Rushi Samirbhai Patel RS397441@dal.ca
B00886157

Assignment 5

Problem 1:

SQL Queries for Sales Database (I have also attached the sql file for your reference):

a) **Which customers are in a different city than their sales representative?**

```
select customerName from customers table1 join employees table2 on
table1.salesRepEmployeeNumber = table2.employeeNumber join offices table3 on
table2.officeCode = table3.officeCode where table1.city != table3.city;
```

b) **Which orders included sales that are below the manufacturer's suggested retail price (MSRP)?**

```
select orderNumber from orderdetails table1 join products table2 on table1.productCode
= table2.productCode where table1.priceEach<table2.MSRP group by
table1.orderNumber;
```

c) **Which product line has the highest profit margin in 2003. Include the profit margin. The profit of an item is the sales of the item less the cost of the item. The profit margin is the profit divided by the total base cost.**

```
with table1 as
(select orderdetails.productCode, sum(priceEach * quantityOrdered) as sales,
sum(quantityOrdered) as quantity from orderdetails
join orders on orders.orderNumber = orderdetails.orderNumber where
year(orderDate)=2003 group by orderdetails.productCode)
select productLine, (sales - ( table1.quantity * products.buyPrice))/(table1.quantity *
products.buyPrice) as Profit_Margin from products
join table1
on products.productCode = table1.productCode
order by profit_margin desc limit 1;
```

d) **List the 5 employees with the highest sales in 2004. Include their total sales values and ensure that the top seller is first in the list.**

```
with SalesTable as
(select orderNumber, (quantityOrdered * priceEach) as totalSales from orderdetails),
CustomerTable as
(select orders.customerNumber, final.totalSales from orders join SalesTable as final
on orders.orderNumber = final.orderNumber where year(orders.orderDate) = 2004),
EmployeeTable as
(select customers.salesRepEmployeeNumber, CustomerTable.totalSales from customers
join CustomerTable
on CustomerTable.customerNumber = customers.customerNumber)
select concat(employees.firstName," ",employees.lastName) as Employee_Name,
sum(EmployeeTable.totalSales)as Total_Sales from employees join EmployeeTable
on employees.employeeNumber = EmployeeTable.salesRepEmployeeNumber
group by employees.employeeNumber order by sum(EmployeeTable.totalSales) desc
limit 5;
```

e) Which employees had the value of their 2004 orders exceed the value of their 2003 orders?

```
with SalesTable2004 as
(select orderNumber, (quantityOrdered * priceEach) as totalSales from orderdetails),
CustomerTable2004 as
(select orders.customerNumber, SalesTable2004.totalSales from orders join
SalesTable2004
on orders.orderNumber = SalesTable2004.orderNumber where year(orders.orderDate) =
2004),
EmployeeTable2004 as
(select customers.salesRepEmployeeNumber, CustomerTable2004.totalSales from
customers
join CustomerTable2004
on CustomerTable2004.customerNumber = customers.customerNumber),
Table2004 as
(select employees.employeeNumber, concat(employees.firstName,"
",employees.lastName) as employee_name, sum(EmployeeTable2004.totalSales) as
totalSales from employees join EmployeeTable2004
on employees.employeeNumber = EmployeeTable2004.salesRepEmployeeNumber
group by employees.employeeNumber order by sum(EmployeeTable2004.totalSales)),
SalesTable2003 as
(select orderNumber, (quantityOrdered * priceEach) as totalSales from orderdetails),
CustomerTable2003 as
```

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```
(select orders.customerNumber, SalesTable2004.totalSales from orders join
SalesTable2004
on orders.orderNumber = SalesTable2004.orderNumber where year(orders.orderDate) =
2003),
EmployeeTable2003 as
(select customers.salesRepEmployeeNumber, CustomerTable2003.totalSales from
customers
join CustomerTable2003
on CustomerTable2003.customerNumber = customers.customerNumber),
Table2003 as
(select employees.employeeNumber ,concat(employees.firstName,"
",employees.lastName) as employee_name, sum(EmployeeTable2003.totalSales)as
totalSales from employees join EmployeeTable2003
on employees.employeeNumber = EmployeeTable2003.salesRepEmployeeNumber
group by employees.employeeNumber order by sum(EmployeeTable2003.totalSales))
select Table2004.employeeNumber,Table2004.employee_name,Table2004.totalSales
from Table2004 join Table2003
on Table2003.employeeNumber = Table2004.employeeNumber
where Table2003.totalSales < Table2004.totalSales order by
Table2004.employeeNumber;
```