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()

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)
  026-06-28 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
                                                           HULL
                            2025-06-26 15:00:00
                                              2025-06-29
          audit
                                                          HULL
 2
         Product Launch
                            2025-07-15 00:00:00
                                              2025-07-18
                                                          HULL
 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
                                                          HULL
 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
                                                          HULL
 7
         Project X
                            2025-06-26 22:35:31
                                              2025-06-29
         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
       SELECT DATE_ADD('2025-06-28 ', INTERVAL 25 hour);
                                  Export: Wrap Cell Content: IA
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

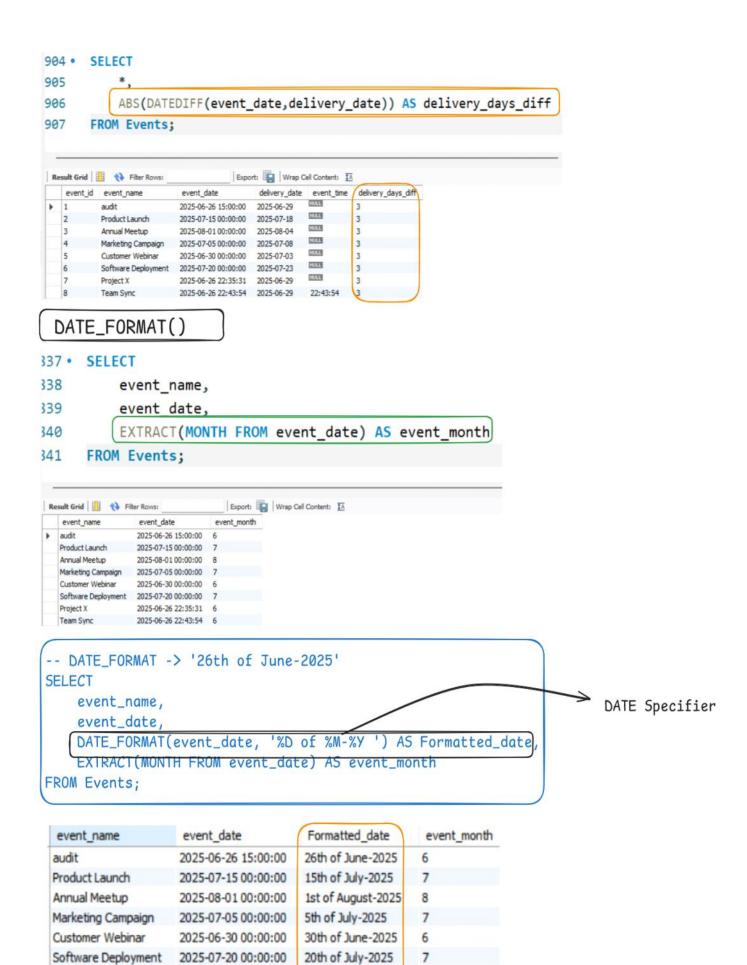
postpone

Handling Negative Diff

ABS()

904 • SELECT 905 DATEDIFF(event_date, delivery_date) AS delivery_days_diff 906 FROM Events; 907 Export: Wrap Cell Content: IA event_id event_name event_date delivery_date event_time delivery_days_diff 1 audit 2025-06-26 15:00:00 2025-06-29 2025-06-29 Product Launch 2025-07-15 00:00:00 2025-07-18 -3 HULL 2025-08-01 00:00:00 2025-08-04 Annual Meetup -3 -3 6 Software Deployment 2025-07-20 00:00:00 2025-07-23 -3 HULL 2025-06-26 22:35:31 2025-06-29 Project X

8 Team Sync 2025-06-26 22:43:54 2025-06-29 22:43:54



2025-06-26 22:35:31

2025-06-26 22:43:54

26th of June-2025

26th of June-2025

6

6

Project X

Team Sync

```
STR_TO_DATE()

F(X)
input

output[yyyy-MM-DD]
```

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

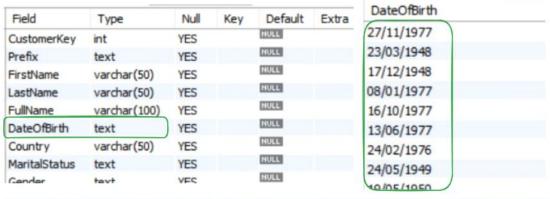
Field	Type	Null	Key	Default	Extra
Year	int	YES		NULL	
calendar date	date	YES		NULL	

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 00

CN-TTS- SQL Page 5

Customers

dd/mm/yyyy



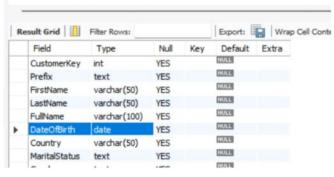
UPDATE Customers SET DateOfBirth = STR_TO_DATE(DateOfBirth, "%d/%m/%Y")

2062 row(s) affected Rows matched: 2062 Changed: 2062 Warnings:



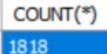
940 • ALTER TABLE Customers

941 MODIFY COLUMN DateOfBirth DATE;



-- 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



1809 row(s) affected Rows matched: 18

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
2045 00 00	_	252	

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

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

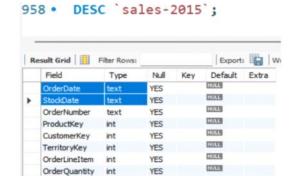
-- Pattern mm/dd/yyyy -- month/date is in single digit

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

SELECT COUNT(*) FROM Returns;

ALTER TABLE Returns
MODIFY COLUMN ReturnDate DATE;
```

Sales-2015





```
OrderDate
           StockDate
01-01-2015
           9/21/2001
           12-05-2001
01-01-2015
01-01-2015 10/29/2001
01-01-2015 11/16/2001
01-02-2015
           12/15/2001
01-02-2015 10-12-2001
           12/18/2001
01-02-2015
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
           12-08-2001
1/14/2015
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	5045093	317	18906	Q	1	1

```
UPDATE `sales-2015`

SET StockDate = STR_TO_DATE(StockDate, "%m-%d-%Y")

WHERE StockDate LIKE '__-__';

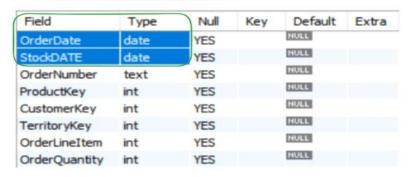
UPDATE `sales-2015`

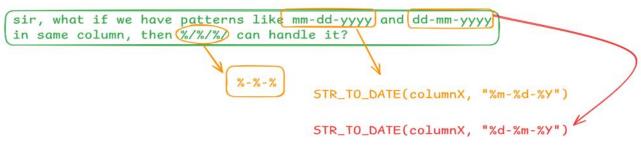
SET StockDate = STR_TO_DATE(StockDate, "%c/%d/%Y")

WHERE StockDate LIKE '%/%/%';
```

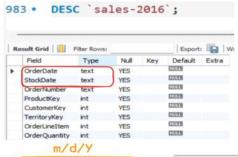


DESC `sales-2015`; ALTER TABLE `sales-2015` MODIFY COLUMN OrderDate DATE, MODIFY COLUMN StockDATE DATE;





Sales-2016



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	R	1	1

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	5048801	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
2016-01-02	12/1/2002	SO48804	356	12276	R	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
2016-01-02	2002-12-01	SO48804	356	12276	R	1	1

Field	Туре	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		HULL	

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

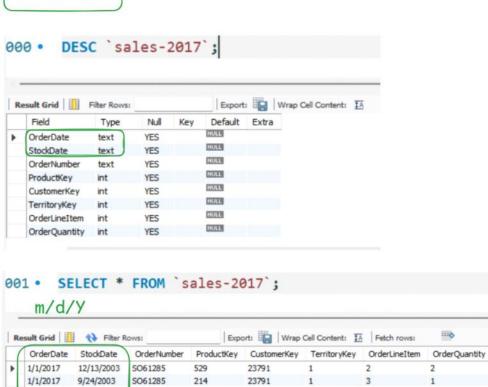
UPDATE `sales-2016`
SET OrderDate = STR_TO_DATE(OrderDate, "%c/%e/%y")
WHERE OrderDate LIKE '%/%/%';

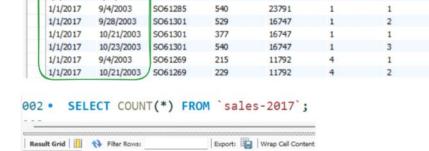
UPDATE `sales-2016`
SET StockDate = STR_TO_DATE(StockDate, "%c/%e/%y")
WHERE StockDate LIKE '%/%/%';

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

Sales-2017

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		HULL	
StockDATE	date	YES		NULL	
OrderNumber	text	YES		NULL	
ProductKey	int	YES		NULL	
CustomerKey	int	YES		HULL	
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	2002 44 00	0001010	ED.A	10541	0	4	4