


```
-- []
CREATE TABLE transactions (
    transaction_id BIGINT AUTO_INCREMENT PRIMARY KEY,
    amount DECIMAL(10,2),
    transaction_date INT NOT NULL, -- [] YYYYMMDD []
    created_at DATETIME
);

-- []
CREATE TABLE calendar (
    calendar_date DATE NOT NULL PRIMARY KEY,
    fiscal_year SMALLINT,
    fiscal_quarter TINYINT
);
```

transactions [] transaction_date [] INT [] YYYYMMDD [] 20240115 [] calendar [] calendar_date [] DATE []

MariaDB / MySQL [] IN [] INT [] DATE [] transactions [] calendar [] DATE [] INT [] calendar_date [] transactions [] calendar []

[] 200 [] 102000 []

[]

[] transaction_date [] INT [] DATE []

- [] 15 AFTER TABLE []
- 47 [] transaction_date [] INT []
- PHP WHERE transaction_date > 20240101 []
- ETL []

[]

[]

MariaDB / MySQL [] VIRTUAL [] STORED []

```
ALTER TABLE transactions
ADD COLUMN transaction_date_real DATE AS (
    STR_TO_DATE(CAST(transaction_date AS CHAR(8)), '%Y%m%d')
) VIRTUAL;
```

`DATE` `DATE`

```
ALTER TABLE transactions
ADD COLUMN transaction_date_real DATE AS (
    STR_TO_DATE(CAST(transaction_date AS CHAR(8)), '%Y%m%d')
) STORED,
ADD INDEX idx_transaction_date_real (transaction_date_real);
```

`STORED` `VIRTUAL` `DATE`

`INDEX`

```
SELECT
    t.transaction_id,
    t.amount,
    t.transaction_date,
    c.fiscal_year,
    c.fiscal_quarter
FROM transactions t
JOIN calendar c ON t.transaction_date_real = c.calendar_date
WHERE t.created_at >= '2024-01-01';
```

`JOIN` `DATE` `DATE` `ref`

17

	105	17	99.7%
	200	200	99.99%
			—

105 **99.7%** Schema

