Pennsylvania State University Department of Industrial and Manufacturing Engineering IE 330 Engineering Analytics Fall 2020

Access Project Report

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Introduction:

The following are a list of 20 actions that require a query to be created. A summary of the solution, the code to create the query and the query report are all shown. All answers for each query where found using Microsoft Access file "330 Project 2".

1. Show all the CustomerIDs present in customer table.

Summary:

For this query we will select all customers ID from the customers' table.

Code:

SELECT CustomerID FROM Customer;

Query Report:



2. Show all the details of the customers living in the 16802 area.

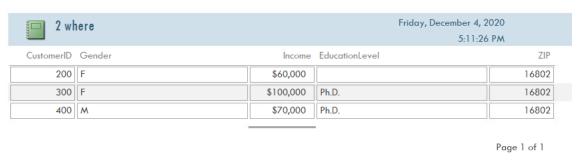
Summary:

For this query we will select all entries from the customers table, in where the zip code equals 16082.

Code:

SELECT *
FROM Customer
WHERE zip=16802;

Query Report:



3. Show the different EducationLevels of the customers

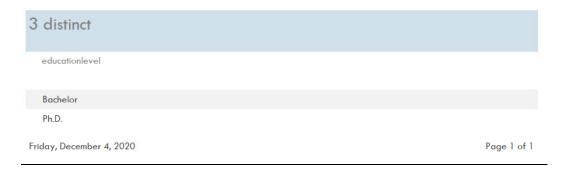
Summary:

In this query we will select all distinct education levels from our customers present in our customers tables.

Code:

SELECT DISTINCT EDUCATIONLEVEL FROM Customer;

Query Report:



4. Show the CustomerID and Education Level of the customers who are male and have an income greater than \$80000.

Summary:

For this query we will select the customer ID and education level from the customer table, but only for those customers who are male and have and income greater than \$80000.

Code:

SELECT CUSTOMERID, EDUCATIONLEVEL FROM CUSTOMER WHERE GENDER="M" AND INCOME>80000;

Query Report:



5. Show the CustomerID of customers with EducationLevel of - Bachelor or Ph.D.

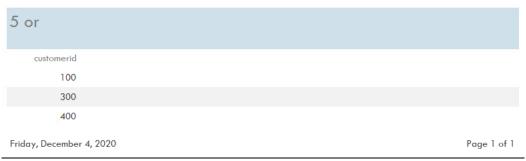
Summary:

In this query we will select the customer ID from the Customer table from all customers whose education level is Bachelor or Ph.D.

Code:

SELECT CUSTOMERID FROM CUSTOMER WHERE EDUCATIONLEVEL= "Bachelor" OR EDUCATIONLEVEL= "Ph.D.";

Query Report:



6. Show the CustomerID and ZIP of the customers whose EducationLevel is not null.

Summary:

For this query we will select the customer ID and ZIP from the customer table, but only for those customers that have an education level.

Code:

SELECT CUSTOMERID, ZIP FROM CUSTOMER WHERE EDUCATIONLEVEL IS NOT NULL;

Query Report:

6 not null			
customerid	zip		
100	16801		
300	16802		
400	16802		
Friday, December 4	4, 2020		Page 1

7. Show the ProductID and Name of the products which have the word 'corn' included in their name.

Summary:

In this query we will show the product ID and name from the product table for those products that contain corn in the name.

Code:

SELECT PRODUCTID, NAME FROM PRODUCT WHERE NAME LIKE "*CORN*";

7 like	
productid name	
10 Pop corn	
20 Corn salad	
Friday, December 4, 2020	Page 1 of 1

8. Show the CustomerID, Gender, and Education Level of all the male customers in the descending order of CustomerID.

Summary:

In this query we will select the customer ID, gender and education level from the customer table only for customers that are male and order by descending customer ID.

Code:

SELECT CUSTOMERID, GENDER, EDUCATIONLEVEL FROM CUSTOMER
WHERE GENDER="M"
ORDER BY CUSTOMERID DESC;

Query Report:

8 order by	
customerid gender	educationlevel
400 M	Ph.D.
100 M	Bachelor
Friday, December 4, 2020	Page 1 of 1

9. Show the transaction ID and item name of the transactions that occurred.

Summary

In this query we will the transaction ID and product name form both: the transaction and product tables. We will only show the transaction ID and product name when Item ID is equal to the Product ID.

Code:

SELECT Transaction.TransactID, Product.Name FROM Transaction, Product WHERE Transaction.ItemID=Product.ProductID;

Query Report:

9 join		
transactid	name	
T1200	Pop corn	
T2200	Pop corn	
T4300	Pop corn	
T4100	Pop corn	
T3400	Pop corn	
T3100	Corn salad	
T2300	Corn salad	
T5100	Corn salad	
T1400	Shoes	
T7300	Shoes	
T6100	Tissue	
Friday, December 4, 2020		Page 1 of

10. Show the transaction ID and item name of the transactions that occurred on December 4 or 6 of 2009.

Summary:

We will select the transaction ID and product name form both: the transaction and product table, where the item ID is equal to the Product ID and the day is either 12/4/2009 or 12/6/2009.

Code:

SELECT Transaction. TransactID, Product. Name FROM Transaction, Product WHERE Transaction. ItemID=Product. ProductID AND (Transaction. Day=#12/4/2009# OR Transaction. Day=#12/6/2009#);



11. Get the average income per gender.

Summary:

We will select the gender and the average of the income (name it averageincome), from the customer table and group them by gender.

Code:

SELECT Gender, AVG(Income) AS averageincome FROM Customer GROUP BY Gender;

Query Report:



12. Get the average income for female customers.

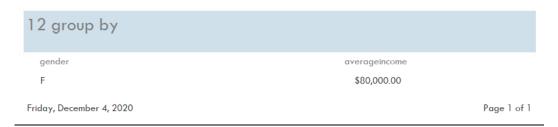
Summary:

We will select the gender and the average of the income (name it averageincome), from the customer table, where gender is female and group them by gender.

Code:

SELECT Gender, AVG(Income) AS averageincome FROM Customer
WHERE GENDER="F"
GROUP BY Gender;

Query Report:



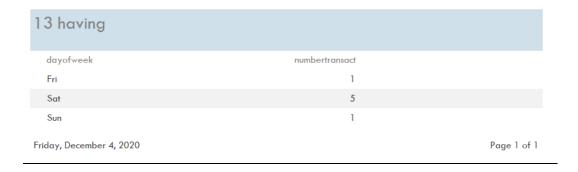
13. Show the total number of transactions per DayOfWeek, in which the sum of payments for each DayOfWeek is greater than \$10.00.

Summary:

We will select the day of the week and the sum of transactions ID (we will name it numbertransact), from the transaction table and group by day of the week. We will only show those day of weeks having sum of payment greater than 10.

Code:

SELECT dayofweek, count(transactid) AS numbertransact FROM transaction Group by dayofweek Having sum(payment) > 10;



14. Show the total quantity of sold items per item ID from the transaction records, in which coupons are not used and the quantity is greater than 10.

Summary:

We will select the item ID and the sum of the item quantity sold from the transaction table where there was no coupon usage and group it by item ID. We will only show the sum for those items having a sold quantity of more than or equal to 10.

Code:

Select ItemID, SUM(QTY) as amount From Transaction Where Couponusage = "No" Group by ItemID Having SUM(QTY) >= 10;

Query Report:

14 having		
itemid	amount	
10	15	

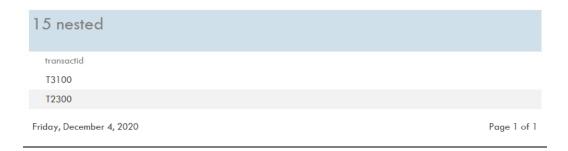
15. Get the transaction ID of the transactions in which coupons with a 20% discount rate were used.

Summary:

For this query we will select the transaction ID from both the transaction and coupon tables where the Coupon ID from the transaction table equal the coupon ID from the coupon table and have a discount rate of 0.2.

Code:

SELECT Transaction.TransactID FROM Transaction, Coupon WHERE Transaction.CouponID = Coupon.CouponID AND Coupon.Discountrate = 0.2;



16. Show the transaction ID and item name of the transactions that occurred on December 4 or in 2009.

Summary:

In this query we will select the transaction ID and the product name from the transaction and product tables where the item ID equals the Product ID and the transaction day is 12/4/2009 or 12/6/2009

Code:

SELECT Transaction.TransactID, Product.Name

FROM Transaction, Product

WHERE Transaction.ItemID=Product.ProductID AND (Transactions.Day=#12/4/2009# OR Transactions.Day=#12/6/2009#);

Query Report:



17. Show the total number of transactions per day-of-week, in which the sum of payments for each day-of-week is greater than \$10.00.

Summary:

We will select the day of the week and the number of transactions ID (as numberforans) from the transactions table grouped by day of week and having a sum payment greater than 10.

Code:

SELECT dayofweek, count(transactid) AS numberfotrans FROM transactions Group by dayofweek Having sum(payment) > 10;

Query Report:

17		
dayofweek	numberoftrans	
Fri	1	
Sat	5	
Sun	1	
Friday, December 4, 2020		Page 1 of 1

18. Show the total amount of sold items per item ID from the transaction records, in which coupons are not used and the amount is greater than equal to 2.

Summary:

We will select the item ID and the sum of the quantities sold (as amount) from the transactions table where we have no coupon usage grouped by item ID and having a sum quantity greater or equal to 2.

Code:

Select ItemID, SUM(Qty) as amount From Transactions Where Couponusage = 'No' Group by ItemID Having SUM(Qty) >= 2;

18			
itemid	amount		
10	15		
20	2		
30	2		
40	2		
Friday, December 4, 2	020		Pa

19. Get the transaction ID of the transactions in which coupons with a 20% discount rate were used.

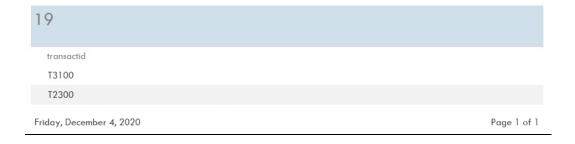
Summary:

We will select the transaction Id from the transaction and coupon tables where the transaction coupon ID and the coupon ID are equal and the discount rate is 0.2.

Code:

Select Transactions.TransactID From Transactions, Coupon Where Transactions.CouponID = Coupon.CouponID and Coupon.Discountrate = 0.2;

Query Report:



20. Get the name and unit price of the products that female customers have purchased.

Summary:

For this query we will select the name and unit price form the product table where the product ID IN select the Item ID from the transaction table where CID IN select the customer ID from customer table where gender is female.

Code:

SELECT Name, UnitPrice FROM Product WHERE ProductID IN (SELECT ItemID FROM Transaction WHERE Transaction.CID IN (SELECT CustomerID FROM Customer WHERE Gender = 'F'));

20	
name	unitprice
Pop com	\$5.00
Corn salad	\$6.00
Shoes	\$9.00
Friday, December 4, 2020	Page 1 of 1