 2 \* buyPrice)

```
SELECT * FROM products WHERE MSRP > 2 * buyPrice;
```

	productCode	productName	productLine	productScale	productVendor	productDescription	quantityInStock	buyPrice	MSRP
▶	S10_1949	1952 Alpine Renault 1300	Classic Cars	1:10	Classic Metal Creations	Turnable front wheels; steering function; detail...	7305	98.58	214.3
	S10_4698	2003 Harley-Davidson Eagle Drag Bike	Motorcycles	1:10	Red Start Diecast	Model features, official Harley Davidson logos a...	5582	91.02	193.66
	S12_1099	1968 Ford Mustang	Classic Cars	1:12	Autoart Studio Design	Hood, doors and trunk all open to reveal highly ...	68	95.34	194.57
	S12_1108	2001 Ferrari Enzo	Classic Cars	1:12	Second Gear Diecast	Turnable front wheels; steering function; detail...	3619	95.59	207.8
	S12_2823	2002 Suzuki XREO	Motorcycles	1:12	Unimax Art Galleries	Official logos and insignias, saddle bags located ...	9997	66.27	150.62
	S12_3891	1969 Ford Falcon	Classic Cars	1:12	Second Gear Diecast	Turnable front wheels; steering function; detail...	1049	83.05	173.02
	S12_3990	1970 Plymouth Hemi Cuda	Classic Cars	1:12	Studio M Art Models	Very detailed 1970 Plymouth Cuda model in 1:1...	5663	31.92	79.8
	S12_4473	1957 Chevy Pickup	Trucks and Buses	1:12	Exoto Designs	1:12 scale die-cast about 20" long Hood opens, ...	6125	55.7	118.5
	S18_1907	1940 Ford Pickup Truck	Trucks and Buses	1:18	Studio M Art Models	This model features soft rubber tires, working e...	2613	58.33	116.67

- 11. Show information of sale representative of the customer "Land of Toys Inc."  
 -- (Hint: JOIN between customers and employees on salesRepEmployeeNumber)

```
SELECT * FROM customers AS c JOIN employees AS e ON c.salesRepEmployeeNumber =  
e.employeeNumber WHERE customerName LIKE '%land%of%toys%inc%';
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit	employeeNumber	lastName	firstName	extension
▶ 131	Land of Toys Inc.	Lee	Kivali	2125557818	897 Long Airport Avenue		NYC	NY	10022	USA	1323	114900	1323	Vanauf	George	x4102

- 12. Show information about order that is shipped later than the required date.  
 -- (Hint: SELECT, WHERE on orders with shippedDate > requiredDate)

```
SELECT * FROM orders WHERE shippedDate > requiredDate;
```

orderNumber	orderDate	requiredDate	shippedDate	status	comments	customerNumber
▶ 10165	2003-10-22	2003-10-31	2003-12-26	Shipped	This order was on hold because customers's credit limit had been exceeded. Order will ship when payment is received	148

- 13. Show all orders made by "La Rochelle Gifts".  
 -- (Hint: JOIN between orders and customers on customerNumber, WHERE customerName)

```
SELECT *, customerName FROM orders JOIN customers WHERE customerName LIKE  
'%la%rochelle%gifts';
```

orderNumber	orderDate	requiredDate	shippedDate	status	comments	customerNumber	customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state
10100	2003-01-06	2003-01-13	2003-01-10	Shipped		363	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10101	2003-01-09	2003-01-18	2003-01-11	Shipped	Check on availability.	128	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10102	2003-01-10	2003-01-18	2003-01-14	Shipped		181	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10103	2003-01-29	2003-02-07	2003-02-02	Shipped		121	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10104	2003-01-31	2003-02-09	2003-02-01	Shipped		141	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10105	2003-02-11	2003-02-21	2003-02-12	Shipped		145	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10106	2003-02-17	2003-02-24	2003-02-21	Shipped		278	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	
10107	2003-02-24	2003-03-03	2003-02-26	Shipped	Difficult to negotiate	171	119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes	

addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit	customerName
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts
67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	La Rochelle Gifts

- 14. Show all products ordered by "La Rochelle Gifts".  
 -- (Hint: JOIN across customers, orders, orderdetails, and products)

```
SELECT * FROM customers AS c
  JOIN orders AS o ON c.customerNumber = o.customerNumber
  JOIN orderdetails AS od ON o.orderNumber = od.orderNumber
  JOIN products AS p ON p.productCode = od.productCode
 WHERE c.customerName = 'La Rochelle Gifts';
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit	orderNumber	orderDate	requiredDate
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages		Nantes		44000	France	1370	118200	10275	2004-07-23	2004-08-02

- 15. Show customer's name who has ordered more than 15 products in once.  
 -- (Hint: JOIN, GROUP BY, HAVING, count quantityOrdered)

```
SELECT c.customerName FROM customers c
  JOIN orders o ON c.customerNumber = o.customerNumber
  JOIN orderdetails od ON o.orderNumber = od.orderNumber
 GROUP BY o.orderNumber
 HAVING SUM(od.quantityOrdered) > 15;
```

	customerName
▶	Online Diecast Creations Co.
	Blauer See Auto, Co.
	Vitachrome Inc.
	Baane Mini Imports
	Euro+ Shopping Channel
	Danish Wholesale Imports
	Rovelli Gifts
	Land of Toys Inc.

```
-- 16. Show the best-selling product in "2004-02".
-- (Hint: JOIN, SUM(quantityOrdered), GROUP BY, ORDER BY, LIMIT 1, lter orderDate
by
-- month)
```

```
SELECT p.productName, SUM(od.quantityOrdered) AS totalSold
  FROM orderdetails od
 JOIN orders o ON od.orderNumber = o.orderNumber
 JOIN products p ON od.productCode = p.productCode
 WHERE o.orderDate LIKE '2004-02%'
 GROUP BY p.productCode
 ORDER BY totalSold DESC
 LIMIT 1;
```

Result Grid		Filter Rows:
	productName	totalSold
▶	1992 Ferrari 360 Spider red	77

```
-- 17. Find the lowest sale price of each product.
-- (Hint: SELECT, MIN(priceEach), GROUP BY productCode from orderdetails)
```

```
SELECT productCode, MIN(priceEach) FROM orderdetails GROUP BY productCode;
```



	productCode	MIN(priceEach)
▶	S10_1678	76.56
	S10_1949	171.44
	S10_2016	95.15
	S10_4698	154.93
	S10_4757	108.8
	S10_4962	119.67
	S12_1099	155.66
	S12_1108	166.24
	S12_1666	109.34

```
-- 18. Find the biggest gap of sale price of each product.
-- (Hint: SELECT, MAX(priceEach) - MIN(priceEach), GROUP BY productCode)
```

```
SELECT productCode, MAX(priceEach) - MIN(priceEach) AS priceGap FROM orderdetails
GROUP BY productCode;
```

	productCode	priceGap
▶	S10_1678	19.14
	S10_1949	42.8600000000000014
	S10_2016	23.7899999999999992
	S10_4698	38.7299999999999999
	S10_4757	27.2000000000000003
	S10_4962	28.0700000000000007
	S12_1099	36.9600000000000001
	S12_1108	41.56
	S12_1666	27.3700000000000004

```
-- 19. Find the product with the biggest gap of sale price.
-- (Hint: Use subquery from #18, ORDER BY gap DESC, LIMIT 1)
```

```
SELECT productCode, priceGap FROM (
    SELECT productCode, MAX(priceEach) - MIN(priceEach) AS priceGap FROM
orderdetails
    GROUP BY productCode
) AS priceGaps
ORDER BY priceGap DESC
LIMIT 1;
```



Result Grid			Filter Rows:
	productCode	priceGap	
▶	S10_1949	42.8600000000000014	

```
-- 20. Find the total cost of all orders of each customer.
-- (Hint: JOIN customers, orders, orderdetails; SUM(priceEach * quantityOrdered),
-- GROUP BY customer)
```

```
SELECT c.customerName, SUM(od.priceEach * od.quantityOrdered) AS totalOrderCost
FROM customers c
JOIN orders o ON c.customerNumber = o.customerNumber
JOIN orderdetails od ON o.orderNumber = od.orderNumber
GROUP BY c.customerNumber;
```

Result Grid			Filter Rows:
	customerName	totalOrderCost	
▶	Atelier graphique	22314.36	
	Signal Gift Stores	80180.97999999998	
	Australian Collectors, Co.	180585.07	
	La Rochelle Gifts	158573.11999999997	
	Baane Mini Imports	104224.78999999996	
	Mini Gifts Distributors Ltd.	591827.33999999996	
	Blauer See Auto, Co.	75937.76	
	Mini Wheels Co.	66710.56	
	Land of Toys Inc.	140085.14000000007	

```
-- 21. Find the top customer (with the highest total sale cost) of each city.
-- (Hint: JOIN, SUM(...), GROUP BY city, customerName, RANK() or ROW_NUMBER()
partitioned
-- by city)
```

```
WITH CustomerSale AS (
  SELECT c.customerName, c.city,
  SUM(od.priceEach * od.quantityOrdered) AS totalSale,
  ROW_NUMBER() OVER (PARTITION BY c.city ORDER BY SUM(od.priceEach *
od.quantityOrdered) DESC) AS rankInCity
  FROM customers c
  JOIN orders o ON c.customerNumber = o.customerNumber
  JOIN orderdetails od ON o.orderNumber = od.orderNumber
  GROUP BY c.customerNumber, c.city
)
SELECT customerName, city, totalSale
FROM CustomerSale
WHERE rankInCity = 1;
```

	customerName	city	totalSale
►	Diecast Classics Inc.	Allentown	104358.69
	Down Under Souvenirs, Inc	Auckland	154622.08000000005
	Enaco Distributors	Barcelona	68520.47
	Rovelli Gifts	Bergamo	127529.68999999999
	Herkku Gifts	Bergen	97562.46999999999
	Gifts4AllAges.com	Boston	84340.32
	Collectables For Less Inc.	Brickhaven	73533.65000000001
	Gift Depot Inc.	Bridgewater	95424.63
	Signal Collectibles Ltd	Brisbane	42570.37

```
-- 22. Show monthly income, purchase expense, and profit in a specific year. An order
that is placed in which
-- month would be considered as part of income of that month; the state of
shipment and payment are
-- taken into account.
-- (Hint: JOIN, use MONTH(orderDate), SUM(quantityOrdered * priceEach), buyPrice,
GROUP
-- BY MONTH)
```

```
SELECT
    MONTH(o.orderDate) AS month,
    SUM(od.quantityOrdered * od.priceEach) AS income,
    SUM(od.quantityOrdered * p.buyPrice) AS expense,
    SUM(od.quantityOrdered * (od.priceEach - p.buyPrice)) AS profit
FROM orders o
JOIN orderdetails od ON o.orderNumber = od.orderNumber
JOIN products p ON od.productCode = p.productCode
WHERE YEAR(o.orderDate) = 2004
GROUP BY MONTH(o.orderDate)
ORDER BY month;
```

	month	income	expense	profit
1		292385.210000000014	172932.180000000002	119453.030000000001
2		289502.839999999997	175959.490000000002	113543.349999999999
3		217691.26	131090.900000000002	86600.360000000004
4		187575.770000000005	111671.98	75903.790000000002
5		248325.300000000008	145175.28	103150.020000000003
6		343370.739999999993	204348.590000000003	139022.150000000001
7		325563.490000000001	197367.700000000004	128195.790000000001
8		419327.089999999999	252568.510000000013	166758.580000000005
9		783700.700000000000	160116.140000000007	114683.650000000005

```
-- 23. The same as number 14, but we want months as columns and incomes,
purchase_expense, and profit as
-- rows.
-- (Hint: PIVOT or CASE WHEN with aggregation in SELECT to simulate pivot)
```

```
SELECT
```

```
    'Income' AS financial_type,
    SUM(CASE WHEN MONTH(o.orderDate) = 1 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS January,
    SUM(CASE WHEN MONTH(o.orderDate) = 2 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS February,
    SUM(CASE WHEN MONTH(o.orderDate) = 3 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS March,
    SUM(CASE WHEN MONTH(o.orderDate) = 4 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS April,
    SUM(CASE WHEN MONTH(o.orderDate) = 5 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS May,
    SUM(CASE WHEN MONTH(o.orderDate) = 6 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS June,
    SUM(CASE WHEN MONTH(o.orderDate) = 7 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS July,
    SUM(CASE WHEN MONTH(o.orderDate) = 8 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS August,
    SUM(CASE WHEN MONTH(o.orderDate) = 9 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS September,
    SUM(CASE WHEN MONTH(o.orderDate) = 10 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS October,
    SUM(CASE WHEN MONTH(o.orderDate) = 11 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS November,
    SUM(CASE WHEN MONTH(o.orderDate) = 12 THEN od.quantityOrdered * od.priceEach
ELSE 0 END) AS December
FROM orders o
JOIN orderdetails od ON o.orderNumber = od.orderNumber
JOIN products p ON od.productCode = p.productCode
WHERE YEAR(o.orderDate) = 2004
```

```
UNION ALL
```

```

SELECT
    'Purchase Expense' AS financial_type,
    SUM(CASE WHEN MONTH(o.orderDate) = 1 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 2 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 3 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 4 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 5 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 6 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 7 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 8 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 9 THEN od.quantityOrdered * p.buyPrice ELSE
0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 10 THEN od.quantityOrdered * p.buyPrice
ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 11 THEN od.quantityOrdered * p.buyPrice
ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 12 THEN od.quantityOrdered * p.buyPrice
ELSE 0 END)
FROM orders o
JOIN orderdetails od ON o.orderNumber = od.orderNumber
JOIN products p ON od.productCode = p.productCode
WHERE YEAR(o.orderDate) = 2004

```

UNION ALL

```

SELECT
    'Profit' AS financial_type,
    SUM(CASE WHEN MONTH(o.orderDate) = 1 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 2 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 3 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 4 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 5 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 6 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 7 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 8 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),
    SUM(CASE WHEN MONTH(o.orderDate) = 9 THEN od.quantityOrdered * (od.priceEach -
p.buyPrice) ELSE 0 END),

```

```
SUM(CASE WHEN MONTH(o.orderDate) = 10 THEN od.quantityOrdered * (od.priceEach
- p.buyPrice) ELSE 0 END),
SUM(CASE WHEN MONTH(o.orderDate) = 11 THEN od.quantityOrdered * (od.priceEach
- p.buyPrice) ELSE 0 END),
SUM(CASE WHEN MONTH(o.orderDate) = 12 THEN od.quantityOrdered * (od.priceEach
- p.buyPrice) ELSE 0 END)
FROM orders o
JOIN orderdetails od ON o.orderNumber = od.orderNumber
JOIN products p ON od.productCode = p.productCode
WHERE YEAR(o.orderDate) = 2004;
```

Result Grid											
Filter Rows:		Export:		Wrap Cell Content:							
financial_type	January	February	March	April	May	June	July	August	September	October	November
Income	292385.21000000014	289502.83999999997	217691.26	187575.77000000005	248325.30000000008	343370.73999999993	325563.4900000001	419327.08999999999	283799.79999999999	500233.85999999999	97929.79999999999
Purchase Expense	172932.18000000002	175959.49000000002	131090.90000000002	111671.98	145175.28	204348.59000000003	197367.70000000004	252568.51000000013	169116.14999999997	297742.3400000001	58692.79999999999
Profit	119453.03000000011	113543.34999999999	86600.36000000004	75903.79000000002	103150.02000000003	139022.1500000001	128195.79000000001	166758.58000000005	114683.65000000005	202491.51999999996	39237.09999999999