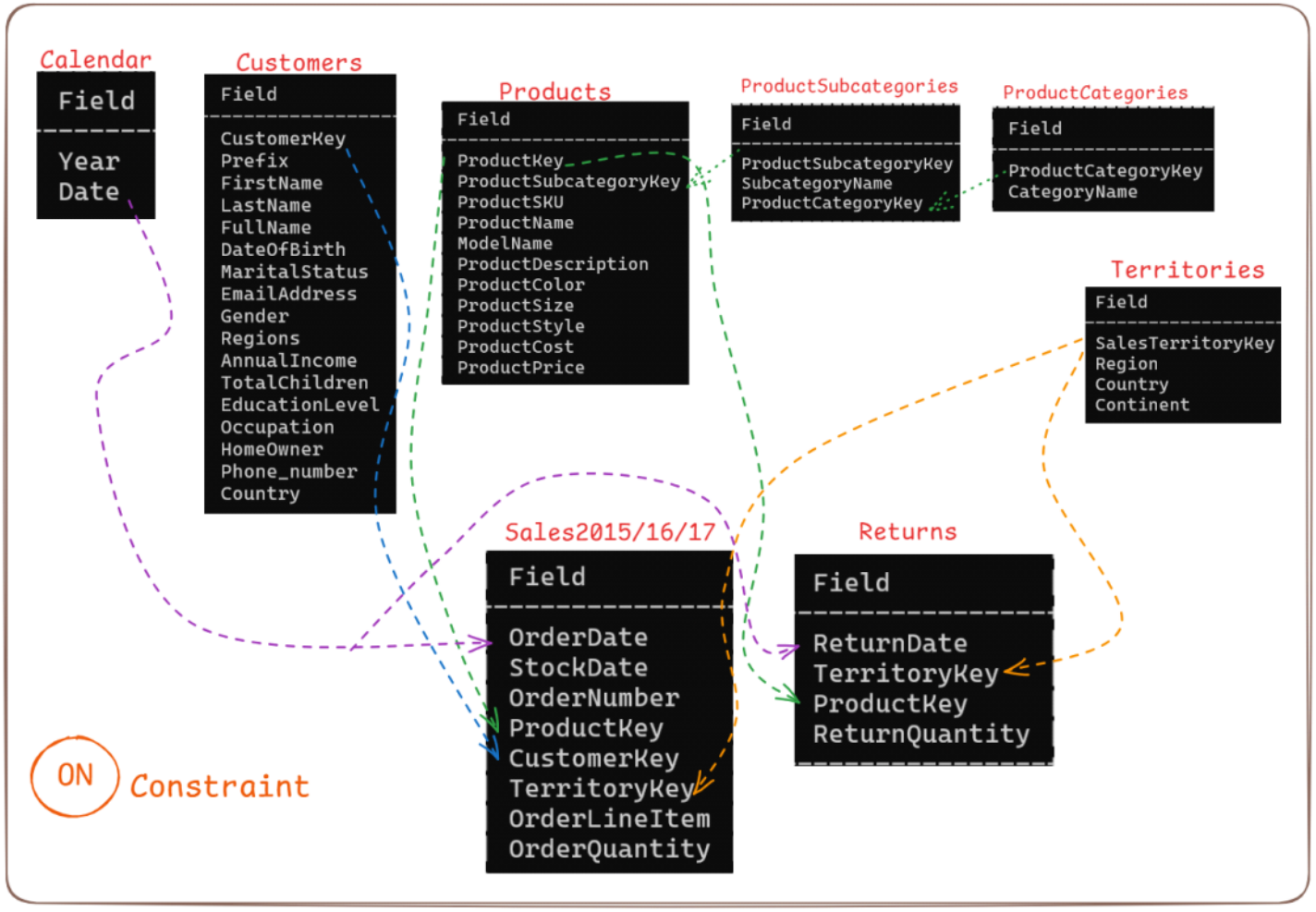
Mastering Subqueries & DATE Manipulation

Session Objectives:

- ✅ Understand Common Table Expressions (CTEs) and why we use them
- ✅ Apply subqueries in SELECT, FROM, WHERE, HAVING, and JOIN
- ✅ Use nested & correlated subqueries for advanced querying
- ✅ Optimize queries using subqueries
- ✅ Understand the DATE data type in SQL (MySQL).
- ✅ Use SQL date functions to retrieve, analyse, and clean data.
- ✅ Apply date arithmetic and format transformations.
- ✅ Clean messy date columns for analysis.
- ✅ Solve real-world queries using date manipulation.



Products returned more than the average returned qty in their subcategory

```
USE weekend_analysis;
SELECT AVG(ReturnQuantity) FROM Returns;

SELECT
    p.ProductSubcategoryKey,
    AVG(r.ReturnQuantity) AS AvgReturnQty
FROM Products p
JOIN Returns r
ON p.ProductKey = r.ProductKey
GROUP BY 1;
```

ProductSubcategoryKey	AvgReturnQty
2	1.0045
1	1.0074
28	1.0360
37	1.0095
32	1.0000
31	1.0000
21	1.0000
30	1.0000
26	1.0000
29	1.0000
19	1.0222
20	1.0000
27	1.0000
3	1.0000
22	1.0000
23	1.0476
25	1.0000

```
Select
    p.ProductKey,
    p.ProductName,
    r.ReturnQuantity
FROM Products p
JOIN Returns r
ON p.ProductKey = r.ProductKey
WHERE r.ReturnQuantity > (
    SELECT
        AVG(r2.ReturnQuantity)
    FROM Returns r2
    JOIN Products p2
    ON r2.ProductKey = p2.ProductKey
    WHERE p2.ProductSubcategoryKey = p.ProductSubcategoryKey
);
```

ProductKey	ProductName	ReturnQuantity
352	Mountain-200 Silver, 38	2
477	Water Bottle - 30 oz.	2
480	Patch Kit/8 Patches	2
478	Mountain Bottle Cage	2
528	Mountain Tire Tube	2
477	Water Bottle - 30 oz.	2
477	Water Bottle - 30 oz.	2
479	Road Bottle Cage	2
481	Racing Socks, M	2
477	Water Bottle - 30 oz.	2
480	Patch Kit/8 Patches	2
478	Mountain Bottle Cage	2
605	Road-750 Black, 48	2
477	Water Bottle - 30 oz.	2
477	Water Bottle - 30 oz.	2
480	Patch Kit/8 Patches	2
223	AWC Logo Cap	2

Nested Subquery inside Subquery

Return the region with maximum return Quantity

```
SELECT
    t.Region,
    sub.total_return_qty
FROM Territories t
JOIN (
    SELECT
        r.TerritoryKey,
    SUM(r.ReturnQuantity) AS total_return_qty
    FROM Returns r
    GROUP BY 1
) sub
ON t.SalesTerritoryKey = sub.TerritoryKey;
```

Region	total_return_qty
Northwest	270
Southwest	362
Southeast	1
Canada	238
France	186
Germany	163
Australia	404
United Kingdom	204

```
471 •  SELECT
472        SUM(r2.ReturnQuantity) AS total_return_qty
473    FROM Returns r2
474    GROUP BY r2.TerritoryKey;
```

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

total_return_qty
404
204
163
362
238
270
186
1

```
SELECT
    MAX(total_return_qty)
    FROM (
        SELECT  SUM(r2.ReturnQuantity) AS total_return_qty
        FROM Returns r2
        GROUP BY r2.TerritoryKey
    )sub2
```

404

```sql
SELECT
    t.Region,
    sub.total_return_qty
FROM Territories t
JOIN (
    SELECT
        r.TerritoryKey,
    SUM(r.ReturnQuantity) AS total_return_qty
    FROM Returns r
    GROUP BY 1
) sub
ON t.SalesTerritoryKey = sub.TerritoryKey;
WHERE sub.total_return_qty = (
    SELECT
        MAX(total_return_qty)
        FROM (
            SELECT
                SUM(r2.ReturnQuantity) AS total_return_qty
            FROM Returns r2
            GROUP BY r2.TerritoryKey
        )sub2
);
```

404

Region	total_return_qty
Australia	404

```sql
SELECT
    t.Region,
    sub.total_return_qty
FROM Territories t
JOIN (
    SELECT
        r.TerritoryKey,
    SUM(r.ReturnQuantity) AS total_return_qty
    FROM Returns r
    GROUP BY 1
) sub
ON t.SalesTerritoryKey = sub.TerritoryKey
ORDER BY 2 DESC
LIMIT 1;
```

Region	total_return_qty
Australia	404

Optimized & Unoptimized

```
SELECT
    c.CustomerKey,
    c.FullName,
    SUM(s.OrderQuantity) As TotalOrderQty
FROM Customers c
JOIN Sales2015 s
ON c.CustomerKey = s.CustomerKey
GROUP BY 1,2; -- 644 row(s) returned
```

CustomerKey	FullName	TotalOrderQty
11455	ROSS SANZ	1
11398	COLIN NATH	1
11388	JOSEPH MARTIN	1
12483	AMANDA PEREZ	1
11394	GEORGE MCDONALD	1
11751	VICTORIA GONZALES	1
11759	DAWN NATH	1
12480	MEREDITH ALVAREZ	1
11452	ERIKA RUBIO	1
12485	VERONICA SUBRAM	1
12468	WAYNE NATH	1
11750	LATOYA SHE	1
11465	LOUIS LUO	1
11400	FRANKLIN RAJI	1
11453	STANLEY MALHOTRA	1

Un-Optimized Query

```
SELECT
    c.CustomerKey,
    c.FullName,
    SUM(s.OrderQuantity) As TotalOrderQty
FROM Customers c
JOIN Sales2015 s
ON c.CustomerKey = s.CustomerKey
GROUP BY 1,2 -- 644 row(s) returned

UNION ALL

SELECT
    c.CustomerKey,
    c.FullName,
    SUM(s.OrderQuantity) As TotalOrderQty
FROM Customers c
JOIN Sales2016 s
ON c.CustomerKey = s.CustomerKey
GROUP BY 1,2 -- 1443 row(s) returned

UNION ALL

SELECT
    c.CustomerKey,
    c.FullName,
    SUM(s.OrderQuantity) As TotalOrderQty
FROM Customers c
JOIN Sales2017 s
ON c.CustomerKey = s.CustomerKey
GROUP BY 1,2; -- 1299 row(s) returned
-- 3386 row(s) returned
```

0.031 sec / 0.235 sec

Optimized Query

```
WITH CombinedSales AS (
    SELECT CustomerKey , OrderQuantity FROM Sales2015
    UNION ALL
    SELECT CustomerKey , OrderQuantity FROM Sales2016
    UNION ALL
    SELECT CustomerKey , OrderQuantity FROM Sales2017
),
TotalCustomerSales AS (
    SELECT CustomerKey , SUM(OrderQuantity) AS TotalSales
    FROM CombinedSales
    GROUP BY CustomerKey
)
SELECT
    c.CustomerKey,
    c.FullName,
    t.TotalSales
FROM TotalCustomerSales t
JOIN Customers c
ON c.CustomerKey = t.CustomerKey
ORDER BY 3 DESC;
```

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CustomerKey	FullName	TotalSales
11262	JENNIFER SIMMONS	106
11300	FERNANDO BARNES	106
11331	SAMANTHA JENKINS	102
11185	ASHLEY HENDERSON	100
11566	APRIL SHAN	99
11091	DALTON PEREZ	97
11277	CHARLES JACKSON	97
11287	HENRY GARCIA	97
11330	RYAN THOMPSON	97
11223	HAILEY PATTERSON	90
11711	DANIEL DAVIS	89
11176	MASON ROBERTS	88
11200	JASON GRIFFIN	83
11276	NANCY CHAPMAN	76
11505	JASMINE POWELL	61
11631	ANTONIO BENNETT	58

Date Manipulation

```
CREATE TABLE Events(
    event_id INT AUTO_INCREMENT,
    event_name VARCHAR(50),
    event_date DATE,
    delivery_date DATE,
    PRIMARY KEY(event_id)
);

DESC Events;
```

Field	Type	Null	Key	Default	Extra
event_id	int	NO	PRI	NULL	auto_increment
event_name	varchar(50)	YES		NULL	
event_date	date	YES		NULL	
delivery_date	date	YES		NULL	

```
INSERT INTO Events(event_name , event_date , delivery_date)
VALUES('ProjectX' , '2025-10-18' , '2025-10-18'),
('Zomato Land', '2025-12-25', '2025-10-25'),
('lollapalooza', '2025-03-06', '2025-03-07'),
('Tech Conference', '2025-03-15', '2025-03-10'),
('Music Festival', '2025-04-20', '2025-04-18'),
('Art Exhibition', '2025-05-05', '2025-05-03'),
('Coding Hackathon', '2025-06-12', '2025-06-12'),
('Startup Meetup', '2025-07-08', '2025-07-11'),
('Book Launch', '2025-08-14', '2025-08-12'),
('AI Workshop', '2025-09-25', '2025-09-27'),
('Food Carnival', '2025-10-30', '2025-11-01'),
('Charity Run', '2025-11-20', '2025-11-24');

SELECT * FROM Events;
```

event_id	event_name	event_date	delivery_date
1	ProjectX	2025-10-18	2025-10-18
2	Zomato Land	2025-12-25	2025-10-25
3	lollapalooza	2025-03-06	2025-03-07
4	Tech Conference	2025-03-15	2025-03-10
5	Music Festival	2025-04-20	2025-04-18
6	Art Exhibition	2025-05-05	2025-05-03
7	Coding Hackathon	2025-06-12	2025-06-12
8	Startup Meetup	2025-07-08	2025-07-11
9	Book Launch	2025-08-14	2025-08-12
10	AI Workshop	2025-09-25	2025-09-27
11	Food Carnival	2025-10-30	2025-11-01
12	Charity Run	2025-11-20	2025-11-24

```
588    -- CURRENT_DATE() -> Today's Date
589 •  SELECT CURRENT_DATE();
```

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

CURRENT_DATE()
2025-10-18

```
-- INSERT Command
INSERT INTO Events(event_name , event_date)
VALUES('ProjectZ' , CURRENT_DATE());

SELECT * FROM Events;
```

event_id	event_name	event_date	delivery_date
1	ProjectX	2025-10-18	2025-10-18
2	Zomato Land	2025-12-25	2025-10-25
3	lollapalooza	2025-03-06	2025-03-07
4	Tech Conference	2025-03-15	2025-03-10
5	Music Festival	2025-04-20	2025-04-18
6	Art Exhibition	2025-05-05	2025-05-03
7	Coding Hackathon	2025-06-12	2025-06-12
8	Startup Meetup	2025-07-08	2025-07-11
9	Book Launch	2025-08-14	2025-08-12
10	AI Workshop	2025-09-25	2025-09-27
11	Food Carnival	2025-10-30	2025-11-01
12	Charity Run	2025-11-20	2025-11-24
13	ProjectZ	2025-10-18	NULL

```
597    -- CURRENT_TIME 'HH:MM:SS'
598 •  SELECT CURRENT_TIME();
```

Result Grid | Filter Rows: | Export: | Wrap C

CURRENT_TIME()
12:41:41

```
500 •  DESC Events;
501    -- Challenge -> To add an event_time Columns
502
```

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

Field	Type	Null	Key	Default	Extra
event_id	int	NO	PRI	NULL	auto_increment
event_name	varchar(50)	YES		NULL	
event_date	date	YES		NULL	
delivery_date	date	YES		NULL	

```
500 •  DESC Events;
501    -- Challenge -> To add an event_time Columns
502 •  ALTER TABLE Events
503    ADD COLUMN event_time TIME;
```

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

Field	Type	Null	Key	Default	Extra
event_id	int	NO	PRI	NULL	auto_increment
event_name	varchar(50)	YES		NULL	
event_date	date	YES		NULL	
delivery_date	date	YES		NULL	
event_time	time	YES		NULL	

```
505 •  SELECT * FROM Events;
```

Result Grid | Filter Rows: | Edit:

event_id	event_name	event_date	delivery_date	event_time
1	ProjectX	2025-10-18	2025-10-18	NULL
2	Zomato Land	2025-12-25	2025-10-25	NULL
3	lollapalooza	2025-03-06	2025-03-07	NULL
4	Tech Conference	2025-03-15	2025-03-10	NULL
5	Music Festival	2025-04-20	2025-04-18	NULL
6	Art Exhibition	2025-05-05	2025-05-03	NULL
7	Coding Hackathon	2025-06-12	2025-06-12	NULL
8	Startup Meetup	2025-07-08	2025-07-11	NULL
9	Book Launch	2025-08-14	2025-08-12	NULL
10	AI Workshop	2025-09-25	2025-09-27	NULL
11	Food Carnival	2025-10-30	2025-11-01	NULL
12	Charity Run	2025-11-20	2025-11-24	NULL
13	ProjectZ	2025-10-18	NULL	NULL
NULL	NULL	NULL	NULL	NULL

```
505 •  INSERT INTO Events(event_name , event_date, event_time)
506    VALUES('Project_Alpha' , CURRENT_DATE() , CURRENT_TIME());
507
508 •  SELECT * FROM Events;
509
510
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

event_id	event_name	event_date	delivery_date	event_time
1	ProjectX	2025-10-18	2025-10-18	NULL
2	Zomato Land	2025-12-25	2025-10-25	NULL
3	lollapalooza	2025-03-06	2025-03-07	NULL
4	Tech Conference	2025-03-15	2025-03-10	NULL
5	Music Festival	2025-04-20	2025-04-18	NULL
6	Art Exhibition	2025-05-05	2025-05-03	NULL
7	Coding Hackathon	2025-06-12	2025-06-12	NULL
8	Startup Meetup	2025-07-08	2025-07-11	NULL
9	Book Launch	2025-08-14	2025-08-12	NULL
10	AI Workshop	2025-09-25	2025-09-27	NULL
11	Food Carnival	2025-10-30	2025-11-01	NULL
12	Charity Run	2025-11-20	2025-11-24	NULL
13	ProjectZ	2025-10-18	NULL	NULL
14	Project_Alpha	2025-10-18	NULL	12:46:23
NULL	NULL	NULL	NULL	NULL

```
510    -- FORMAT 'YYYY-MM-DD HH:MM:SS' [Current_TimeStamp() , NOW()]
511 •  SELECT current_timestamp();
```

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

current_timestamp()
2025-10-18 12:48:47

```
513 •  SELECT NOW();
```

Result Grid | Filter Rows:

NOW()
2025-10-18 12:49:26

Extracting the Date Parts

```
515    -- Extract [Year,Month,Day]
516 •  SELECT YEAR('2025-10-18');
```

Result Grid | Filter Rows: | Export: | Wrap Ce

YEAR('2025-10-18')
2025

```
517 •  SELECT MONTH('2025-10-18');
```

Result Grid | Filter Rows: | Export: | Wrap Ce

MONTH('2025-10-18')
10

```
518 •  SELECT DAY('2025-10-18');
```

Result Grid | Filter Rows: | Export: | Wr

DAY('2025-10-18')
18

```
520 •  SELECT EXTRACT(YEAR FROM Current_DATE());
```

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

EXTRACT(YEAR FROM Current_DATE())
2025

```
521 •  SELECT EXTRACT(MONTH FROM NOW());
```

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

EXTRACT(MONTH FROM NOW())
10

```
522 •  SELECT EXTRACT(DAY FROM CURRENT_TIMESTAMP());
```

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

EXTRACT(DAY FROM CURRENT_TIMESTAMP())
18

```
523 •  SELECT EXTRACT(HOUR FROM NOW());
524 •  SELECT EXTRACT(MINUTE FROM NOW());
```

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

EXTRACT(HOUR FROM NOW())
12

```
524 •  SELECT EXTRACT(MINUTE FROM NOW());
```

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

EXTRACT(MINUTE FROM NOW())
56

```
525 •  SELECT EXTRACT(SECOND FROM NOW());
```

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

EXTRACT(SECOND FROM NOW())
47

```
527 •  SELECT
528        event_name,
529        Year(event_date),
530        MONTH(delivery_date),
531        DAY(event_date)
532    FROM Events;
```

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

event_name	Year(event_date)	MONTH(delivery_date)	DAY(event_date)
ProjectX	2025	10	18
Zomato Land	2025	10	25
lollapalooza	2025	3	6
Tech Conference	2025	3	15
Music Festival	2025	4	20
Art Exhibition	2025	5	5
Coding Hackathon	2025	6	12
Startup Meetup	2025	7	8
Book Launch	2025	8	14
AI Workshop	2025	9	25
Food Carnival	2025	11	30
Charity Run	2025	11	20
ProjectZ	2025	NULL	18
Project_Alpha	2025	NULL	18

```sql
SELECT
    event_name,
    Year(event_date),
    MONTH(delivery_date),
    MONTHNAME(event_date),
    DAY(event_date)
FROM Events;
```

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

event_name	Year(event_date)	MONTH(delivery_date)	MONTHNAME(event_date)	DAY(event_date)
ProjectX	2025	10	October	18
Zomato Land	2025	10	December	25
lollapalooza	2025	3	March	5
Tech Conference	2025	3	March	15
Music Festival	2025	4	April	20
Art Exhibition	2025	5	May	5
Coding Hackathon	2025	6	June	12
Startup Meetup	2025	7	July	3
Book Launch	2025	8	August	14
AI Workshop	2025	9	September	25
Food Carnival	2025	11	October	30
Charity Run	2025	11	November	20
ProjectZ	2025	NULL	October	18
Project Alpha	2025	NULL	October	18

```sql
-- GROUP BY Based ON Month
SELECT
    MONTH(event_date) As Month,
    COUNT(*) AS TotalEvent
FROM Events
GROUP BY 1;
```

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

Month	TotalEvent
10	4
12	1
3	2
4	1
5	1
6	1
7	1
8	1
9	1
11	1

```sql
SELECT
    DATE_ADD(CURRENT_DATE , INTERVAL 10 DAY),-- Today is 18th + 10 -> 28th
    DATE_SUB(CURRENT_DATE , INTERVAL 1 MONTH); -- Oct - 1 = Sept
```

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

DATE_ADD(CURRENT_DATE , INTERVAL 10 DAY)	DATE_SUB(CURRENT_DATE , INTERVAL 1 MONTH)
2025-10-28	2025-09-18

```sql
SELECT
    DATE_ADD(NOW() , INTERVAL 25 HOUR); -- 18th Oct 2025 13:06:36 + 25 hours
```

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

DATE_ADD(NOW() , INTERVAL 25 HOUR)
2025-10-19 14:06:39

```sql
-- Chaining Intervals :
SELECT
    DATE_ADD(DATE_ADD('2025-10-18 12:00:00' , INTERVAL 1 DAY) , INTERVAL 5 HOUR);
```

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

DATE_ADD(DATE_ADD('2025-10-18 12:00:00', INTERVAL 1 DAY), INTERVAL 5 HOUR)
2025-10-19 17:00:00

```sql
SELECT
    DATE_ADD('2025-10-18 12:00:00' , INTERVAL 2 YEAR);
```

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

DATE_ADD('2025-10-18 12:00:00', INTERVAL 2 YEAR)
2027-10-18 12:00:00

```sql
SET SQL_SAFE_UPDATES = 0;
UPDATE Events
SET delivery_date = DATE_ADD(event_date , INTERVAL 2 DAY)
WHERE delivery_date IS NULL;
```

event_id	event_name	event_date	delivery_date	event_time
1	ProjectX	2025-10-18	2025-10-18	NULL
2	Zomato Land	2025-12-25	2025-10-25	NULL
3	lollapalooza	2025-03-06	2025-03-07	NULL
4	Tech Conference	2025-03-15	2025-03-10	NULL
5	Music Festival	2025-04-20	2025-04-18	NULL
6	Art Exhibition	2025-05-05	2025-05-03	NULL
7	Coding Hackathon	2025-06-12	2025-06-12	NULL
8	Startup Meetup	2025-07-08	2025-07-11	NULL
9	Book Launch	2025-08-14	2025-08-12	NULL
10	AI Workshop	2025-09-25	2025-09-27	NULL
11	Food Carnival	2025-10-30	2025-11-01	NULL
12	Charity Run	2025-11-20	2025-11-24	NULL
13	ProjectZ	2025-10-18	2025-10-20	NULL
14	Project_Alpha	2025-10-18	2025-10-20	12:46:23

```sql
UPDATE Events
SET event_time = DATE_ADD(event_date , INTERVAL 17 HOUR)
WHERE event_time IS NULL;

SELECT * FROM Events;
```

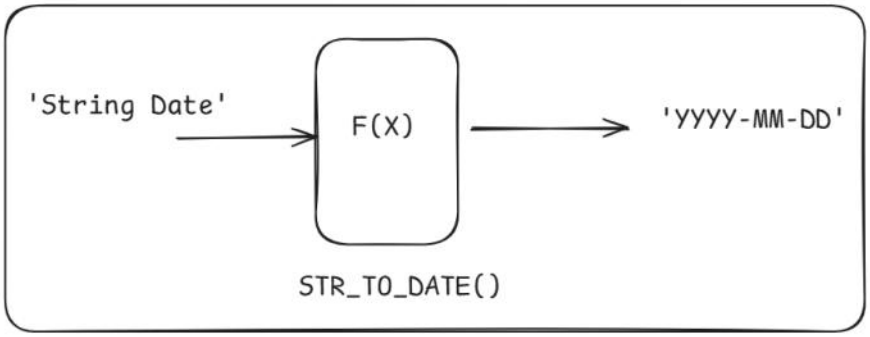
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

event_id	event_name	event_date	delivery_date	event_time
1	ProjectX	2025-10-18	2025-10-18	17:00:00
2	Zomato Land	2025-12-25	2025-10-25	17:00:00
3	lollapalooza	2025-03-06	2025-03-07	17:00:00
4	Tech Conference	2025-03-15	2025-03-10	17:00:00
5	Music Festival	2025-04-20	2025-04-18	17:00:00
6	Art Exhibition	2025-05-05	2025-05-03	17:00:00
7	Coding Hackathon	2025-06-12	2025-06-12	17:00:00
8	Startup Meetup	2025-07-08	2025-07-11	17:00:00
9	Book Launch	2025-08-14	2025-08-12	17:00:00
10	AI Workshop	2025-09-25	2025-09-27	17:00:00
11	Food Carnival	2025-10-30	2025-11-01	17:00:00
12	Charity Run	2025-11-20	2025-11-24	17:00:00
13	ProjectZ	2025-10-18	2025-10-20	17:00:00
14	Project_Alpha	2025-10-18	2025-10-20	12:46:23

DATEDIFF()

```
SELECT
    event_id,
    event_name,
    event_date,
    delivery_date,
    DATEDIFF(event_date , delivery_date) AS delivery_dates
FROM Events;
```

event_id	event_name	event_date	delivery_date	delivery_dates
1	ProjectX	2025-10-18	2025-10-18	0
2	Zomato Land	2025-12-25	2025-10-25	61
3	lollapalooza	2025-03-06	2025-03-07	-1
4	Tech Conference	2025-03-15	2025-03-10	5
5	Music Festival	2025-04-20	2025-04-18	2
6	Art Exhibition	2025-05-05	2025-05-03	2
7	Coding Hackathon	2025-06-12	2025-06-12	0
8	Startup Meetup	2025-07-08	2025-07-11	-3
9	Book Launch	2025-08-14	2025-08-12	2
10	AI Workshop	2025-09-25	2025-09-27	-2
11	Food Carnival	2025-10-30	2025-11-01	-2
12	Charity Run	2025-11-20	2025-11-24	-4
13	ProjectZ	2025-10-18	2025-10-20	-2
14	Project_Alpha	2025-10-18	2025-10-20	-2



https://dev.mysql.com/doc/refman/8.4/en/date-and-time-functions.html#function_date-format

```
SELECT
    DATE_FORMAT('2025-10-18 12:00:00' ,  'Venue : Hotel Lalit on %D %b %Y at %h noon')
    AS formatted_datetime;
-- 'Venue : Hotel Lalit on 18th Oct 2025 at 12 noon'
```

formatted_datetime
Venue : Hotel Lalit on 18th Oct 2025 at 12 noon

```sql
SELECT
    event_name,
    event_date,
    delivery_date,
    event_time,
    DATE_FORMAT(event_date , '%D-%b-%Y') AS formatted_event_date,
    DATE_FORMAT(delivery_date , '%D-%b-%Y') AS formatted_delivery_date,
    DATE_FORMAT(event_time , '%r') AS formatted_event_time
FROM Events;
```

event_name	event_date	delivery_date	event_time	formatted_event_date	formatted_delivery_date	formatted_event_time
ProjectX	2025-10-18	2025-10-18	17:00:00	18th-Oct-2025	18th-Oct-2025	05:00:00 PM
Zomato Land	2025-12-25	2025-10-25	17:00:00	25th-Dec-2025	25th-Oct-2025	05:00:00 PM
lollapalooza	2025-03-06	2025-03-07	17:00:00	6th-Mar-2025	7th-Mar-2025	05:00:00 PM
Tech Conference	2025-03-15	2025-03-10	17:00:00	15th-Mar-2025	10th-Mar-2025	05:00:00 PM
Music Festival	2025-04-20	2025-04-18	17:00:00	20th-Apr-2025	18th-Apr-2025	05:00:00 PM
Art Exhibition	2025-05-05	2025-05-03	17:00:00	5th-May-2025	3rd-May-2025	05:00:00 PM
Coding Hackathon	2025-06-12	2025-06-12	17:00:00	12th-Jun-2025	12th-Jun-2025	05:00:00 PM
Startup Meetup	2025-07-08	2025-07-11	17:00:00	8th-Jul-2025	11th-Jul-2025	05:00:00 PM
Book Launch	2025-08-14	2025-08-12	17:00:00	14th-Aug-2025	12th-Aug-2025	05:00:00 PM
AI Workshop	2025-09-25	2025-09-27	17:00:00	25th-Sep-2025	27th-Sep-2025	05:00:00 PM
Food Carnival	2025-10-30	2025-11-01	17:00:00	30th-Oct-2025	1st-Nov-2025	05:00:00 PM
Charity Run	2025-11-20	2025-11-24	17:00:00	20th-Nov-2025	24th-Nov-2025	05:00:00 PM
ProjectZ	2025-10-18	2025-10-20	17:00:00	18th-Oct-2025	20th-Oct-2025	05:00:00 PM
Project_Alpha	2025-10-18	2025-10-20	12:46:23	18th-Oct-2025	20th-Oct-2025	12:46:23 PM

STR_TO_DATE

```sql
-- STR_TO_DATE -> "YYYY-MM-DD"
SELECT
    STR_TO_DATE('18th_Oct_2025' , '%D_%b_%Y') AS Formatted_date;
```

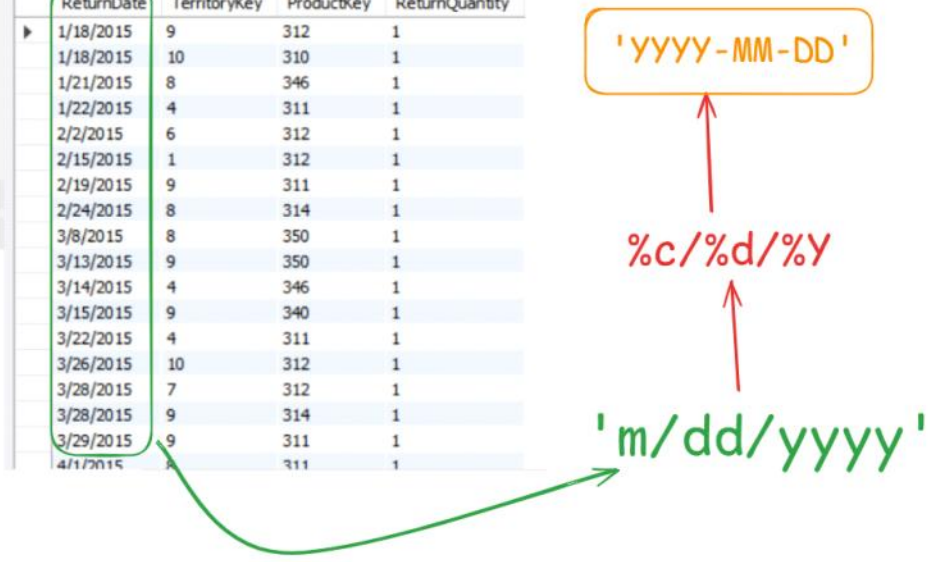
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Formatted_date
2025-10-18

```sql
DESC Returns;
SELECT * FROM Returns;
```

Result Grid | Filter Rows: | Export:

ReturnDate	TerritoryKey	ProductKey	ReturnQuantity
1/18/2015	9	312	1
1/18/2015	10	310	1
1/21/2015	8	346	1
1/22/2015	4	311	1
2/2/2015	6	312	1
2/15/2015	1	312	1
2/19/2015	9	311	1
2/24/2015	8	314	1
3/8/2015	8	350	1
3/13/2015	9	350	1
3/14/2015	4	346	1
3/15/2015	9	340	1
3/22/2015	4	311	1
3/26/2015	10	312	1
3/28/2015	7	312	1
3/28/2015	9	314	1
3/29/2015	9	311	1
4/1/2015	8	311	1



```
-- CALENDAR TABLE CLEANING ========================================
-- Using STR_TO_DATE()

SELECT  * FROM Calendar; -- DATE [dd-mm-yyyy] [%d-%m-%Y] -> ['YYYY-MM-DD']

SELECT
        STR_TO_DATE(Date , '%d-%m-%Y') AS Calendar_date
FROM Calendar;
```

```
720 •  SELECT * FROM Calendar;
```

Result Grid | Filter Rows: | Export:

Year	Date
2015	01-01-2015
2015	02-01-2015
2015	03-01-2015
2015	04-01-2015
2015	05-01-2015
2015	06-01-2015
2015	07-01-2015
2015	08-01-2015
2015	09-01-2015
2015	10-01-2015
2015	11-01-2015
2015	12-01-2015
2015	13-01-2015
2015	14-01-2015

```
722 •  ALTER TABLE Calendar
723    ADD COLUMN calendar_date varchar(50);
724
725 •  SELECT * FROM Calendar;
```

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

Year	Date	calendar_date
2015	01-01-2015	NULL
2015	02-01-2015	NULL
2015	03-01-2015	NULL
2015	04-01-2015	NULL
2015	05-01-2015	NULL
2015	06-01-2015	NULL
2015	07-01-2015	NULL
2015	08-01-2015	NULL
2015	09-01-2015	NULL
2015	10-01-2015	NULL
2015	11-01-2015	NULL
2015	12-01-2015	NULL
2015	13-01-2015	NULL
2015	14-01-2015	NULL

```
727 •  UPDATE Calendar
728    SET calendar_date = STR_TO_DATE(Date , '%d-%m-%Y')
729    WHERE calendar_date IS NULL;
```

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

Year	Date	calendar_date
2015	01-01-2015	2015-01-01
2015	02-01-2015	2015-01-02
2015	03-01-2015	2015-01-03
2015	04-01-2015	2015-01-04
2015	05-01-2015	2015-01-05
2015	06-01-2015	2015-01-06
2015	07-01-2015	2015-01-07
2015	08-01-2015	2015-01-08
2015	09-01-2015	2015-01-09
2015	10-01-2015	2015-01-10
2015	11-01-2015	2015-01-11
2015	12-01-2015	2015-01-12
2015	13-01-2015	2015-01-13
2015	14-01-2015	2015-01-14

Calendar 86 ×

```
731 •  DESC Calendar;
```

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

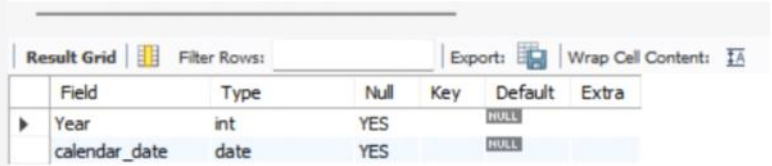
Field	Type	Null	Key	Default	Extra
Year	int	YES		NULL	
Date	text	YES		NULL	
calendar_date	varchar(50)	YES		NULL	

```
731 •  DESC Calendar;
732
733 •  ALTER TABLE Calendar
734    MODIFY COLUMN calendar_date DATE;
```

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

Field	Type	Null	Key	Default	Extra
Year	int	YES		NULL	
Date	text	YES		NULL	
calendar_date	date	YES		NULL	

```
736 •  ALTER TABLE Calendar
737    DROP COLUMN Date;
```



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

Field	Type	Null	Key	Default	Extra
Year	int	YES		NULL	
calendar_date	date	YES		NULL	