

Objects

-- Explore All Objects in database

```
SELECT * FROM INFORMATION_SCHEMA.TABLES
```

	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	TABLE_TYPE
1	DataWarehouse	silver	cm_sales_details	BASE TABLE
2	DataWarehouse	silver	cm_prd_info	BASE TABLE
3	DataWarehouse	gold	dim_customers	VIEW
4	DataWarehouse	gold	dim_products	VIEW
5	DataWarehouse	gold	fact_sales	VIEW
6	DataWarehouse	bronze	cm_prd_info	BASE TABLE
7	DataWarehouse	bronze	cm_sales_details	BASE TABLE
8	DataWarehouse	bronze	erp_loc_a101	BASE TABLE

Columns

--Explore All Columns in database

```
SELECT * FROM INFORMATION_SCHEMA.COLUMNS
```

	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	COLUMN_NAME	ORDINAL_POSITION	COLUMN_DEFAULT	IS_NULLABLE	DATA_TYPE	CH
1	DataWarehouse	silver	cm_sales_details	sls_ord_num	1	NULL	YES	nvarchar	50
2	DataWarehouse	silver	cm_sales_details	sls_prd_key	2	NULL	YES	nvarchar	50
3	DataWarehouse	silver	cm_sales_details	sls_cust_id	3	NULL	YES	int	NL
4	DataWarehouse	silver	cm_sales_details	sls_order_dt	4	NULL	YES	date	NL
5	DataWarehouse	silver	cm_sales_details	sls_ship_dt	5	NULL	YES	date	NL
6	DataWarehouse	silver	cm_sales_details	sls_due_dt	6	NULL	YES	date	NL
7	DataWarehouse	silver	cm_sales_details	sls_sales	7	NULL	YES	int	NL
8	DataWarehouse	silver	cm_sales_details	sls_quantity	8	NULL	YES	int	NL
9	DataWarehouse	silver	cm sales details	sls price	9	NULL	YES	int	NL

Product Information

--Explore product information

```
SELECT DISTINCT category, subcategory, product_name FROM gold.dim_products  
ORDER BY 1,2,3
```

	category	subcategory	product_name
1	NULL	NULL	HL Mountain Pedal
2	NULL	NULL	HL Road Pedal
3	NULL	NULL	LL Mountain Pedal
4	NULL	NULL	LL Road Pedal
5	NULL	NULL	ML Mountain Pedal
6	NULL	NULL	ML Road Pedal
7	NULL	NULL	Touring Pedal
8	Accessories	Bike Racks	Hitch Rack - 4-Bike
9	Accessories	Bike Stands	All-Purpose Bike Stand
10	Accessories	Bottles and Cages	Mountain Bottle Cage
11	Accessories	Bottles and Cages	Road Bottle Cage
12	Accessories	Bottles and Cages	Water Bottle - 30 oz.
13	Accessories	Cleaners	Bike Wash - Dissolver

First and Last order

```
--find the date of the first and last order
SELECT MIN(order_date) first_order_date, MAX(order_date) as last_order_date,
DATEDIFF(month, MIN(order_date), MAX(order_date)) as order_range_months
FROM gold.fact_sales
```

	first_order_date	last_order_date	order_range_months
1	2010-12-29	2014-01-28	37

Youngest and Oldest Customer

```
--find the youngest and oldest customer
SELECT MIN(birthdate) as oldest_birthdate,
DATEDIFF(year, MIN(birthdate), GETDATE()) as oldest_age,
MAX(birthdate) as youngest_birthdate,
DATEDIFF(year, MAX(birthdate), GETDATE()) as youngest_age
FROM gold.dim_customers
```

	oldest_birthdate	oldest_age	youngest_birthdate	youngest_age
1	1916-02-10	109	1986-06-25	39

Total Sales

```
--find total sales
SELECT SUM(sales_amount) as total_sales FROM gold.fact_sales
```

	total_sales
1	29356250

Items sold

```
--find how many items are sold
SELECT SUM(quantity) as total_quantity FROM gold.fact_sales
```

	total_quantity
1	60423

Average Selling Price

```
--find the average selling price
SELECT AVG(price) as avg_price FROM gold.fact_sales
```

	avg_price
1	486

Total number of orders

```
--find the total number of orders
SELECT COUNT(order_number) as total_orders from gold.fact_sales
SELECT COUNT(DISTINCT order_number) as total_orders from gold.fact_sales
SELECT * FROM gold.fact_sales
```

	total_orders
1	60398

Total number of products

```
--find the total number of products
SELECT COUNT(product_name) as total_products from gold.dim_products
SELECT COUNT(DISTINCT product_name) AS total_products from gold.dim_products
```

	total_products
1	295

Total number of customers

```
--find the total number of customers
SELECT COUNT(customer_key) as total_customers FROM gold.dim_customers
```

	total_customers
1	18484

Customers that has placed an order

```
--find the total number of customers that has placed an order
SELECT COUNT(DISTINCT customer_key) as total_customers FROM gold.fact_sales
```

	total_customers
1	18484

Report with key metrics

```
SELECT 'Total Sales' as measure_name, SUM(sales_amount) as measure_value FROM gold.fact_sales
UNION ALL
SELECT 'Total Quantity', SUM(quantity) FROM gold.fact_sales
UNION ALL
SELECT 'Average Price', AVG(price) FROM gold.fact_sales
UNION ALL
SELECT 'Total NR Orders', COUNT(DISTINCT order_number) FROM gold.fact_sales
UNION ALL
SELECT 'Total NR Products', COUNT(product_name) FROM gold.dim_products
UNION ALL
SELECT 'Total NR Customers', COUNT(customer_key) FROM gold.dim_customers
```

	measure_name	measure_value
1	Total Sales	29356250
2	Total Quantity	60423
3	Average Price	486
4	Total NR Orders	27659
5	Total NR Products	295
6	Total NR Customers	18484

Customers by country

```
SELECT country, COUNT(customer_key) as total_customers
FROM gold.dim_customers
GROUP BY country
ORDER BY total_customers DESC
```

	country	total_customers
1	United States	7482
2	Australia	3591
3	United Kingdom	1913
4	France	1810
5	Germany	1780
6	Canada	1571
7	n/a	337

Customers by gender

```
--find total customers by gender
SELECT gender, COUNT(customer_key) as total_customers
FROM gold.dim_customers
GROUP BY gender
ORDER BY total_customers DESC
```

	gender	total_customers
1	Male	9341
2	Female	9128
3	n/a	15

Products by category

```
--find total products by category

SELECT category, COUNT(product_key) as total_products
FROM gold.dim_products
GROUP BY category
ORDER BY total_products DESC
```

	category	total_products
1	Components	127
2	Bikes	97
3	Clothing	35
4	Accessories	29
5	NULL	7

Average cost in each category

```
--average cost in each category
SELECT category, AVG(cost) as avg_costs
FROM gold.dim_products
GROUP BY category
ORDER BY avg_costs DESC
```

	category	avg_costs
1	Bikes	949
2	Components	264
3	NULL	28
4	Clothing	24
5	Accessories	13

Total revenue generated for each category

```
-- what is the total revenue generated for each category?  
SELECT p.category, SUM(f.sales_amount) as total_revenue FROM gold.fact_sales f  
LEFT JOIN gold.dim_products p  
on p.product_key = f.product_key  
group by p.category  
order by total_revenue desc;
```

	category	total_revenue
1	Bikes	28316272
2	Accessories	700262
3	Clothing	339716

Total revenue generated by each customer

```
--what is the total revenue generated by each customer  
SELECT c.customer_key, c.first_name, c.last_name, SUM(f.sales_amount) as total_revenue  
FROM gold.fact_sales f  
LEFT JOIN gold.dim_customers c ON c.customer_key = f.customer_key  
GROUP BY c.customer_key, c.first_name, c.last_name
```

	customer_key	first_name	last_name	total_revenue
1	4124	Sergio	Lopez	81
2	6536	Colleen	Guo	2406
3	8330	Nancy	Srini	2459
4	8751	Miguel	Flores	77
5	15338	Jennifer	Gonzalez	30
6	152	Melinda	Gill	8087
7	805	Haley	Tumer	134
8	815	Dalton	Morgan	101
9	3142	Ana	Bryant	3282
10	4617	Janet	Alonso	27
11	8087	Tommy	Chander	78
12	17434	Deborah	Shen	33
13	17547	Alisha	Xu	120
14	143	Eduardo	Patterson	979
15	3919	Mariah	Howard	13

Top 5 products with highest revenue

```

SELECT TOP 5 p.product_name, SUM(f.sales_amount) as total_revenue FROM gold.fact_sales f
LEFT JOIN gold.dim_products p
on p.product_key = f.product_key
group by p.product_name
order by total_revenue desc;

```

```

SELECT * FROM(
SELECT TOP 5 p.product_name, SUM(f.sales_amount) as total_revenue, ROW_NUMBER() OVER (Order by sum(f.sales_amount) DESC
FROM gold.fact_sales f
LEFT JOIN gold.dim_products p
on p.product_key = f.product_key
group by p.product_name
order by total_revenue desc) as t
WHERE rank_products <= 5

```

	product_name	total_revenue
1	Mountain-200 Black- 46	1373454
2	Mountain-200 Black- 42	1363128
3	Mountain-200 Silver- 38	1339394
4	Mountain-200 Silver- 46	1301029
5	Mountain-200 Black- 38	1294854

Top 5 lowest revenue

```

SELECT TOP 5 p.product_name, SUM(f.sales_amount) as total_revenue FROM gold.fact_sales f
LEFT JOIN gold.dim_products p
on p.product_key = f.product_key
group by p.product_name
order by total_revenue asc;

```

	product_name	total_revenue
1	Racing Socks- L	2430
2	Racing Socks- M	2682
3	Patch Kit/8 Patches	6382
4	Bike Wash - Dissolver	7272
5	Touring Tire Tube	7440

Top 10 customers highest revenue

```

SELECT TOP 10 c.customer_key, c.first_name, c.last_name, SUM(f.sales_amount) as total_revenue
FROM gold.fact_sales f
LEFT JOIN gold.dim_customers c ON c.customer_key = f.customer_key
GROUP BY c.customer_key, c.first_name, c.last_name
ORDER BY SUM(f.sales_amount) desc;

```

	customer_key	first_name	last_name	total_revenue
1	1302	Nichole	Nara	13294
2	1133	Kaitlyn	Henderson	13294
3	1309	Margaret	He	13268
4	1132	Randall	Dominguez	13265
5	1301	Adriana	Gonzalez	13242
6	1322	Rosa	Hu	13215
7	1125	Brandi	Gill	13195
8	1308	Brad	She	13172
9	1297	Francisco	Sara	13164
10	434	Maurice	Shan	12914

Top 3 customers fewest orders placed

```

SELECT TOP 3 c.customer_key, c.first_name, c.last_name, COUNT(DISTINCT order_number) as order_count
FROM gold.fact_sales f
LEFT JOIN gold.dim_customers c ON c.customer_key = f.customer_key
GROUP BY c.customer_key, c.first_name, c.last_name
ORDER BY order_count ASC;

```

	customer_key	first_name	last_name	order_count
1	16	Chloe	Young	1
2	17	Wyatt	Hill	1
3	21	Jordan	King	1