SQL ASSIGNMENT

Task 1:- Understanding the Data

1. Describe the data in hand in your own words.

->The Data consists of customers who have purchased the products with different order_id and shipped id and the sales done from different products and the profit gained.

2. Identify and list the Primary Keys and Foreign Keys for this dataset provided to you(In case you don't find either primary or foreign key, then specially mention this in your answer)

ANSWER: Unique field in table is primary is primary key and the key which joins two table(or common between 2 tables) is foreign key:

1) Table: cust_dimen:
    a. Primary key: cust_id
    b. Foreign key: cust_id
2) Table:market_fact:
    a. Primary key: ord_id
    b. Foreign_key:cust_id,ship_id
3) Table:prod_dimen:
    a. Primary key: prod_id
    b. Foreign key: prod_id
4) Table:orders_dimen:
    a. Primary key:Order_id
    b. Foreign key:ord_id
5) Table:shipping_dimen:
    a. Primary key:Ship_id
    b. Foreign key:Ship_id,Order_id

Task 2:- Basic & Advanced Analysis

1. Write a query to display the Customer_Name and Customer Segment using alias name “Customer Name", "Customer Segment" from table Cust_dimen.

CODE:

```
8 • SELECT Customer_Name as 'Customer Name',Customer_Segment as 'Customer Segment'  FROM CUST_DIMEN;
9
10
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Customer Name	Customer Segment
MUHAMMED MACINTYRE	SMALL BUSINESS
BARRY FRENCH	CONSUMER
CLAY ROZENDAL	CORPORATE
CARLOS SOLTERO	CONSUMER
CARL JACKSON	CORPORATE
MONICA FEDERLE	CORPORATE
DOROTHY BADDERS	HOME OFFICE

2. Write a query to find all the details of the customer from the table cust_dimen order by desc.

CODE:

```
8 • SELECT * FROM CUST_DIMEN ORDER BY 1 DESC;
9
10
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Customer_Name	Province	Region	Customer_Segment	Cust_id
YOSEPH CARROLL	ALBERTA	WEST	CONSUMER	Cust_1798
YANA SORENSEN	YUKON	YUKON	CORPORATE	Cust_1519
YANA SORENSEN	NEWFOUNDLAND	ATLANTIC	CORPORATE	Cust_637
YANA SORENSEN	QUEBEC	QUEBEC	CORPORATE	Cust_851
YANA SORENSEN	BRITISH COLUMBIA	WEST	CORPORATE	Cust_1577
XYLONA PRICE	ONTARIO	ONTARIO	CORPORATE	Cust_1006
WILLIAM BROWN	SASKACHEWAN	PRARIE	CORPORATE	Cust_1266
WILLIAM BROWN	SASKACHEWAN	PRARIE	HOME OFFICE	Cust_1274

3. Write a query to get the Order ID, Order date from table orders_dimen where ‘Order Priority’ is high.

Code:

```
SELECT Order_id,order_date FROM ORDERS_DIMEN WHERE ORDER_PRIORITY='HIGH';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Order_id	order_date
293	01-10-2012
483	10-07-2011
613	17-06-2011
643	24-03-2011
1540	04-08-2012
1702	06-05-2011
1761	23-12-2010
2532	10-10-2011
2791	09-10-2009

4. Find the total and the average sales (display total_sales and avg_sales)

CODE:

```
SELECT sum(sales) as 'total_sales',avg(sales) as 'average_sales' from market_fact;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_sales	average_sales
14647187.904000023	1757.1002763915576

5. Write a query to get the maximum and minimum sales from maket_fact table.

Code:

```
SELECT max(sales) as 'MAX_sales',min(sales) as 'MIN_sales' from market_fact;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

MAX_sales	MIN_sales
89061.05	2.24

6. Display the number of customers in each region in decreasing order of no_of_customers. The result should contain columns Region, no_of_customers.

CODE:

```
SELECT Region,count(Customer_Name) as 'Number_of_Customers'
from cust_dimen group by Region order by count(Customer_Name) desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Region	Number_of_Customers
WEST	382
ATLANTIC	344
ONTARIO	337
PRARIE	313
QUEBEC	210
YUKON	130
NORTHWEST TERRITORIES	76
NUNAVUT	40

7. Find the region having maximum customers (display the region name and max(no_of_customers)

CODE:

```
SELECT Region,COUNT(Customer_Name) as 'MAX(Number_of_Customers)'
from cust_dimen group by REGION ORDER BY COUNT(CUSTOMER_NAME) DESC LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Region	MAX(Number_of_Customers)
WEST	382

8. Find all the customers from Atlantic region who have ever purchased ‘TABLES’ and the number of tables purchased (display the customer name, no_of_tables purchased)

CODE:

```
select Customer_Name, count(*) as num_tables from
superstore.market_fact s, superstore.cust_dimen c, superstore.prod_dimen p
where s.Cust_id = c.Cust_id and s.Prod_id = p.Prod_id and
p.Product_Sub_Category = 'TABLES' and c.Region = 'ATLANTIC'
group by Customer_Name;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Customer_Name	num_tables
ALEKSANDRA GANNAWAY	1
ANEMONE RATNER	1
BARRY FRANZ	1
BECKY MARTIN	1
BEN PETERMAN	1
BOBBY TRAFTON	1
BRADLEY TALBOTT	1
BRIAN STUGART	1

9. Find all the customers from Ontario province who own Small Business. (display the customer name, no of small business owners)

CODE:

```
7
8  select Customer_Name,count(*) as `no of small business owners` from cust_dimen
9  where Customer_Segment = 'SMALL BUSINESS' and Province = 'ONTARIO'
10 group by Customer_Name;
11
12
13
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Customer_Name	no of small business owners
CHRISTINA VANDERZANDEN	1
MEG O'CONNEL	1
CHRISTINE SUNDARESAM	1
DOUG O'CONNELL	1
CHRISTINE KARGATIS	1
CRAIG CARROLL	1
BILL DONATELLI	1
RUSSELL APPLEGATE	1
BRAD EASON	1

10. Find the number and id of products sold in decreasing order of products sold (display product id, no_of_products sold)

Code:

```
8  select Prod_id,count(*) as `no_of_products sold` from market_fact group by Prod_id
9  order by count(`no_of_products sold`) desc;
10
11
12
13
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Prod_id	no_of_products sold
Prod_6	1225
Prod_3	915
Prod_4	883
Prod_5	788
Prod_8	758
Prod_13	633
Prod_1	525
Prod_2	434
Prod_15	360
Prod_11	349
Prod_17	337
Prod_12	288
Prod_9	246

11. Display product Id and product sub category whose produt category belongs to Furniture and Technlogy. The result should contain columns product id, product sub category.

Code:

```
8  select Prod_id,Product_Sub_Category from prod_dimen
9  where Product_Category='FURNITURE' or Product_Category='TECHNOLOGY'
10 group by Prod_id;
11
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Prod_id	Product_Sub_Category
Prod_17	OFFICE MACHINES

12. Display the product categories in descending order of profits (display the product category wise profits i.e. product_category, profits)?

Code:

```
8  select Product_Category,Profit from market_fact s,prod_dimen p
9  where s.Prod_id = p.Prod_id
10 group by Product_Category order by Profit desc;
11
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Product_Category	Profit
22183	4089.27
TECHNOLOGY	1219.87
13027	1148.9
OFFICE SUPPLIES	729.34
21606	287.5
18017	193.12
20518	1.32
23522	-30.51
13572	-103.48
18373	-317.48

13. Display the product category, product sub-category and the profit within each subcategory in three columns.

Code:

```
7
8 •  select Product_Category,Product_Sub_Category,Profit from market_fact s,prod_dimen p
9    where s.Prod_id = p.Prod_id;
10
11
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Product_Category	Product_Sub_Category	Profit
23522	SCISSORS, RULERS AND TRIMMERS	-30.51
13027	15-01-2012	1148.9
OFFICE SUPPLIES	PAPER	729.34
TECHNOLOGY	OFFICE MACHINES	1219.87
OFFICE SUPPLIES	PAPER	-47.64
20518	LABELS	1.32
13027	15-01-2012	1137.91
OFFICE SUPPLIES	PAPER	-27.72
OFFICE SUPPLIES	APPLIANCES	1675.98
OFFICE SUPPLIES	PAPER	79.34

14. Display the order date, order quantity and the sales for the order.

CODE:

```
7
8 •  select Order_Date,Order_Quantity,Sales from market_fact s, orders_dimen c
9    where s.Ord_id = c.Ord_id;
10
11
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Order_Date	Order_Quantity	Sales
28-05-2011	5	14.76
30-10-2011	38	465.9
24-02-2011	27	305.05
25-12-2011	15	3364.248
25-12-2011	10	1410.93
15-08-2009	48	460.69
04-10-2010	30	443.46
12-05-2009	12	41.97
12-05-2009	18	57.17
12-05-2009	11	81.25
12-05-2009	44	3202.25
12-05-2009	10	35.64

15. Display the names of the customers whose name contains the

i) Second letter as ‘R’

ii) Fourth letter as ‘D’

CODE:

```
8 •  select Customer_Name from cust_dimen
9    where Customer_Name like '_R%' and Customer_Name like '___D%';
10
11
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Customer_Name
BRAD EASON
BRAD EASON
FRED WASSERMAN
TRUDY SCHMIDT
TRUDY SCHMIDT
BRAD NORVELL
BRAD NORVELL
BRAD EASON
FRED HOPKINS
FRED MCMATH
BRAD THOMAS
FRED MCMATH
BRADLEY DRUCKER

16. Write a SQL query to to make a list with Cust_Id, Sales, Customer Name and their region where sales are between 1000 and 5000.

CODE:

```
8 •  select  c.Cust_id,s.Sales,c.Customer_Name,c.Region from market_fact s,cust_dimen c
9    where s.Cust_id = c.Cust_id and Sales between 1000 and 5000;
10
11
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Cust_id	Sales	Customer_Name	Region
Cust_3	1285.37	CLAY ROZENDAL	NUNAVUT
Cust_3	4965.7595	CLAY ROZENDAL	NUNAVUT
Cust_8	1815.49	NEOLA SCHNEIDER	NUNAVUT
Cust_9	1474.33	CARLOS DALY	NUNAVUT
Cust_12	4462.23	SYLVIA FOULSTON	NUNAVUT
Cust_13	2480.9205	JIM RADFORD	NUNAVUT
Cust_16	1210.0515	ANNIE CYPRUS	NUNAVUT
Cust_16	4253.009	ANNIE CYPRUS	NUNAVUT
Cust_19	1078.49	JACK GARZA	NUNAVUT
Cust_20	3554.46	JULIA WEST	NUNAVUT
Cust_24	3338.98	NICOLE HANSEN	NUNAVUT
Cust_25	1311.25	DOROTHY WARDLE	NUNAVUT

17. Write a SQL query to find the 3rd highest sales.

CODE:

```
select min(Sales) as `3rd highest salary`
FROM (
select Sales from market_fact order by Sales desc limit 3
 ) as a;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

3rd highest salary
41343.21

18. Where is the least profitable product subcategory shipped the most? For the least profitable product sub-category, display the region-wise no_of_shipments and the profit made in each region in decreasing order of profits (i.e. region, no_of_shipments, profit_in_each_region)

Code:

```
select Region,count(Ship_id) as no_of_shipment,sum(Profit) as profit_in_each_region from
cust_dimen c,market_fact s,prod_dimen p
where c.Cust_id = s.Cust_id and s.Prod_id = p.Prod_id
group by Region
order by profit_in_each_region asc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Region	no_of_shipment	profit_in_each_region
NUNAVUT	55	1274.0500000000004
YUKON	367	58211.52999999995
NORTHWEST TERRITORIES	275	65085.62000000004
QUEBEC	508	123393.22999999998
ATLANTIC	725	196299.92
WEST	1378	218579.52000000002
PRARIE	1148	255930.3799999999
ONTARIO	1225	272667.2999999997