Using input parquet file,

Create sequenced Python script for the following steps

Step 1 – Creation of option table

Step 2- Creation of index table

Step 3 – Creation of future table

Step 4 – Creation of spilt table

Step 5 – Creation of cal table

Step 6 – Moneyness

Step 7 - Completion

Step -1 Creation of (input name)\_option.duckdb.

Creation of option table

The columns needed are (symbol, date, time, open, high, low, close, volume, oi)

From (input parquet file) apply filter on the symbol column and select on the values with CE or PE, the populate the corresponding data (symbol, date, time, open, high, low, close, volume, oi)

Step -2 Creation of (input name)\_index.duckdb. The columns needed are (date, time, idx\_open, idx\_high, idx\_low, idx\_close).

Creation of index table

Confirm the completion of step- 1

From (input parquet file) apply filter on the symbol column and select on the NIFTY values without any prefix or suffix, and then populate the corresponding data (date, time, open, high, low, close)

And rename (open as idx\_open, high as idx\_high, low as idx\_low, close as idx\_close)

Step -3 Creation of (input name)\_future.duckdb. The columns needed are (date, time, fut\_open, fut\_high, fut\_low, fut\_close, fut\_volume, fut\_oi)

Creation of future table

Confirm the completion of step- 2

From (input parquet file) apply filter on the symbol column and select on the NIFTY-I values without any prefix or suffix, and then populate the corresponding data (date, time, open, high, low, close, volume, oi)

And rename (open as fut\_open, high as fut\_high, low as fut\_low, close as fut\_close, volume as fut\_volume, oi as fut\_oi)

Step -4 Creation of (input name)\_split.duckdb.

Creation of split table

The columns needed are (symbol, instrument, expiry\_date, strike\_price, options\_type)

Confirm the completion of step- 2

From (input name)\_option.duckdb , Select all symbol column and use parse option contract symbols and create OptionContract objects, This will produce data for (symbol, instrument, expiry\_date, strike\_price, options\_type)

Step-5 Creation of (inputname)\_cal.duckdb.

The columns needed are (symbol, instrument, expiry\_date, date, time, expiry\_day, strike\_price, option\_type, spot, strdiffrence, dte, open, high, low, close, volume, oi, moneyness, idx\_open, idx\_high, idx\_low, idx\_close, fut\_open, fut\_high, fut\_low, fut\_close, fut\_volume, fut\_oi).

Confirm the completion of step-3

From (input name)\_option.duckdb, based on symbol, populate (symbol, date, time, open, high, low, close, volume, oi).

From (input name)\_split.duckdb, select all symbol columns and populate their corresponding value of (instrument, expiry\_date, strike\_price and option \_type) then

From (input name)\_index.duckdb,

Based on date and time of option’s symbol column, populate idx\_close as spot, idx\_open, idx\_high, idx\_low, idx\_close).

From (input name)\_future.duckdb,

Based on date and time of option’s symbol column, populate (fut\_open, fut\_high, fut\_low, fut\_close, fut\_volume, fut\_oi)

Calculate the data for expiry\_day, strdifference, dte

expiry\_day – based on expiry\_date

strdifference – difference between spot and strike\_price

dte – difference between expiry\_date and date

Step-6 – Moneyness

Confirm the completion of step-5

Calculate the data for Moneyness as follows,

For Call Options (CE):

- DEEPITM: When the strdifference is equal or less than -501.

-ATM-10: When the strdifference is between -500 and -451

-ATM-9: When the strdifference is between -450 and -401

-ATM-8: When the strdifference is between -400 and -351

-ATM-7: When the strdifference is between -350 and -301

-ATM-6: When the strdifference is between -300 and -251

-ATM-5: When the strdifference is between -250 and -201

-ATM-4: When the strdifference is between -200 and -151

-ATM-3: When the strdifference is between -150 and -101

-ATM-2: When the strdifference is between -100 and -51

-ATM-1: When the strdifference is between -50 and 0

-ATM: When the strdifference is between 50 and 0

-ATM+1: When the strdifference is between 100 and 51

-ATM+2: When the strdifference is between 150 and 101

-ATM+3: When the strdifference is between 200 and 151

-ATM+4: When the strdifference is between 250 and 201

-ATM+5: When the strdifference is between 300 and 251

-ATM+6: When the strdifference is between 350 and 301

-ATM+7: When the strdifference is between 400 and 351

-ATM+8: When the strdifference is between 450 and 401

-ATM+9: When the strdifference is between 500 and 451

-ATM+10: When the strdifference is between 550 and 501

- DEEPOTM: When the strdifference is equal or greater than 551.

For Put Options (PE):

- DEEPOTM: When the strdifference is equal or less than -501.

-ATM+10: When the strdifference is between -500 and -451

-ATM+9: When the strdifference is between -450 and -401

-ATM+8: When the strdifference is between -400 and -351

-ATM+7: When the strdifference is between -350 and -301

-ATM+6: When the strdifference is between -300 and -251

-ATM+5: When the strdifference is between -250 and -201

-ATM+4: When the strdifference is between -200 and -151

-ATM+3: When the strdifference is between -150 and -101

-ATM+2: When the strdifference is between -100 and -51

-ATM+1: When the strdifference is between -50 and 0

-ATM: When the strdifference is between 50 and 0

-ATM-1: When the strdifference is between 100 and 51

-ATM-2: When the strdifference is between 150 and 101

-ATM-3: When the strdifference is between 200 and 151

-ATM-4: When the strdifference is between 250 and 201

-ATM-5: When the strdifference is between 300 and 251

-ATM-6: When the strdifference is between 350 and 301

-ATM-7: When the strdifference is between 400 and 351

-ATM-8: When the strdifference is between 450 and 401

-ATM-9: When the strdifference is between 500 and 451

-ATM-10: When the strdifference is between 550 and 501

- DEEPITM: When the strdifference is equal or greater than 551.

Step-7 – Completion

Confirm the completion of step-6 -moneyness

Once all data are available,

In moneyness, apply filter and remove DEEPITM and DEEPOTM

In time, apply filter and select in between “09:15:00” to “15:29:00”

And copy the entire data into new parquet file named as (input file)\_com.parquet

Create Requirement file and use sqlchemy. Ensure all input and output file name are populated in top for ease of use. Add progress meter