### 主要程式

#### Create Model

#standardSQL

CREATE OR REPLACE

MODEL

`final\_project.project\_c\_cost\_1031\_xreg\_model`

OPTIONS (

MODEL\_TYPE = 'ARIMA\_PLUS\_XREG',

time\_series\_timestamp\_col = 'date',

time\_series\_data\_col = 'cost')

AS

SELECT

date,

cost,

dayofyear,

month,

quarter,

dayofweek,

dayofmonth,

weekofyear,

sin\_day,

cos\_day

FROM

`final\_project.project\_c`

WHERE

date

BETWEEN DATE('2022-01-01')

AND DATE('2022-10-31')

#### Evaluate Model

#standardSQL

SELECT

\*

FROM

ML.EVALUATE(

MODEL `final\_project.project\_c\_cost\_1031\_xreg\_model`,

(

SELECT

date,

cost,

dayofyear,

month,

quarter,

dayofweek,

dayofmonth,

weekofyear,

sin\_day,

cos\_day

FROM

`final\_project.project\_c`

WHERE

date > DATE('2022-10-31')

),

STRUCT(

TRUE AS perform\_aggregation,

30 AS horizon))

### 其他

#standardSQL

SELECT

\*

FROM

ML.ARIMA\_EVALUATE(MODEL final\_project.project\_a\_cost\_1015\_xreg\_model)

#standardSQL

SELECT

\*

FROM

ML.ARIMA\_COEFFICIENTS(MODEL final\_project.project\_a\_cost\_1015\_xreg\_model)

#standardSQL

SELECT

\*

FROM

ML.FORECAST(

MODEL final\_project.project\_a\_cost\_1015\_xreg\_model,

STRUCT(46 AS horizon, 0.8 AS confidence\_level),

(

SELECT

date,

cost,

dayofyear,

month,

quarter,

dayofweek,

dayofmonth,

weekofyear,

sin\_day,

cos\_day

FROM

`final\_project.project\_a`

WHERE

date > DATE('2022-10-15')

))