SQL

Project - Coded

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Project Problem Statement:

You are hired by a chain of online retail stores **"Reliant retail limited"**. They provide you with "**orders**" database and seek answers to the following queries as the results from these queries will help the company in making data-driven decisions that will impact the overall growth of the online retail store.

Questions to be answered:

1. Write a query to display customer full name with their title (mr/ms), both first name and last name are in upper case with customer email id, customer creation date and display customer's category after applying below categorization rules:

i. If customer creation date year <2005 then category a

ii. If customer creation date year >=2005 and <2011 then category b

iii. If customer creation date year>= 2011 then category c

Hint: Use case statement, no permanent change in table required. [note: tables to be used -online_customer table]

2. Write a query to display the following information for the products, which have not been sold: product_id, product_desc, product_quantity_avail, product_price, inventory values(product_quantity_avail*product_price), new_price after applying discount as per the below criteria. Sort the output concerning the decreasing value of inventory_value.

i. If product price > 20,000 then apply 20% discount

ii. If product price > 10,000 then apply 15% discount

iii. If product price =< 10,000 then apply 10% discount

Hint: use case statement, no permanent change in table required. [note: tables to be used -product, order_items table]

3. write a query to display product_class_code, product_class_description, count of product type in each product class, and inventory value (p.product_quantity_avail*p.product_price). Information should be displayed for only those product_class_code that have more than 1,00,000 inventory value. sort the output concerning the decreasing value of inventory_value.

[note: tables to be used -product, product_class]

4. Write a query to display customer_id, full name, customer_email, customer_phone and country of customers who have cancelled all the orders placed by them(use sub-query)

[note: tables to be used - online_customer, addresss, order_header]

5. Write a query to display shipper name, city to which it is catering, number of customer catered by the shipper in the city and number of consignments delivered to that city for shipper dhl

[note: tables to be used -shipper, online_customer, addresss, order_header]

6. Write a query to display customer id, customer full name, total quantity and total value (quantity*price) shipped where mode of payment is cash and customer last name starts with 'g'

[note: tables to be used -online_customer, order_items, product, order_header]

7. Write a query to display order_id and volume of biggest order (in terms of volume) that can fit in carton id 10

-- [note: tables to be used -carton, order_items, product]

8. Write a query to display product_id, product_desc, product_quantity_avail, quantity sold, and show inventory status of products as below as per below condition:

a. For electronics and computer categories,

i. If sales till date is zero then show 'no sales in past, give discount to reduce inventory',

ii. If inventory quantity is less than 10% of quantity sold, show 'low inventory, need to add inventory',

iii. If inventory quantity is less than 50% of quantity sold, show 'medium inventory, need to add some inventory',

iv. If inventory quantity is more or equal to 50% of quantity sold, show 'sufficient inventory'

b. For mobiles and watches categories,

i. If sales till date is zero then show 'no sales in past, give discount to reduce inventory',

ii. If inventory quantity is less than 20% of quantity sold, show 'low inventory, need to add inventory',

iii. If inventory quantity is less than 60% of quantity sold, show 'medium inventory, need to add some inventory',

iv. If inventory quantity is more or equal to 60% of quantity sold, show 'sufficient inventory'

c. Rest of the categories,

i. If sales till date is zero then show 'no sales in past, give discount to reduce inventory',

ii. If inventory quantity is less than 30% of quantity sold, show 'low inventory, need to add inventory',

iii. If inventory quantity is less than 70% of quantity sold, show 'medium inventory, need to add some inventory',

iv. If inventory quantity is more or equal to 70% of quantity sold, show 'sufficient inventory'

[note: tables to be used -product, product_class, order_items] (use sub-query)

9. Write a query to display product_id, product_desc and total quantity of products which are sold together with product id 201 and are not shipped to city bangalore and new delhi. Display the output in descending order concerning tot_qty.(use sub-query)

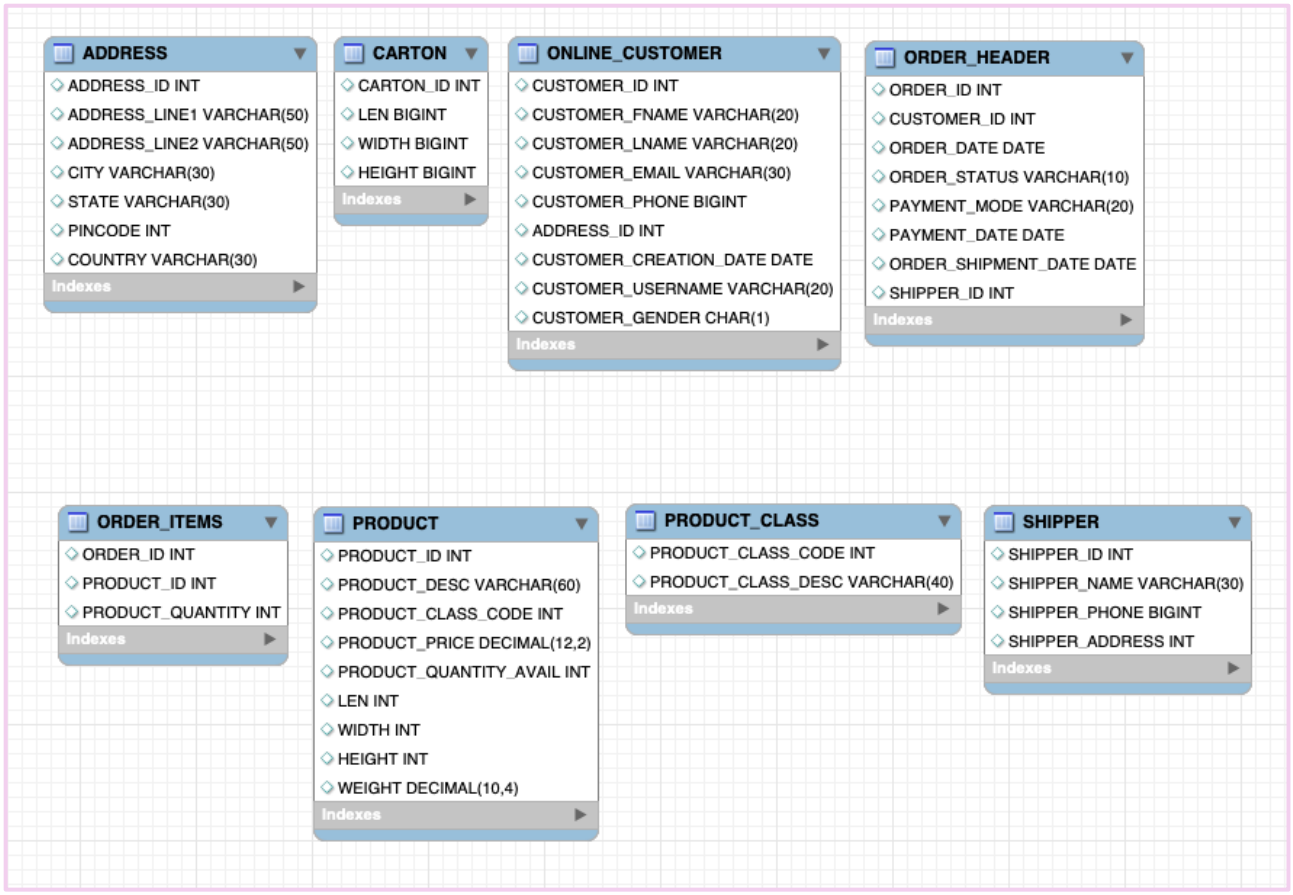
[note: tables to be used -order_items,product,order_header, online_customer, address]

10. Write a query to display the order_id,customer_id and customer fullname and total quantity of products shipped for order ids which are even and shipped to address where pincode is not starting with "5"

[note: tables to be used - online_customer,order_header, order_items, address]

Scoring guide (Rubric) - SQL Project – Coded

Criteria	Points
Business Questions #1 to #6 Each question is of 5 marks	30
Business Questions #7 to #10 Each question is of 6 marks	24
SQL Code Hygiene - Well formatted & indented SQL code - Standard naming conventions are followed - Aliases are given to aggregated columns	6
Points	60



Orders Schemas Tables

Q1. WRITE A QUERY TO DISPLAY CUSTOMER FULL NAME WITH THEIR TITLE (MR/MS), BOTH FIRST NAME AND LAST NAME ARE IN UPPER CASE WITH CUSTOMER EMAIL ID, CUSTOMER CREATIONDATE AND DISPLAY CUSTOMER'S CATEGORY AFTER APPLYING BELOW CATEGORIZATION RULES:

i. IF CUSTOMER CREATION DATE YEAR <2005 THEN CATEGORY A
ii. IF CUSTOMER CREATION DATE YEAR >=2005 AND <2011 THEN CATEGORY B
iii. IF CUSTOMER CREATION DATE YEAR>= 2011 THEN CATEGORY C

HINT: USE CASE STATEMENT, NO PERMANENT CHANGE IN TABLE REQUIRED. [NOTE: TABLES TO BE USED -ONLINE_CUSTOMER TABLE]

Output:

CUSTOMER_FULL_NAME	CUSTOMER_EMAIL	CUSTOMER_CREATION_DATE	CUSTOMER_CATEGORY
MS JENNIFER WILSON	jen_w@gmail.com	01/06/91	CATEGORY A
MR JACKSON DAVIS	dave_jack@gmail.com	12/06/01	CATEGORY A
MS KOMAL CHOUDHARY	ch_komal@yahoo.co.IN	26/06/02	CATEGORY A
MR WILFRED JEAN	w_jean@gmail.com	12/01/06	CATEGORY B
MS ANITA GOSWAMI	agoswami@gmail.com	13/03/06	CATEGORY B

Table 1

Inference:

The Category C will give the new customers, Category B older customers and Category A oldest customers.

Recommendations:

Marketing activities can be carried out to retain the oldest customers & cross sell / up sell for the new customers.

Q2. WRITE A QUERY TO DISPLAY THE FOLLOWING INFORMATION FOR THE PRODUCTS, WHICH HAVE NOT BEEN SOLD: PRODUCT_ID, PRODUCT_DESC, PRODUCT_QUANTITY_AVAIL, PRODUCT_PRICE, INVENTORY VALUES(PRODUCT_QUANTITY_AVAIL*PRODUCT_PRICE), NEW_PRICE AFTER APPLYING DISCOUNT AS PER BELOW CRITERIA. SORT THE OUTPUT WITH RESPECT TO DECREASING VALUE OF INVENTORY_VALUE.

i. IF PRODUCT PRICE > 20,000 THEN APPLY 20% DISCOUNT
ii. IF PRODUCT PRICE > 10,000 THEN APPLY 15% DISCOUNT
iii. IF PRODUCT PRICE =< 10,000 THEN APPLY 10% DISCOUNT

HINT: USE CASE STATEMENT, NO PERMANENT CHANGE IN TABLE REQUIRED. [NOTE: TABLES TO BE USED -PRODUCT, ORDER_ITEMS TABLE]

Output:

PRODUCT_ID	PRODUCT_DESC	PRODUCT_QUANTITY_AVAIL	PRODUCT_PRICE	INVENTORY_VALUES	NEW_PRICE
99999	Samsung Galaxy Tab 2 P3100	50	19300	965000	22195
99997	Sony Xperia U (Black White)	50	16499	824950	18973.85
99998	Nikon Coolpix L810 Bridge	50	14987	749350	17235.05
99995	LG MS-2049UW Solo Microwave	100	4800	480000	5280
99996	Nokia Asha 200 (Graphite)	100	4070	407000	4477

Table 2

Inference:

To promote the products which have not sold had given offer price based on the actual product price.

Recommendations:

Product bundling can also be done to get the product sold.

Q3. WRITE A QUERY TO DISPLAY PRODUCT_CLASS_CODE, PRODUCT_CLASS_DESCRIPTION, COUNT OF PRODUCT TYPE IN EACH PRODUCT CLASS, INVENTORY VALUE (P. PRODUCT_QUANTITY_AVAIL*P. PRODUCT_PRICE). INFORMATION SHOULD BE DISPLAYED FOR ONLY THOSE PRODUCT_CLASS_CODE WHICH HAVE MORE THAN 1,00,000 INVENTORY VALUE. SORT THE OUTPUT WITH RESPECT TO DECREASING VALUE OF INVENTORY_VALUE.
[NOTE: TABLES TO BE USED -PRODUCT, PRODUCT_CLASS]

Output:

PRODUCT_CLASS_CODE	PRODUCT_CLASS_DESC	PRODUCT_COUNT	INVENTORY_VALUE
3000	Promotion-High Value	4	2564300
2050	Electronics	4	1665600
3001	Promotion-Medium Value	3	1261900
2055	Mobiles	2	1092500
3002	Promotion-Low Value	3	749250

Table 3

Inference:

The output gives the product class with the highest inventory value, which need to be sold on priority

Recommendations:

The product respect to the product class need to be reviewed before placing the next order or there should be a sales forecasting before the purchase.

Q4. WRITE A QUERY TO DISPLAY CUSTOMER_ID, FULL NAME, CUSTOMER_EMAIL, CUSTOMER_PHONE AND COUNTRY OF CUSTOMERS WHO HAVE CANCELLED ALL THE ORDERS PLACED BY THEM (USE SUB-QUERY)
NOTE: TABLES TO BE USED - ONLINE_CUSTOMER, ADDRESSS, ORDER_HEADER]

Output:

FULL_NAME	CUSTOMER_EMAIL	CUSTOMER_PHONE	COUNTRY	ORDER_STATUS
Neetha Castelina	neetha20@gmail.com	8196236362	India	Cancelled
Niseema Zimmer	niseemaz@yahoo.com	8179413840	USA	Cancelled
Ahmad Bin Gh Azali	ahmad_bingh@yahoo.co.my	7348292313	Malaysia	Cancelled
Hans Zimmer	hans_zimmer@gmail.com	9477272235	USA	Cancelled
Tharman Shanmugaratnam	tharshan@yahoo.co.sg	8572898929	Singapore	Cancelled

Table 4

Inference:

The mentioned customers cancelled all their orders.

Recommendations:

The reasons for cancellations need to be identified and business must take necessary steps to reduce the order cancellation.

Q5. WRITE A QUERY TO DISPLAY SHIPPER NAME, CITY TO WHICH IT IS CATERING, NUMBER OF CUSTOMER CATERED BY THE SHIPPER IN THE CITY AND NUMBER OF CONSIGNMENTS DELIVERED TO THAT CITY FOR SHIPPER DHL (9 ROWS)
NOTE: TABLES TO BE USED -SHIPPER, ONLINE_CUSTOMER, ADDRESSS, ORDER_HEADER]

Output:

SHIPPER_NAME	CITY	CUSTOMERS_CATERED	CONSIGNMENTS_DELIVERED
DHL	Abington	1	1
DHL	Amherst	1	1
DHL	Bangalore	3	5
DHL	Birmingham	1	1
DHL	Brooklyn	1	1

Table 5

Inference:

The DHL shipper has higher orders/customers in Bangalore City.

Recommendations:

The shipper can allocate more resources to Bangalore.

Q6. WRITE A QUERY TO DISPLAY CUSTOMER ID, CUSTOMER FULL NAME, TOTAL QUANTITY AND TOTAL VALUE (QUANTITY*PRICE) SHIPPED WHERE MODE OF PAYMENT IS CASH AND CUSTOMER LAST NAME STARTS WITH 'G'
[NOTE: TABLES TO BE USED -ONLINE_CUSTOMER, ORDER_ITEMS, PRODUCT, ORDER_HEADER]

Output:

CUSTOMER_ID	CUSTOMER_FULL_NAME	TOTAL_QUANTITY	TOTAL_VALUE
6	Anita Goswami	25	93237
24	Brian Grazer	4	4010

Table 6

Inference:

There are 2 customers where the mode of payment is cash and their last name start with ‘G’

Q7. WRITE A QUERY TO DISPLAY ORDER_ID AND VOLUME OF BIGGEST ORDER (IN TERMS OF VOLUME) THAT CAN FIT IN CARTON ID 10
[NOTE: TABLES TO BE USED -CARTON, ORDER_ITEMS, PRODUCT]

Output:

ORDER_ID	VOLUME
10064	14988000

Table 7

Inference:

Order ID 10064 has the biggest volume order that can fit in the carton ID 10

Q8. WRITE A QUERY TO DISPLAY PRODUCT_ID, PRODUCT_DESC, PRODUCT_QUANTITY_AVAIL, QUANTITY SOLD, AND SHOW INVENTORY STATUS OF PRODUCTS AS BELOW AS PER BELOW CONDITION:

A. FOR ELECTRONICS AND COMPUTER CATEGORIES,

i. IF SALES TILL DATE IS ZERO THEN SHOW 'NO SALES IN PAST, GIVE DISCOUNT TO REDUCE INVENTORY',

ii. IF INVENTORY QUANTITY IS LESS THAN 10% OF QUANTITY SOLD, SHOW 'LOW INVENTORY, NEED TO ADD INVENTORY',

iii. IF INVENTORY QUANTITY IS LESS THAN 50% OF QUANTITY SOLD, SHOW 'MEDIUM INVENTORY, NEED TO ADD SOME INVENTORY',

iv. IF INVENTORY QUANTITY IS MORE OR EQUAL TO 50% OF QUANTITY SOLD, SHOW 'SUFFICIENT INVENTORY'

Output:

PRODUCT_ID	PRODUCT_DESC	PRODUCT_CLASS_DESC	PRODUCT_QUANTITY_AVAIL	QUANTITY_SOLD	INVENTORY_STATUS
221	Cybershot DWC-W325 Camera	Electronics	5	4	SUFFICIENT INVENTORY
202	Sams 192 L4 Single-door Refrigerator	Electronics	15	6	SUFFICIENT INVENTORY
203	Jocky Speaker Music System HT32	Electronics	19	3	SUFFICIENT INVENTORY
201	Sky LED 102 CM TV	Electronics	30	6	SUFFICIENT INVENTORY
215	Logtech M244 Optical Mouse	Computer	10	9	SUFFICIENT INVENTORY
216	External Hard Disk 500 GB	Computer	10	7	SUFFICIENT INVENTORY

Table 8.1

Inference:

Electronics and Computer product class has all the products with sufficient inventory.

B. FOR MOBILES AND WATCHES CATEGORIES,

i. IF SALES TILL DATE IS ZERO THEN SHOW 'NO SALES IN PAST, GIVE DISCOUNT TO REDUCE INVENTORY',

ii. IF INVENTORY QUANTITY IS LESS THAN 20% OF QUANTITY SOLD, SHOW 'LOW INVENTORY, NEED TO ADD INVENTORY',

iii. IF INVENTORY QUANTITY IS LESS THAN 60% OF QUANTITY SOLD, SHOW 'MEDIUM INVENTORY, NEED TO ADD SOME INVENTORY',

iv. IF INVENTORY QUANTITY IS MORE OR EQUAL TO 60% OF QUANTITY SOLD, SHOW 'SUFFICIENT INVENTORY'

Output:

PRODUCT_ID	PRODUCT_DESC	PRODUCT_CLASS_DESC	PRODUCT_QUANTITY_AVAIL	QUANTITY_SOLD	INVENTORY_STATUS
212	Samsung Galaxy On6	Mobiles	20	9	SUFFICIENT INVENTORY
211	OnePlus 6 Smart Phone	Mobiles	25	5	SUFFICIENT INVENTORY
229	Disney Analog Watch	Watches	10	2	SUFFICIENT INVENTORY
228	Adidas Analog Watch	Watches	10	7	SUFFICIENT INVENTORY
217	Titan Karishma Watch	Watches	35	2	SUFFICIENT INVENTORY

Table 8.2

Inference:

Mobiles and Watches product class has all the products with sufficient inventory.

C. REST OF THE CATEGORIES,

i. IF SALES TILL DATE IS ZERO THEN SHOW 'NO SALES IN PAST, GIVE DISCOUNT TO REDUCE INVENTORY',

ii. IF INVENTORY QUANTITY IS LESS THAN 30% OF QUANTITY SOLD, SHOW 'LOW INVENTORY, NEED TO ADD INVENTORY',

iii. IF INVENTORY QUANTITY IS LESS THAN 70% OF QUANTITY SOLD, SHOW 'MEDIUM INVENTORY, NEED TO ADD SOME INVENTORY',

iv. IF INVENTORY QUANTITY IS MORE OR EQUAL TO 70% OF QUANTITY SOLD, SHOW 'SUFFICIENT INVENTORY'

[NOTE: TABLES TO BE USED -PRODUCT, PRODUCT_CLASS, ORDER_ITEMS] (USE SUB-QUERY)

Output:

PRODUCT_ID	PRODUCT_DESC	PRODUCT_CLASS_DESC	PRODUCT_QUANTITY_AVAIL	QUANTITY_SOLD	INVENTORY_STATUS
205	Infant Sleepwear Blue	Clothes	50	7	SUFFICIENT INVENTORY
244	Foldable Premium Chair	Furnitures	6	16	MEDIUM INVENTORY, NEED TO ADD SOME INVENTORY
238	Kasyo DJ-2100 Desktop Calculator	Stationery	10	10	SUFFICIENT INVENTORY
235	Cindy HMPOC Pencil Box (Multicolor)	Stationery	10	40	LOW INVENTORY, NEED TO ADD INVENTORY
241	PK Copier A4 75 GSM White Paper Ream	Stationery	2	18	LOW INVENTORY, NEED TO ADD INVENTORY

Table 8.3

Inference:

Furniture product class has medium inventory and need to add some inventory quantity. Stationery product class has low inventory, and the products need to be added in inventory.

Recommendation:

Stationery product class forecasting must be considered for optimization to avoid low inventory status.

Q9. WRITE A QUERY TO DISPLAY PRODUCT_ID, PRODUCT_DESC AND TOTAL QUANTITY OF PRODUCTS WHICH ARE SOLD TOGETHER WITH PRODUCT ID 201 AND ARE NOT SHIPPED TO CITY BANGALORE AND NEW DELHI. DISPLAY THE OUTPUT IN DESCENDING ORDER WITH RESPECT TO TOT_QTY. (USE SUB-QUERY)
[NOTE: TABLES TO BE USED -ORDER_ITEMS, PRODUCT, ORDER_HEADER, ONLINE_CUSTOMER, ADDRESS]

Output:

PRODUCT_ID	PRODUCT_DESC	TOTAL_QUANTITY
218	Shell Fingertip Ball Pen	20
219	Ruf-n-Tuf Black PU Leather Belt	4
216	External Hard Disk 500 GB	3
233	HP ODC School Bag 2.5'	3
207	Remote Control Car	2

Table 9

Inference:

There are 13 (6 displayed) products which are ordered along with product with order id 201 and not shipped to Bangalore and Delhi.

Q10. WRITE A QUERY TO DISPLAY THE ORDER_ID, CUSTOMER_ID AND CUSTOMER FULLNAME AND TOTAL QUANTITY OF PRODUCTS SHIPPED FOR ORDER IDS WHICH ARE EVEN AND SHIPPED TO ADDRESS WHERE PINCODE IS NOT STARTING WITH "5"
[NOTE: TABLES TO BE USED - ONLINE_CUSTOMER, ORDER_HEADER, ORDER_ITEMS, ADDRESS]

Output:

ORDER_ID	CUSTOMER_ID	CUSTOMER_FULLNAME	TOTAL_QUANTITY_SHIPPED
10008	7	Ashwathi Bhatt	25
10022	23	Anna Pinnock	2
10024	32	Hans Zimmer	2
10028	23	Anna Pinnock	2
10030	52	Suchirithaa Ekanayake	2

Table 10

Inference:

The order id which are even and shipped to pin code which does not start with 5 are 19 orders.