# Date and Time

# Creating a new date_time_demo table

### # Big Query version

```
CREATE TABLE farmer_market.datetime_demo AS

(

SELECT market_date,
      market_start_time,
      market_end_time
      , parse_datetime('%Y-%m-%d %I:%M %P', CONCAT(market_date, ' ', market_start_time))AS market_start_datetime
      , parse_datetime('%Y-%m-%d %I:%M %P',CONCAT(market_date, ' ', market_end_time)) AS market_end_datetime

FROM farmers_market.market_date_info

)
```

Refer to this link: https://cloud.google.com/bigquery/docs/reference/standard-sql/format-elements

### # My SQL version

```
CREATE TABLE farmers_market.datetime_demo AS
(
SELECT market_date,
market_start_time,
market_end_time,
STR_TO_DATE(CONCAT(market_date,' ', market_start_time), '%Y-%m-%d %h:%i %p') AS market_start_datetime,
STR_TO_DATE(CONCAT(market_date,' ', market_end_time), '%Y-%m-%d %h:%i %p') AS market_end_datetime
FROM farmers_market.market_date_info
)
Refer to this link: https://dev.mysql.com/doc/refman/8.0/en/date-and-time-functions.html
```

# Create customer_purchase_date table with purchases and market_date_info tables(big query)

```sql
create table farmers_market.customer_purchases_date as
(
SELECT
    c.market_date,
    m.market_start_time,
    m.market_end_time,
    c.transaction_time,
    PARSE_DATETIME('%Y-%m-%d %I:%M %P', CONCAT(c.market_date, " ", m.market_start_time )) AS market_start_datetime,
    PARSE_DATETIME('%Y-%m-%d %I:%M %P', CONCAT(c.market_date, " ", m.market_end_time )) AS market_end_datetime,
    PARSE_DATETIME('%Y-%m-%d %H:%M:%S', CONCAT(c.market_date, " ", c.transaction_time )) AS market_date_transaction_time,
    c.product_id,
    c.vendor_id,
    c.customer_id,
    c.quantity,
    c.cost_to_customer_per_qty
FROM
farmers_market.customer_purchases c
LEFT JOIN
farmers_market.market_date_info m
ON
c.market_date = m.market_date
)
```

# Create customer_purchase_date table with purchases and market_date_info tables(My SQL)

```
create table farmers_market.customer_purchases_date as
(
SELECT
        c.market_date,
        m.market_start_time,
        m.market_end_time,
        c.transaction_time,
        STR_TO_DATE(CONCAT(c.market_date, " ", m.market_start_time), '%Y-%m-%d %h:%i %p') AS market_start_datetime,
        STR_TO_DATE(CONCAT(c.market_date, " ", m.market_end_time),'%Y-%m-%d %h:%i %p') AS market_end_datetime,
        STR_TO_DATE(CONCAT(c.market_date, " ", c.transaction_time),'%Y-%m-%d %H:%i:%s') AS market_date_transaction_time,
        c.product_id,
        c.vendor_id,
        c.customer_id,
        c.quantity,
        c.cost_to_customer_per_qty
FROM
        farmers_market.customer_purchases c
LEFT JOIN
        farmers_market.market_date_info m
ON
        c.market_date = m.market_date
)
```

# Extract various date, time components (BigQuery)

```sql
select market_start_datetime,
    extract(date from market_start_datetime) as date,
    extract(time from market_start_datetime) as time,
    extract(year from market_start_datetime) as year_no,
    extract(quarter from market_start_datetime) as q_no,
    extract(month from market_start_datetime) as month_no,
    extract(day from market_start_datetime) as day_no,
    extract(week from market_start_datetime) as week_no,
    extract(DAYOFWEEK from market_start_datetime) as week_day,
    extract(hour from market_start_datetime) as hr,
    extract(minute from market_start_datetime) as minu,
    extract(second from market_start_datetime) as second,
    format_datetime("%B", market_start_datetime) as month_name,
    format_datetime("%A", market_start_datetime) as day_name
from farmers_market.datetime_demo
```

# Extract various date, time components (MySQL)

```
SELECT market_start_datetime,
    EXTRACT(YEAR FROM market_start_datetime) AS date_year,
    EXTRACT(DAY FROM market_start_datetime) AS start_day,
    EXTRACT(MONTH FROM market_start_datetime) AS month_of_year,
    EXTRACT(HOUR FROM market_start_datetime) AS hour_of_day,
    EXTRACT(MINUTE FROM market_start_datetime) AS minute_of_time,
    weekday(market_start_datetime) as week_day_no,
    dayname(market_start_datetime) as day_name,
    monthname(market_start_datetime) as month_name
FROM farmers_market.datetime_demo;
```

Question: Suppose you wish to know from which year to which year data do we have in our database?

**BigQuery**

```
select
min(extract(year FROM market_start_datetime)) AS start_YEAR,
max(EXTRACT(YEAR FROM market_start_datetime)) AS end_YEAR
from `farmers_market.datetime_demo`
```

**My SQL**

```
select
min(extract(year FROM market_start_datetime)) AS start_YEAR,
max(EXTRACT(YEAR FROM market_start_datetime)) AS end_YEAR
from farmers_market.datetime_demo
```