

DATE Manipulation - II

DATE Grouping

```
-- DATE GROUPING
SELECT
    MONTH(event_date) AS month,
    COUNT(*) AS event_count
FROM Events
GROUP BY 1;
```

month	event_count
6	4
7	3
8	1

DATE Arithmetic

1. DATE_ADD()
2. DATE_SUB()

```
864 • SELECT DATE_ADD('2024-05-11', INTERVAL 10 DAY) AS DateAdd;
865 • SELECT DATE SUB('2024-05-11', INTERVAL 1 MONTH) AS DateSub;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
DateAdd			
2024-05-21			

DateSub
2024-04-11

Chaining of Intervals

```
SELECT
    DATE_ADD(
        DATE_ADD('2024-05-11', INTERVAL 1 MONTH),
        INTERVAL 10 DAY
    ) AS ChainingOfDate;
```

ChainingOfDate
2024-06-21

```
SELECT DATE_ADD('2025-06-28 19:25:57', INTERVAL 1 YEAR);
```

```
DATE_ADD('2025-06-28 19:25:57',  
INTERVAL 1 YEAR)
```

```
2026-06-28 19:25:57
```

```
SELECT DATE_SUB('2024-05-11', INTERVAL -1 MONTH) AS DateSub;
```

```
DateSub
```

```
2024-06-11
```

```
-- Update all the delivery date by +3 days from the event date ....  
DESC Events;  
SET SQL_SAFE_UPDATES = 0;  
UPDATE Events  
SET delivery_date = DATE_ADD(event_date, INTERVAL 3 DAY);  
SELECT * FROM Events;
```

event_id	event_name	event_date	delivery_date	event_time
1	audit	2025-06-26 15:00:00	2025-06-29	NULL
2	Product Launch	2025-07-15 00:00:00	2025-07-18	NULL
3	Annual Meetup	2025-08-01 00:00:00	2025-08-04	NULL
4	Marketing Campaign	2025-07-05 00:00:00	2025-07-08	NULL
5	Customer Webinar	2025-06-30 00:00:00	2025-07-03	NULL
6	Software Deployment	2025-07-20 00:00:00	2025-07-23	NULL
7	Project X	2025-06-26 22:35:31	2025-06-29	NULL
8	Team Sync	2025-06-26 22:43:54	2025-06-29	22:43:54

```
SELECT DATE_ADD('2025-06-28 19:25:57', INTERVAL 23 hour);
```

```
DATE_ADD('2025-06-28 19:25:57', INTERVAL 23 hour)
```

```
2025-06-29 18:25:57
```

```
888 • SELECT DATE_ADD('2025-06-28 ', INTERVAL 25 hour);
```

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

```
DATE_ADD('2025-06-28 ', INTERVAL 25  
hour)
```

```
2025-06-29 01:00:00
```

DATEDIFF()

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

event_id	event_name	event_date	delivery_date	delivery_days_diff
1	audit	2025-06-26 15:00:00	2025-06-29	3
2	Product Launch	2025-07-15 00:00:00	2025-07-18	3
3	Annual Meetup	2025-08-01 00:00:00	2025-08-04	3
4	Marketing Campaign	2025-07-05 00:00:00	2025-07-08	3
5	Customer Webinar	2025-06-30 00:00:00	2025-07-03	3
6	Software Deployment	2025-07-20 00:00:00	2025-07-23	3
7	Project X	2025-06-26 22:35:31	2025-06-29	3
8	Team Sync	2025-06-26 22:43:54	2025-06-29	3

```
SELECT
    *
    DATEDIFF(delivery_date,event_date) AS delivery_days_diff
FROM Events;
```

event_id	event_name	event_date	delivery_date	event_time	delivery_days_diff
1	audit	2025-06-26 15:00:00	2025-06-29	NULL	3
2	Product Launch	2025-07-15 00:00:00	2025-07-18	NULL	3
3	Annual Meetup	2025-08-01 00:00:00	2025-08-04	NULL	3
4	Marketing Campaign	2025-07-05 00:00:00	2025-07-08	NULL	3
5	Customer Webinar	2025-06-30 00:00:00	2025-07-03	NULL	3
6	Software Deployment	2025-07-20 00:00:00	2025-07-23	NULL	3
7	Project X	2025-06-26 22:35:31	2025-06-29	NULL	3
8	Team Sync	2025-06-26 22:43:54	2025-06-29	22:43:54	3

postpone

Handling Negative Diff ABS()

```
904 • SELECT
905     *,
906     DATEDIFF(event_date,delivery_date) AS delivery_days_diff
907 FROM Events;
```

event_id	event_name	event_date	delivery_date	event_time	delivery_days_diff
1	audit	2025-06-26 15:00:00	2025-06-29	NULL	-3
2	Product Launch	2025-07-15 00:00:00	2025-07-18	NULL	-3
3	Annual Meetup	2025-08-01 00:00:00	2025-08-04	NULL	-3
4	Marketing Campaign	2025-07-05 00:00:00	2025-07-08	NULL	-3
5	Customer Webinar	2025-06-30 00:00:00	2025-07-03	NULL	-3
6	Software Deployment	2025-07-20 00:00:00	2025-07-23	NULL	-3
7	Project X	2025-06-26 22:35:31	2025-06-29	NULL	-3
8	Team Sync	2025-06-26 22:43:54	2025-06-29	22:43:54	-3


```

904 • SELECT
905     *,
906     ABS(DATEDIFF(event_date,delivery_date)) AS delivery_days_diff
907 FROM Events;

```

event_id	event_name	event_date	delivery_date	event_time	delivery_days_diff
1	audit	2025-06-26 15:00:00	2025-06-29	N/A	3
2	Product Launch	2025-07-15 00:00:00	2025-07-18	N/A	3
3	Annual Meetup	2025-08-01 00:00:00	2025-08-04	N/A	3
4	Marketing Campaign	2025-07-05 00:00:00	2025-07-08	N/A	3
5	Customer Webinar	2025-06-30 00:00:00	2025-07-03	N/A	3
6	Software Deployment	2025-07-20 00:00:00	2025-07-23	N/A	3
7	Project X	2025-06-26 22:35:31	2025-06-29	N/A	3
8	Team Sync	2025-06-26 22:43:54	2025-06-29	22:43:54	3

DATE_FORMAT()

```

337 • SELECT
338     event_name,
339     event_date,
340     EXTRACT(MONTH FROM event_date) AS event_month
341 FROM Events;

```

event_name	event_date	event_month
audit	2025-06-26 15:00:00	6
Product Launch	2025-07-15 00:00:00	7
Annual Meetup	2025-08-01 00:00:00	8
Marketing Campaign	2025-07-05 00:00:00	7
Customer Webinar	2025-06-30 00:00:00	6
Software Deployment	2025-07-20 00:00:00	7
Project X	2025-06-26 22:35:31	6
Team Sync	2025-06-26 22:43:54	6

```

-- DATE_FORMAT -> '26th of June-2025'
SELECT
    event_name,
    event_date,
    DATE_FORMAT(event_date, '%D of %M-%Y ') AS Formatted_date,
    EXTRACT(MONTH FROM event_date) AS event_month
FROM Events;

```

DATE Specifier

event_name	event_date	Formatted_date	event_month
audit	2025-06-26 15:00:00	26th of June-2025	6
Product Launch	2025-07-15 00:00:00	15th of July-2025	7
Annual Meetup	2025-08-01 00:00:00	1st of August-2025	8
Marketing Campaign	2025-07-05 00:00:00	5th of July-2025	7
Customer Webinar	2025-06-30 00:00:00	30th of June-2025	6
Software Deployment	2025-07-20 00:00:00	20th of July-2025	7
Project X	2025-06-26 22:35:31	26th of June-2025	6
Team Sync	2025-06-26 22:43:54	26th of June-2025	6

STR_TO_DATE()



```
SELECT STR_TO_DATE('30th May 2026', '%D %M %Y');
```

```
STR_TO_DATE('30th May 2026', '%D %M %Y')
```

```
2026-05-30
```

DATE CLEANING/ DATE PREPROCESSING.....

```
DESC Calendar;
SELECT * FROM Calendar;
-- Pattern DD-MM-YYYY
-- First Rename the column to Calendar_date
ALTER TABLE Calendar
RENAME COLUMN date TO calendar_date;

UPDATE Calendar
SET calendar_date = STR_TO_DATE(calendar_date, "%d-%m-%Y");

ALTER TABLE Calendar
MODIFY COLUMN calendar_date DATE;

SELECT COUNT(*) FROM Calendar;
```

Calendar

YYYY-MM-DD

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

Year	calendar_date
2015	2015-01-01
2015	2015-01-02
2015	2015-01-03
2015	2015-01-04
2015	2015-01-05
2015	2015-01-06
2015	2015-01-07
2015	2015-01-08
2015	2015-01-09

Customers

dd/mm/yyyy

Field	Type	Null	Key	Default	Extra	DateOfBirth
CustomerKey	int	YES		NULL		27/11/1977
Prefix	text	YES		NULL		23/03/1948
FirstName	varchar(50)	YES		NULL		17/12/1948
LastName	varchar(50)	YES		NULL		08/01/1977
FullName	varchar(100)	YES		NULL		16/10/1977
DateOfBirth	text	YES		NULL		13/06/1977
Country	varchar(50)	YES		NULL		24/02/1976
MaritalStatus	text	YES		NULL		24/05/1949
Gender	text	YES		NULL		10/05/1950




UPDATE Customers SET DateOfBirth = STR_TO_DATE(DateOfBirth, "%d/%m/%Y") 2062 row(s) affected Rows matched: 2062 Changed: 2062 Warnings:

938 • **SELECT** COUNT(*) **FROM** Customers;

Result Grid	Filter Rows:	Export:	Wrap Cell C
COUNT(*)			
2062			

940 • **ALTER TABLE** Customers

941 **MODIFY COLUMN** DateOfBirth **DATE**;

Result Grid		Filter Rows:		Export:		Wrap Cell Content
Field	Type	Null	Key	Default	Extra	
CustomerKey	int	YES		NULL		
Prefix	text	YES		NULL		
FirstName	varchar(50)	YES		NULL		
LastName	varchar(50)	YES		NULL		
FullName	varchar(100)	YES		NULL		
▶ DateOfBirth	date	YES		NULL		
Country	varchar(50)	YES		NULL		
MaritalStatus	text	YES		NULL		

```
-- DATE CLEANING ON Customers Table
DESC Customers;
SELECT DISTINCT DateOfBirth FROM Customers;
-- Pattern dd/mm/yyyy
UPDATE Customers
SET DateOfBirth = STR_TO_DATE(DateOfBirth, "%d/%m/%Y");

SELECT COUNT(*) FROM Customers;

ALTER TABLE Customers
MODIFY COLUMN DateOfBirth DATE;
```

Returns

COUNT(*)	1809 row(s) affected Rows matched: 1809
1818	

ReturnDate	TerritoryKey	ProductKey	ReturnQuantity
2015-01-18	9	312	1
2015-01-18	10	310	1
2015-01-21	8	346	1
2015-01-22	4	311	1
2015-02-02	6	312	1
2015-02-15	1	312	1
2015-02-19	9	311	1
2015-02-24	8	314	1

Field	Type	Null	Key	Default	Extra
ReturnDate	date	YES		NULL	
TerritoryKey	int	YES		NULL	
ProductKey	int	YES		NULL	
ReturnQuantity	int	YES		NULL	

```
-- RETURNS DATA Cleaning
DESC Returns;
SELECT * FROM Returns;

-- Pattern mm/dd/yyyy -- month/date is in single digit
```

```
UPDATE Returns
SET ReturnDate = STR_TO_DATE(ReturnDate, "%c/%e/%Y");
```

```
SELECT COUNT(*) FROM Returns;
```

```
ALTER TABLE Returns
MODIFY COLUMN ReturnDate DATE;
```

Sales-2015

```
958 • DESC `sales-2015`;
```

Field	Type	Null	Key	Default	Extra
OrderDate	text	YES		NULL	
StockDate	text	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

```
959 • SELECT Count(*) FROM `sales-2015`;
```

Count(*)
2630

OrderDate	StockDate
01-01-2015	9/21/2001
01-01-2015	12-05-2001
01-01-2015	10/29/2001
01-01-2015	11/16/2001
01-02-2015	12/15/2001
01-02-2015	10-12-2001
01-02-2015	12/18/2001
01-02-2015	10-09-2001
01-03-2015	10-03-2001
1/13/2015	12-10-2001
1/13/2015	11/28/2001
1/13/2015	9/25/2001
1/14/2015	12-08-2001
1/14/2015	12/24/2001
1/14/2015	11/27/2001

Pattern on

-- Order Date - mm-dd-YYYY
- m/dd/YYYY

- Stock Date - m/dd/YYYY
- mm-dd-YYYY

CASE - OrderDATE

--- -- -- -- mm-dd-YYYY
ELSE m/dd/YYYY

```
-- DATE Cleaning Or Date preprocessing on `sales-2015`;
DESC `sales-2015`;
SELECT Count(*) FROM `sales-2015`;
SELECT * FROM `sales-2015`;

UPDATE `sales-2015`
SET OrderDate =
    CASE
        WHEN OrderDate LIKE '___-___-____' THEN STR_TO_DATE(OrderDate, "%m-%d-%Y")
        ELSE STR_TO_DATE(OrderDate, "%c/%d/%Y")
    END;
```

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
2015-01-01	9/21/2001	SO45080	332	14657	1	1	1
2015-01-01	12-05-2001	SO45079	312	29255	4	1	1
2015-01-01	10/29/2001	SO45082	350	11455	9	1	1
2015-01-01	11/16/2001	SO45081	338	26782	6	1	1
2015-01-02	12/15/2001	SO45083	312	14947	10	1	1
2015-01-02	10-12-2001	SO45084	310	29143	4	1	1
2015-01-02	12/18/2001	SO45086	314	18747	9	1	1
2015-01-02	10-09-2001	SO45085	312	18746	9	1	1
2015-01-03	10-03-2001	SO45093	312	18906	9	1	1

```
UPDATE `sales-2015`
SET StockDate = STR_TO_DATE(StockDate, "%m-%d-%Y")
WHERE StockDate LIKE '___-___-____';

UPDATE `sales-2015`
SET StockDate = STR_TO_DATE(StockDate, "%c/%d/%Y")
WHERE StockDate LIKE '%/%/%';
```


OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
2015-01-01	2001-09-21	SO45080	332	14657	1	1	1
2015-01-01	2001-12-05	SO45079	312	29255	4	1	1
2015-01-01	2001-10-29	SO45082	350	11455	9	1	1
2015-01-01	2001-11-16	SO45081	338	26782	6	1	1
2015-01-02	2001-12-15	SO45083	312	14947	10	1	1
2015-01-02	2001-10-12	SO45084	310	29143	4	1	1
2015-01-02	2001-12-18	SO45086	314	18747	9	1	1
2015-01-02	2001-10-09	SO45085	312	18746	9	1	1
2015-01-03	2001-10-03	SO45083	312	18906	9	1	1

```
DESC `sales-2015`;
ALTER TABLE `sales-2015`
MODIFY COLUMN OrderDate DATE,
MODIFY COLUMN StockDATE DATE;
```

Field	Type	Null	Key	Default	Extra
OrderDate	date	YES		NULL	
StockDATE	date	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

sir, what if we have patterns like mm-dd-yyyy and dd-mm-yyyy in same column, then %/%%/ can handle it?

%-%%-

STR_TO_DATE(columnX, "%m-%d-%Y")

STR_TO_DATE(columnX, "%d-%m-%Y")

Sales-2016

```
983 • DESC `sales-2016`;
```

Field	Type	Null	Key	Default	Extra
OrderDate	text	YES		NULL	
StockDate	text	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

m/d/Y

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
1/1/2016	10/17/2002	SO48797	385	14335	1	1	1
1/1/2016	9/30/2002	SO48802	383	24923	9	1	1
1/1/2016	11/29/2002	SO48801	326	15493	1	1	1
1/1/2016	11/16/2002	SO48799	352	26708	4	1	1
1/1/2016	12/16/2002	SO48798	369	23332	9	1	1
1/1/2016	12/2/2002	SO48800	342	15491	5	1	1
1/1/2016	10/19/2002	SO48795	375	16538	8	1	1
1/1/2016	11/23/2002	SO48796	375	15094	7	1	1
1/2/2016	12/1/2002	SO48804	356	12276	8	1	1

```
985 • SELECT COUNT(*) FROM `sales-2016`;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
COUNT(*)			
23935			

```
UPDATE `sales-2016`
SET OrderDate = STR_TO_DATE(OrderDate, "%c/%e/%Y")
WHERE OrderDate LIKE '%/%/%';
```

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
2016-01-01	10/17/2002	SO48797	385	14335	1	1	1
2016-01-01	9/30/2002	SO48802	383	24923	9	1	1
2016-01-01	11/29/2002	SO48801	326	15493	1	1	1
2016-01-01	11/16/2002	SO48799	352	26708	4	1	1
2016-01-01	12/16/2002	SO48798	369	23332	9	1	1
2016-01-01	12/2/2002	SO48800	342	15491	5	1	1
2016-01-01	10/19/2002	SO48795	375	16538	8	1	1
2016-01-01	11/23/2002	SO48796	375	15094	7	1	1
2016-01-01	12/1/2002	SO48804	356	17276	8	1	1

```
UPDATE `sales-2016`
SET StockDate = STR_TO_DATE(StockDate, "%c/%e/%Y")
WHERE StockDate LIKE '%/%/%';
```

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
2016-01-01	2002-10-17	SO48797	385	14335	1	1	1
2016-01-01	2002-09-30	SO48802	383	24923	9	1	1
2016-01-01	2002-11-29	SO48801	326	15493	1	1	1
2016-01-01	2002-11-16	SO48799	352	26708	4	1	1
2016-01-01	2002-12-16	SO48798	369	23332	9	1	1
2016-01-01	2002-12-02	SO48800	342	15491	5	1	1
2016-01-01	2002-10-19	SO48795	375	16538	8	1	1
2016-01-01	2002-11-23	SO48796	375	15094	7	1	1
2016-01-01	2002-12-01	SO48804	356	17276	8	1	1

Field	Type	Null	Key	Default	Extra
OrderDate	date	YES		NULL	
StockDate	date	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

```
-- DATE Cleaning Or Date preprocessing on `sales-2016`;
DESC `sales-2016`;
SELECT * FROM `sales-2016`;
SELECT COUNT(*) FROM `sales-2016`;
```

```
UPDATE `sales-2016`
SET OrderDate = STR_TO_DATE(OrderDate, "%c/%e/%Y")
WHERE OrderDate LIKE '%/%/%';
```

```
UPDATE `sales-2016`
SET StockDate = STR_TO_DATE(StockDate, "%c/%e/%Y")
WHERE StockDate LIKE '%/%/%';
```

```
ALTER TABLE `sales-2016`
MODIFY COLUMN OrderDate DATE,
MODIFY COLUMN StockDate DATE;
```

Sales-2017

```
000 • DESC `sales-2017`;
```

Field	Type	Null	Key	Default	Extra
OrderDate	text	YES		NULL	
StockDate	text	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

```
001 • SELECT * FROM `sales-2017`;  
m/d/Y
```

OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
1/1/2017	12/13/2003	SO61285	529	23791	1	2	2
1/1/2017	9/24/2003	SO61285	214	23791	1	3	1
1/1/2017	9/4/2003	SO61285	540	23791	1	1	1
1/1/2017	9/28/2003	SO61301	529	16747	1	2	2
1/1/2017	10/21/2003	SO61301	377	16747	1	1	1
1/1/2017	10/23/2003	SO61301	540	16747	1	3	1
1/1/2017	9/4/2003	SO61269	215	11792	4	1	1
1/1/2017	10/21/2003	SO61269	229	11792	4	2	1

```
002 • SELECT COUNT(*) FROM `sales-2017`;
```

COUNT(*)
29481

```
-- DATE Cleaning Or Date preprocessing on `sales-2017`;  
DESC `sales-2017`;  
SELECT * FROM `sales-2017`;  
SELECT COUNT(*) FROM `sales-2017`;
```

```
UPDATE `sales-2017`  
SET OrderDate = STR_TO_DATE(OrderDate, "%c/%e/%Y")  
WHERE OrderDate LIKE '%/%/%';
```

```
UPDATE `sales-2017`  
SET StockDate = STR_TO_DATE(StockDate, "%c/%e/%Y")  
WHERE StockDate LIKE '%/%/%';
```

```
ALTER TABLE `sales-2017`  
MODIFY COLUMN OrderDate DATE,  
MODIFY COLUMN StockDATE DATE;
```


Field	Type	Null	Key	Default	Extra
OrderDate	date	YES		NULL	
StockDATE	date	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		NULL	
TerritoryKey	int	YES		NULL	
OrderLineItem	int	YES		NULL	
OrderQuantity	int	YES		NULL	

OrderDate	StockDATE	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity
2017-01-01	2003-12-13	SO61285	529	23791	1	2	2
2017-01-01	2003-09-24	SO61285	214	23791	1	3	1
2017-01-01	2003-09-04	SO61285	540	23791	1	1	1
2017-01-01	2003-09-28	SO61301	529	16747	1	2	2
2017-01-01	2003-10-21	SO61301	377	16747	1	1	1
2017-01-01	2003-10-23	SO61301	540	16747	1	3	1
2017-01-01	2003-09-04	SO61269	215	11792	4	1	1
2017-01-01	2003-10-21	SO61269	229	11792	4	2	1
2017-01-01	2003-10-24	SO61286	528	11530	6	2	2
2017-01-01	2003-09-27	SO61286	536	11530	6	1	2
2017-01-01	2003-10-23	SO61298	530	18155	10	1	2
2017-01-01	2003-12-02	SO61298	214	18155	10	3	1
2017-01-01	2003-12-15	SO61298	223	18155	10	2	1
2017-01-01	2003-10-01	SO61310	538	13541	8	2	2
2017-01-01	2003-11-08	SO61310	534	13541	8	1	1