-- Retrieve all order details from Table?
select * from superstore;

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2015-116638	2015-01-28	Joseph Holt	Furniture	Tables	2953.18	-1862.31240
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400

-- Q1: List all orders in ascending or descending orders of Sales?
ascending order
select *
from superstore
order by sales asc;

order_id	order_date	customer_name	category	product	sales	profit
CA-2016-143805	2016-12-01	Jonathan Doherty	Office Supplies	Appliances	2104.55	694.50150
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
US-2017-135013	2017-07-24	Harold Ryan	Technology	Copiers	2399.96	839.98600
CA-2015-139731	2015-10-15	Joel Eaton	Furniture	Chairs	2453.43	-350.49000

descending order
select *
from superstore
order by sales desc;

order_id	order_date	customer_name	category	product	sales	profit
CA-2014-116904	2014-09-23	Sanjit Chand	Office Supplies	Binders	9449.95	4630.47550
US-2017-168116	2017-11-04	Grant Thornton	Technology	Machines	7999.98	-3839.99040
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2015-114811	2015-11-08	Keith Dawkins	Technology	Machines	4643.8	2229.02400
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220

-- Q2: List all customers in ascending order of Category and descending order of Sales?
select category,sales
from superstore
order by category asc,sales desc;

category	sales
Furniture	3610.85
Furniture	2953.18
Furniture	2453.43
Office Supplies	9449.95
office Supplies	5083.96

-- Q3: Display only unique records from the order table?

```
select distinct * from superstore;
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2015-116638	2015-01-28	Joseph Holt	Furniture	Tables	2953.18	-1862.31240
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400

-- Q4: Display unique combination of Category and product arranged in proper order?

```
select distinct product,category
from superstore
order by product asc;
```

product	category
Accessories	Office Supplies
Accessories	Technology
Appliances	Office Supplies
Binders	office Supplies
Chairs	Furniture

-- Q5: which order are giving loss to the company?

```
select order_id,profit from superstore
where profit <= 0;
```

order_id	profit
CA-2015-116638	-1862.31240
CA-2015-139731	-350.49000
US-2017-168116	-3839.99040

-- Q6: which are the orders that belong to Technology Category?

```
select order_id ,product
from superstore
where category = 'technology';
```

order_id	profit
CA-2015-116638	-1862.31240
CA-2015-139731	-350.49000
US-2017-168116	-3839.99040

-- Q7: are there any orders from Technology category where product were Sold at Loss?

```
select *
from superstore
where category = 'technology'and profit <= 0
order by profit asc;
```

order_id	order_date	customer_name	category	product	sales	profit
US-2017-168116	2017-11-04	Grant Thornton	Technology	Machines	7999.98	-3839.99040

```
-- Q8: which are the orders where Tables, Phones and Appliances are Sold?
select *
from superstore
where Product = 'tables' or Product ='phones' or product='appliances';
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-116638	2015-01-28	Joseph Holt	Furniture	Tables	2953.18	-1862.31240
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480
CA-2014-168494	2014-12-12	Nora Preis	Furniture	Tables	3610.85	135.40680
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220

```
--  Q9: List all orders excluding Tables Product?
#Method 1
select *
from superstore
where Product != 'tables';
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480

```
#Method 2
select *
from superstore
where not Product = 'tables';
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480

```
-- Q10: from which of the orders company has gained profit by selling Tables, Phones and Appliances?
select *
```

```
from superstore
where product in ('tables','phones','appliances') and profit > 0;
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480
CA-2014-168494	2014-12-12	Nora Preis	Furniture	Tables	3610.85	135.40680
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220

```
-- Q11: List all order details where Sales are between 4000 and 6000?
# Method 1 : Using Between Operator
select *
from superstore
where sales between 4000 and 6000;
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2015-114811	2015-11-08	Keith Dawkins	Technology	Machines	4643.8	2229.02400

```
# Method 2 : using Arithmetic function
select *
from superstore
where sales >=4000 and sales <= 6000;
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2015-114811	2015-11-08	Keith Dawkins	Technology	Machines	4643.8	2229.02400

```
-- Q12: List orders which are placed by customers where customer name starts with R and G and ends
with N?
select customer_name from superstore
where (customer_name like 'R%' or customer_name like 'G%') and customer_name like '%N';
```

customer_name
Rick Hansen
Grant Thornton

```
-- Q13: Orders where characters at 2nd and 3rd of Customer name positions are is ‘ar’?
select *
from superstore
where customer_name like '_ar%';
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2016-159016	2016-03-10	Karen Ferguson	Technology	Phones	4158.91	363.90480
CA-2014-160766	2014-09-14	Darrin Martin	Technology	Machines	2799.96	1371.98040
US-2017-135013	2017-07-24	Harold Ryan	Technology	Copiers	2399.96	839.98600

-- Q14: which are the top 5 Orders in terms of Sales amount?

```
select *
from superstore
order by sales desc
limit 5;
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2014-116904	2014-09-23	Sanjit Chand	Office Supplies	Binders	9449.95	4630.47550
US-2017-168116	2017-11-04	Grant Thornton	Technology	Machines	7999.98	-3839.99040
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2015-114811	2015-11-08	Keith Dawkins	Technology	Machines	4643.8	2229.02400
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220

-- Q15: which are the bottom 25% orders in terms of profits?

```
select * from superstore
where profit <= (select max(profit) from(select profit from superstore order by profit limit 5) as temp );
```

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-116638	2015-01-28	Joseph Holt	Furniture	Tables	2953.18	-1862.31240
CA-2015-139731	2015-10-15	Joel Eaton	Furniture	Chairs	2453.43	-350.49000
CA-2014-168494	2014-12-12	Nora Preis	Furniture	Tables	3610.85	135.40680
US-2017-168116	2017-11-04	Grant Thornton	Technology	Machines	7999.98	-3839.99040
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220
CA-2017-129021	2017-08-23	Patrick O Brill	Technology	Phones	4367.9	327.59220

-- Q16: Display order details with appropriate header labels? e.g. Customer name, Product category and sales amount etc.

```
select customer_name,product as product_category,sales as sales_amount
from superstore;
```

customer_name	product_category	sales_amount
Rick Hansen	Accessories	2309.65
Jane waco	Binders	5083.96
Joseph Holt	Tables	2953.18
Thomas Boland	Accessories	2249.91
Sue Ann Reed	Phones	2735.95
Karen Ferguson	Phones	4158.91
Joel Eaton	Chairs	2453.43

-- Q17: Functions in SQL
update no any value in profit column where order_id is 'CA-2014-116904' using NULL Function
update superstore
set profit =null
where order_id = 'CA-2014-116904';

-- Q : Get the Records where profit value is not available
select * from superstore
where profit is null;

order_id	order_date	customer_name	category	product	sales	profit
CA-2014-116904	2014-09-23	Sanjit Chand	Office Supplies	Binders	9449.95	NULL

-- Q : Update the Records where profit value is not available.
update superstore
set profit = 4210.3
where order_id = 'CA-2014-116904';

order_id	order_date	customer_name	category	product	sales	profit
CA-2014-116904	2014-09-23	Sanjit Chand	Office Supplies	Binders	9449.95	4210.30000

-- abs, sign, ceiling, floor, round , square, isnumeric

select order_id,customer_name,
replace (order_id, '-', ' ') as fn_replace
from superstore;

select * from superstore;

order_id	order_date	customer_name	category	product	sales	profit
CA-2015-124891	2015-07-31	Rick Hansen	Technology	Accessories	2309.65	762.18450
CA-2017-135909	2017-10-13	Jane waco	office Supplies	Binders	5083.96	1906.48500
CA-2015-116638	2015-01-28	Joseph Holt	Furniture	Tables	2953.18	-1862.31240
CA-2017-143567	2017-02-11	Thomas Boland	Office Supplies	Accessories	2249.91	517.47930
CA-2014-154627	2014-10-29	Sue Ann Reed	Technology	Phones	2735.95	341.99400

select order_id,customer_name,

```
left(order_id, 2) as fn_left,
right(order_id, 6) as fn_right,
substring(order_id,4,4) as fn_substring,
concat(order_id, ' ' ,customer_name) as fn_concat,
concat(order_id,space(4),customer_name) as fn_concat_space
from superstore;
```

order_id	customer_name	fn_left	fn_right	fn_substring	fn_concat	fn_concat_space	
CA-2015-124891	Rick Hansen	CA	124891	2015	CA-2015-124891 Rick Hansen	CA-2015-124891	Rick Hansen
CA-2017-135909	Jane waco	CA	135909	2017	CA-2017-135909 Jane waco	CA-2017-135909	Jane waco
CA-2015-116638	Joseph Holt	CA	116638	2015	CA-2015-116638 Joseph Holt	CA-2015-116638	Joseph Holt
CA-2017-143567	Thomas Boland	CA	143567	2017	CA-2017-143567 Thomas Boland	CA-2017-143567	Thomas Boland
CA-2014-154627	Sue Ann Reed	CA	154627	2014	CA-2014-154627 Sue Ann Reed	CA-2014-154627	Sue Ann Reed

```
-- aggregate function min(), max(),avg(),sum(),count()
select min(sales) as min_sales,
max(profit) as max_profit,
avg(sales) as avg_sales,
sum(sales) as sum_sales,
count(order_id) as total_count,
count(*) as count1
from superstore;
```

min_sales	max_profit	avg_sales	sum_sales	total_count	count1
2104.55	4210.30000	3882.785305447049	69890.13549804688	18	18

```
-- DATE FUNCTION ( day,month,year,date format,month name,dayname)
select Order_Date,
day (order_date) as fn_day,
Month(order_date) as fn_month,
year(order_date) as fn_year,
date_format(order_date,'%Y') as fn_dp1,
date_format(order_date,'%m') as fn_dp2,
date_format(order_date,'%d') as fn_dp3,
dayofweek(order_date) as fn_dp4,
year(order_date) as fn_dn,
monthname( order_date) as fn_dn2,
EXTRACT(day FROM order_date) as fn_dn3,
dayname( order_date) as fn_dn
from superstore;
```

Order_Date	fn_day	fn_month	fn_year	fn_dp1	fn_dp2	fn_dp3	fn_dp4	fn_dn	fn_dn2	fn_dn3	fn_dn
2015-07-31	31	7	2015	2015	07	31	6	2015	July	31	Friday
2017-10-13	13	10	2017	2017	10	13	6	2017	October	13	Friday
2015-01-28	28	1	2015	2015	01	28	4	2015	January	28	Wednesday
2017-02-11	11	2	2017	2017	02	11	7	2017	February	11	Saturday
2014-10-29	29	10	2014	2014	10	29	4	2014	October	29	Wednesday
2016-03-10	10	3	2016	2016	03	10	5	2016	March	10	Thursday

-- DATE FUNCTION (Floor , Ceiling)

```
select sysdate(),
order_date,
datediff(sysdate(),order_date)  as dateif_days,
floor(datediff(sysdate(),order_date)/30)  as dateif_month,
ceiling(datediff(sysdate(),order_date)/365)  as dateif_year
from superstore;
```

sysdate()	order_date	dateif_days	dateif_month	dateif_year
2024-10-16 21:29:03	2015-07-31	3365	112	10
2024-10-16 21:29:03	2017-10-13	2560	85	8
2024-10-16 21:29:03	2015-01-28	3549	118	10
2024-10-16 21:29:03	2017-02-11	2804	93	8

```
select null as col1 from superstore;
```

col1
NULL
NULL
NULL
NULL
NULL

ROUND ,cast , Convert

```
select
Profit,
Round(Profit,1) as fn_Round,
cast(profit as decimal) as fn_cast,
convert(profit ,decimal) as fn_convert
from superstore;
```

Profit	fn_Round	fn_cast	fn_convert
762.18450	762.2	762	762
1906.48500	1906.5	1906	1906
-1862.31240	-1862.3	-1862	-1862
517.47930	517.5	517	517

-- Q18: How many orders are placed for each category? Get the total sales amount as well.

```
select category,product,count(order_id) as order_count,sum(sales) as Total_sales
from superstore
group by category,product;
```

category	product	order_count	Total_sales
Technology	Accessories	1	2309.64990234375
office Supplies	Binders	3	17584.2861328125
Furniture	Tables	2	6564.02392578125
Office Supplies	Accessories	1	2249.909912109375
Technology	Phones	4	15630.656005859375

-- what is the per/day sales amount?
select order_date,count(order_id) ,sum(sales) as Total_sales
from superstore
group by order_date
order by order_date asc;

order_date	count(order_id)	Total_sales
2014-09-14	1	2799.9599609375
2014-09-23	1	9449.9501953125
2014-10-29	1	2735.951904296875
2014-12-12	1	3610.847900390625

-- Q19: what is the monthly sales amount?
select month(order_date) as fn_MONTH,count(order_id),sum(sales) as Toatal_sales
from superstore
group by month(order_date);

fn_MONTH	count(order_id)	Toatal_sales
7	2	4709.60986328125
10	3	10273.341796875
1	1	2953.176025390625
2	1	2249.909912109375

-- what is the Yearly sales amount?
select year(order_date) as fn_year,count(order_id),sum(sales) as Toatal_sales
from superstore
group by year(order_date);

fn_year	count(order_id)	Toatal_sales
2015	6	18560.361572265625
2017	6	26469.601806640625
2014	4	18596.7099609375
2016	2	6263.462158203125

-- what is the month and year sales amount?
select
concat_ws('-',cast(year(order_date) as char(4)) ,cast(MONTH(order_date) as char(2))) as fn_year_month,
sum(sales) as Toatal_sales,
count(*) as cnt
from superstore
group by concat_ws('-',cast(year(order_date) as char(4)) ,cast(MONTH(order_date) as char(2)))
order by 1;

fn_year_month	Toatal_sales	cnt
2014-10	2735.951904296875	1
2014-12	3610.847900390625	1
2014-9	12249.91015625	2
2015-1	2953.176025390625	1
2015-10	2453.429931640625	1
2015-11	4643.7998046875	1

-- what is the month(month name) and year sales amount?
select
concat_ws('-',date_format(order_date,'%Y') , date_format(order_date,'%M')) as fn_MONTH,
sum(sales) as Toatal_sales,
count(*) as cnt
from superstore
group by concat_ws('-',date_format(order_date,'%Y') , date_format(order_date,'%M'))
order by 1;

fn_MONTH	Toatal_sales	cnt
2014-December	3610.847900390625	1
2014-October	2735.951904296875	1
2014-September	12249.91015625	2
2015-January	2953.176025390625	1

-- what is the month(month name in short) and year sales amount?
select
concat_ws('-',date_format(order_date,'%Y') ,left(date_format(order_date,'%M'), 3)) as fn_MONTH,
sum(sales) as Toatal_sales,
count(*) as cnt
from superstore
group by concat_ws('-',date_format(order_date,'%Y') ,left(date_format(order_date,'%M'), 3))
order by 1;

fn_MONTH	Toatal_sales	cnt
2014-Dec	3610.847900390625	1
2014-Oct	2735.951904296875	1
2014-Sep	12249.91015625	2
2015-Jan	2953.176025390625	1

-- Q20: Are there any customers with Duplicate reference number?
select order_id,count(order_id) as order_count
from superstore
group by order_id
having count(order_id) > 1;

order_id	order_count
CA-2017-129021	2

-- BONUS QUESTION

-- 1. what is count of customers buying particular product in Technology and Furniture category in year 2014 and 2015.

```
select category,product,count(order_id)
from superstore
where category in('Technology','Furniture') and year(order_date) in (2014,2015)
group by category,product;
```

category	product	count(order_id)
Technology	Accessories	1
Furniture	Tables	2
Technology	Phones	1
Furniture	Chairs	1

-- 2. Get the Maximum, minimum and Average sales amount for each Product along with customer count.

```
select product as product,count(order_id) as count_of_customers,
max(sales) as max_sales,
min(sales) as min_sales,
avg(sales) as avg_sales
from superstore
group by product;
```

product	count_of_customers	max_sales	min_sales	avg_sales
Accessories	2	2309.65	2249.91	2279.7799072265625
Binders	3	9449.95	3050.38	5861.4287109375
Tables	2	3610.85	2953.18	3282.011962890625
Phones	4	4367.9	2735.95	3907.6640014648438
Chairs	1	2453.43	2453.43	2453.429931640625

-- 3.Display data for only those products which are bought by more than one customer.

```
select product,count(order_id) as count_of_customer
from superstore
group by product
having count(order_id) > 1;
```

product	count_of_customer
Accessories	2
Binders	3
Tables	2
Phones	4
Machines	3
Copiers	2

-- 4. Output should be arranged in descending order of customer count and average sales amount.

```
select product,count(order_id) as count_of_customer ,avg(sales) as Average_sales
from superstore
group by product
having count(order_id) > 1
order by count(order_id) desc;
```

product	count_of_customer	Average_sales
Phones	4	3907.6640014648438
Binders	3	5861.4287109375
Machines	3	5147.913248697917
Accessories	2	2279.7799072265625
Tables	2	3282.011962890625
Copiers	2	2774.9449462890625

-- 5. what is count of customers buying particular product in Technology and Furniture category in year 2014 and 2015.Get the Maximum, minimum and Average sales amount for each Product along with customer count. Display data for only those products which are bought by more than one customer. Output should be arranged in descending order of customer count and average sales amount.

```
select category,product,count(order_id),
max(sales) as max_sales,
min(sales) as min_sales,
avg(sales) as avg_sales
from superstore
where category in('Technology','Furniture') and year(order_date) in (2014,2015)
group by category,product
having count(order_id) > 1
order by count(order_id) desc;
```

category	product	count(order_id)	max_sales	min_sales	avg_sales
Furniture	Tables	2	3610.85	2953.18	3282.011962890625
Technology	Machines	2	4643.8	2799.96	3721.8798828125