

Server Objects
Application
Management
Agent Profiler

Results Messages

	customer_id	DOB	Gender	city_code
1	268408	1970-01-02	M	4

	prod_cat_code	prod_cat	prod_sub_cat_code	prod_subcat
1	1	Clothing	4	Mens
2	1	Clothing	1	Women
3	1	Clothing	3	Kids
4	2	Footwear	1	Mens
5	2	Footwear	3	Women
6	2	Footwear	4	Kids
7	3	Electronics	4	Mobiles
8	3	Electronics	5	Computers
9	3	Electronics	8	Personal A...
10	3	Electronics	9	Cameras
11	3	Electronics	10	Audio and ...
12	4	Bags	1	Mens
13	4	Bags	4	Women
14	5	Books	7	Fiction
15	5	Books	12	Academic
16	5	Books	10	Non-Fiction
17	5	Books	11	Children
18	5	Books	3	Comics
19	5	Books	6	DIY
20	6	Home an...	2	Furnishing
21	6	Home an...	10	Kitchen
22	6	Home an...	11	Bath
23	6	Home an...	12	Tools

	transaction_id	cust_id	tran_date	prod_subcat_code	prod_cat_code	Qty	Rate	Tax	total_amt	Store_type
1	80712190438	270351	2014-02-28	1	1	-5	-772	405.299987792969	-4265.2998046875	e-Shop

sql - DESKTOP-PS2COKD\SQLEXPRESS02.CASE STUDY1 (DESKTOP-PS2COKD\SHREYA (56)) - Microsoft SQL Server Management Studio

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New Query Execute

STUDY1

sqlcasestudy1.sql...2COKD\SHREYA (56) X

```
--DATA PREPARATION AND UNDERSTANDING
--1. What is the total number of rows in each of the 3 tables in the database?
SELECT * FROM (
    SELECT 'CUSTOMER' AS TABLE_NAME, COUNT(*) AS ROWS_NO FROM Customer UNION ALL
    SELECT 'PROD_CAT_INFO' AS TABLE_NAME,COUNT(*) AS ROWS_NO FROM prod_cat_info UNION ALL
    SELECT 'TRANSACTION' AS TABLE_NAME,COUNT(*) AS ROWS_NO FROM Transactions
) AS TBL
```

148 %

Results Messages

	TABLE_NAME	ROWS_NO
1	CUSTOMER	5647
2	PROD_CAT_INFO	23
3	TRANSACTION	23053

sql.casestudy1.sql...2COKD\SHREYA (56) X

```
SELECT 'TRANSACTION' AS TABLE_NAME,COUNT(*) AS ROWS_NO FROM Transactions
) AS TBL

--2. What is the total number of transactions that has a return?
SELECT COUNT(*) AS TOTAL RETURNS FROM Transactions
WHERE TOTAL_AMT < 0
```

148 %

Results Messages

TOTAL RETURNS
2177

sql.casestudy1.sql...2COKD\SHREYA (56) X

```
WHERE TOTAL_AMT < 0

--3. As you would have noticed, the dates provided across the datasets are not in the correct format.
-- As first steps, please convert the date variables into valid date formats before proceeding ahead
SELECT *,CONVERT(DATE,DOB,105) AS CONVERTED_DATE FROM Customer

--4. What is the time range for transaction date available for analysis? Show the output in number of
148 %
```

Results Messages

customer_id	DOB	Gender	city_code	CONVERTED_DATE	
1	268408	1970-01-02	M	4	1970-01-02
2	269696	1970-01-07	F	8	1970-01-07
3	268159	1970-01-08	F	8	1970-01-08
4	270181	1970-01-10	F	2	1970-01-10
5	268073	1970-01-11	M	1	1970-01-11
6	273216	1970-01-15	F	5	1970-01-15
7	266929	1970-01-15	M	8	1970-01-15
8	275152	1970-01-16	M	4	1970-01-16
9	275034	1970-01-18	F	4	1970-01-18
10	273966	1970-01-21	M	8	1970-01-21
11	270829	1970-01-22	F	8	1970-01-22
12	266997	1970-01-23	M	9	1970-01-23
13	272455	1970-01-25	M	7	1970-01-25
14	274593	1970-01-26	M	10	1970-01-26
15	273391	1970-01-29	F	2	1970-01-29
16	267657	1970-01-29	F	7	1970-01-29
17	271344	1970-01-29	F	5	1970-01-29
18	268275	1970-02-01	F	7	1970-02-01
19	274630	1970-02-01	M	4	1970-02-01

CASE_STUDY1

sql.casestudy1.sql...2COKD\SHREYA (56)

```
--4. What is the time range for transaction date available for analysis? Show the output in number of days, months and years simultaneously in different columns.
SELECT DATEDIFF(DAY,MIN(TRAN_DATE),MAX(TRAN_DATE)) AS DAY_TIME_RANGE FROM Transactions
SELECT DATEDIFF(MONTH,MIN(TRAN_DATE),MAX(TRAN_DATE)) AS MONTH_TIME_RANGE FROM Transactions
SELECT DATEDIFF(YEAR,MIN(TRAN_DATE),MAX(TRAN_DATE)) AS YEAR_TIME_RANGE FROM Transactions
```

148 %

Results Messages

	DAY_TIME_RANGE
1	1130

	MONTH_TIME_RANGE
1	37

	YEAR_TIME_RANGE
1	3

sql.casestudy1.sql - DESKTOP-PS2COKD\SQLEXPRESS02.CASE_STUDY1 (DESKTOP-PS2COKD\SHREYA (56)) - Microsoft SQL Server Management Studio

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New Query | X Open | Save | Save All | Undo | Redo | Cut | Copy | Paste | Find | Replace | Go To | Run | Stop | Refresh | Execute | Save As | Print | Properties | Help |

CASE_STUDY1 | CASE_STUDY1.sql...2C0KD\SHREYA (56) | X

SELECT DATEDIFF(YEAR,MIN(TRAN_DATE),MAX(TRAN_DATE)) AS YEAR_TIME_RANGE FROM Transaction

--5. Which product category does the sub-category 'DIY' belong to?

SELECT prod_cat FROM prod_cat_info
WHERE prod_subcat = 'DIY'

148 %

Results Messages

prod_cat
Books

New Query Execute

ASE_STUDY1

--DATA ANALYSIS

--1. Which channel is most frequently used for transactions?

```
SELECT TOP 1 STORE_TYPE,COUNT(*) AS COUNT_CHANNEL FROM Transactions
GROUP BY Store_type
ORDER BY COUNT_CHANNEL DESC
```

--2. What is the count of males and females customers in the database?

148 %

Results Messages

	STORE_TYPE	COUNT_CHANNEL
1	e-Shop	9311

CASE_STUDY1

sql.casestudy1.sql...2C0KD\SHREYA (56)

```
SELECT TOP 1 STORE_TYPE,COUNT(*) AS COUNT_CHANNEL FROM Transactions
GROUP BY Store_type
ORDER BY COUNT_CHANNEL DESC

--2. What is the count of males and females customers in the database?
SELECT GENDER,COUNT(*) AS GENDER_COUNT FROM Customer
GROUP BY GENDER
```

148 %

Results Messages

	GENDER	GENDER_COUNT
1	NULL	2
2	F	2753
3	M	2892

New Query Execute

sql.casestudy1.sql...2COKD\SHREYA (56) X

```
SELECT GENDER,COUNT(*) AS GENDER_COUNT FROM Customer  
GROUP BY GENDER  
  
--3. From which city do we have the maximum number of customers and how many?  
SELECT TOP 1 CITY_CODE,COUNT(*) AS NO_OF_CUST FROM Customer  
GROUP BY CITY_CODE  
ORDER BY COUNT(*) DESC
```

148 %

Results Messages

	CITY_CODE	NO_OF_CUST
1	3	595

Query Project Tools Window Help

New Query Execute

STUDY1

sql.casestudy1.sql...2COKD\SHREYA (56)

```
--4. How many subcategories are there under books category?  
SELECT COUNT(*) AS SUBCAT_BOOKS FROM prod_cat_info  
WHERE PROD_CAT = 'BOOKS'  
  
--5. What is the maximum quantity of products ever ordered?  
SELECT TOP 1 * FROM Transactions  
ORDER BY OTV DESC
```

148 %

Results Messages

SUBCAT_BOOKS
1 6

```
sql.casestudy1.sql...2COKD\SHREYA (56) ▾ X  
WHERE PROD_CAT = 'BOOKS'
```

--5. What is the maximum quantity of products ever ordered?

```
SELECT TOP 1 * FROM Transactions  
ORDER BY QTY DESC
```

--6. What is the net total revenue generated in categories Electronics and Books?

148 %

Results Messages

	transaction_id	cust_id	tran_date	prod_subcat_code	prod_cat_code	Qty	Rate	Tax	total_amt	Store_type
1	29258453508	270384	2014-02-20	5	3	5	1497	785.924987792969	8270.9248046875	e-Shop

--6. What is the net total revenue generated in categories Electronics and Books?

```
SELECT SUM(TOTAL_REV) AS TOTAL FROM
(SELECT * FROM (SELECT * , CONCAT(Prod_cat_code, ' ', Prod_sub_cat_code) AS CAT_SUBCAT_CODE
FROM prod_cat_info
WHERE Prod_cat IN ('ELECTRONICS', 'BOOKS')) AS T
LEFT JOIN
(SELECT CONCAT(Prod_cat_code, ' ', Prod_subcat_code) AS CAT_SUBCAT, SUM(TOTAL_AMT) AS TOTAL_REV
FROM Transactions
GROUP BY CONCAT(Prod_cat_code, ' ', Prod_subcat_code)) AS TT
ON T.CAT_SUBCAT_CODE = TT.CAT_SUBCAT) AS TTT
```

--7. How many customers have >10 transactions with us, excluding returns?

Results	Messages
TOTAL 1 23545157.6783981	

```
FROM Transactions
GROUP BY CONCAT(Prod_Cat_Code, ' ', Prod_SubCat_Code)) AS TT
ON T.Cat_SubCat_Code = TT.Cat_SubCat) AS TTT

--7. How many customers have >10 transactions with us, excluding returns?
SELECT cust_id, COUNT(*) AS NO_OF_TRANS FROM Transactions
WHERE QTY > 0
GROUP BY cust_id
HAVING COUNT(*) > 10
ORDER BY NO_OF_TRANS DESC

--8. What is the combined revenue earned from the "Electronics" and "Clothing" categories, from
```

148 %

Results Messages

	cust_id	NO_OF_TRANS
1	270803	11
2	272741	11
3	274227	11
4	270535	11
5	266794	11
6	273014	11

--8. What is the combined revenue earned from the "Electronics" and "Clothing" categories, from
-- "Flagship Stores"?

```
SELECT SUM(TOTAL_REV) AS TOTAL FROM
(SELECT * FROM (SELECT *, CONCAT(Prod_cat_code, ' ', Prod_sub_cat_code) AS CAT_SUBCAT_CODE
FROM prod_cat_info
WHERE Prod_cat IN ('ELECTRONICS', 'CLOTHING')) AS T
JOIN
(SELECT CONCAT(Prod_cat_code, ' ', Prod_subcat_code) AS CAT_SUBCAT, SUM(TOTAL_AMT) AS TOTAL_REV
FROM Transactions
WHERE Store_type = 'FLAGSHIP STORE'
GROUP BY CONCAT(Prod_cat_code, ' ', Prod_subcat_code)) AS TT
ON T.CAT_SUBCAT_CODE = TT.CAT_SUBCAT) AS TTT
```

148 %

Results Messages

TOTAL
1 3409559.27131653

--9. What is the total revenue generated from Male customers in Electronics category? Output should
-- display the total revenue by prod subcat.

```
SELECT TOTAL_REV, prod_subcat FROM
(SELECT CONCAT(Prod_Cat_Code, ' ', Prod_SubCat_Code) AS CAT_SUBCAT, SUM(TOTAL_AMT) AS TOTAL_REV FROM Transactions
LEFT JOIN Customer AS TT
ON T.cust_id = TT.customer_Id
WHERE GENDER = 'M'
GROUP BY CONCAT(Prod_Cat_Code, ' ', Prod_SubCat_Code)) AS A
JOIN
(SELECT Prod_SubCat , CONCAT(Prod_Cat_Code, ' ', Prod_Sub_Cat_Code) AS CAT_SUBCAT_CODE
FROM prod_cat_info
WHERE Prod_Cat = 'ELECTRONICS') AS B
ON A.CAT_SUBCAT = B.CAT_SUBCAT_CODE
```

148 %

Results Messages

	TOTAL_REV	prod_subcat
1	1192413.23558207	Mobiles
2	1091417.34134674	Computers
3	1107593.43469238	Personal Appliances
4	1172702.24649048	Cameras
5	1138983.16963196	Audio and video

-- categories in terms of sales.

```
SELECT TOP 5 A.prod_subcat_code, SALES_PERC, RETURN_PERC FROM
(SELECT PROD_SUBCAT_CODE,
(SUM(TOTAL_AMT)/(SELECT SUM(TOTAL_AMT) FROM Transactions WHERE total_amt>0))*100 AS SALES_PERC
FROM Transactions
WHERE total_amt > 0
GROUP BY prod_subcat_code) AS A
JOIN
(SELECT PROD_SUBCAT_CODE,
(SUM(TOTAL_AMT)/(SELECT SUM(TOTAL_AMT) FROM Transactions WHERE total_amt<0))*100 AS RETURN_PERC
FROM Transactions
WHERE total_amt < 0
GROUP BY prod_subcat_code) AS B
ON A.prod_subcat_code = B.prod_subcat_code
ORDER BY SALES_PERC DESC
```

148 %

Results Messages

	prod_subcat_code	SALES_PERC	RETURN_PERC
1	4	17.5621445601352	18.9213007904461
2	3	13.0424711310512	13.7082998793366
3	10	12.9771377260625	12.0118173066878
4	1	12.7983008093742	13.1543810162659
5	11	8.88643954998613	8.85809470749181

sql.casestudy1.sql...2C0KD\SHREYA (56) ✘

```
-- by these consumers in last 30 days of transaction from max transaction date available in data?
SELECT cust_id, CUST_TOTAL_REV FROM(
    SELECT *, DATEDIFF(YEAR,DOB,GETDATE()) AS AGE FROM Customer
    WHERE DATEDIFF(YEAR,DOB,GETDATE()) BETWEEN 25 AND 35) AS T
JOIN
    (SELECT cust_id, SUM(TOTAL_AMT) AS CUST_TOTAL_REV FROM Transactions
    WHERE tran_date > DATEADD(DAY,-30,(SELECT MAX(TRAN_DATE) FROM TRANSACTIONS))
    GROUP BY cust_id) AS TT
ON T.customer_Id = TT.cust_id)
```

148 %

Results Messages

	cust_id	CUST_TOTAL_REV
1	267360	2234.31005859375
2	271288	1346.9949798584
3	268100	4369.169921875
4	273081	3000.07495117188
5	269387	4199
6	269697	6425.5751953125
7	267794	967.97998046875
8	272529	4206.73498535156
9	267651	4071.92504882813
10	267243	-4173.5849609375
11	272515	0
12	267489	782.340026855469
13	273763	2661.94506835938
14	270949	6546.02001953125
15	270633	1098.36999511719
16	267467	2700.6201171875
17	273420	-1748.109985351...
18	267656	0
19	268050	2274.09008789063

--12. Which product category has seen the max value of returns in the last 3 months of transactions?

```
SELECT TOP 1 prod_cat , total_amt FROM (SELECT * , CONCAT(Prod_Cat_Code, ' ', Prod_Sub_Cat_Code) AS PROD_CODE
FROM prod_cat_info) AS A
RIGHT JOIN
(SELECT * , CONCAT(Prod_Cat_Code, ' ', Prod_SubCat_Code) AS TRANS_CODE
FROM Transactions
WHERE tran_date >= DATEADD(MONTH, -3, (SELECT MAX(TRAN_DATE) FROM TRANSACTIONS)) AND total_amt < 0) AS B
ON A.PROD_CODE = B.TRANS_CODE
ORDER BY total_amt
```

--13. Which store-type sells the maximum products by value of sales amount and by quantity sold?

```
SELECT TOP 1 Store_type, SUM(TOTAL_AMT) AS SALES_AMOUNT FROM Transactions
```

Results	
prod_cat	total_amt
1 Electronics	-8270 9248046875

```
ON A.PROD_CODE = B.TRANS_CODE
ORDER BY total_amt
```

--13. Which store-type sells the maximum products by value of sales amount and by quantity sold?

```
SELECT TOP 1 Store_type, SUM(TOTAL_AMT) AS SALES_AMOUNT FROM Transactions
GROUP BY Store_type
ORDER BY SALES_AMOUNT DESC
```

```
SELECT TOP 1 STORE_TYPE, SUM(QTY) AS QUANTITY FROM Transactions
GROUP BY Store_type
ORDER BY QUANTITY DESC
```

--14. What are the categories for which average revenue is above the overall average?

Store_type	SALES_AMOUNT
e-Shop	19824816.0530701

STORE_TYPE	QUANTITY
e-Shop	22763

```
--14. What are the categories for which average revenue is above the overall average?  
SELECT * FROM (SELECT prod_cat , total_amt, AVG(TOTAL_AMT) OVER(PARTITION BY PROD_CAT) AS AVG_REV  
(SELECT *, CONCAT(Prod_Cat_Code, ' ', Prod_Sub_Cat_Code) AS Prod_Code  
FROM prod_cat_info) AS A  
JOIN  
(SELECT *, CONCAT(Prod_Cat_Code, ' ', Prod_SubCat_Code) AS Trans_Code  
FROM Transactions) AS B  
ON A.Prod_Code = B.Trans_Code) AS T  
WHERE AVG_REV > (SELECT AVG(TOTAL_AMT) FROM Transactions)
```

148 %

Results Messages

	prod_cat	total_amt	AVG_REV
1	Books	2214.419921875	2112.81826302137
2	Books	897.260009765625	2112.81826302137
3	Books	3155.8798828125	2112.81826302137
4	Books	1435.39501953125	2112.81826302137
5	Books	6060.9248046875	2112.81826302137
6	Books	89.504997253418	2112.81826302137
7	Books	-4219.9951171875	2112.81826302137
8	Books	1816.61999511719	2112.81826302137
9	Books	6466.45999609375	2112.81826302137
10	Books	1060.80004882813	2112.81826302137

```
--15. Find the average and total revenue by each subcategory for the categories which are among top
--      5 categories in terms of quantity sold.
SELECT PROD_SUBCAT_CODE, AVG(TOTAL_AMT) AS AVG_SUBCAT, SUM(TOTAL_AMT) AS TOTAL_SUBCAT
((SELECT *, CONCAT(Prod_cat_code, ' ', Prod_sub_cat_code) AS Prod_code
FROM prod_cat_info) AS A
JOIN
(SELECT *, CONCAT(Prod_cat_code, ' ', Prod_subcat_code) AS Trans_code
FROM Transactions) AS B
ON A.Prod_code = B.Trans_code)
WHERE prod_sub_cat_code IN
(SELECT TOP 5 prod_cat_code FROM Transactions
GROUP BY prod_cat_code
ORDER BY SUM(QTY) DESC)
GROUP BY prod_subcat_code
```

148 % ▾

Results Messages

	PROD_SUBCAT_CODE	AVG_SUBCAT	TOTAL_SUBCAT
1	1	2100.49786983943	6196468.71602631
2	2	2084.00695634859	2098595.00504303
3	3	2053.11089616744	6296891.11854553
4	5	2181.74983576892	2090116.34266663
5	6	2108.37240019703	2085180.30379486