Ksql step by step realtime analysis

Step 1 : pertama-tama jangan lupa untuk jalankan docker file nya dengan *docker-compose up*, lalu untuk masuk ksql kita masukan di terminal baru *docker exec -it ksqldb-cli ksql http://ksqldb-server:8088*

```
(base) rifqimanufi@192 Kafka 3 % docker exec -it ksqldb-cli ksql http://ksqldb-server:8088
OpenJDK 64-Bit Server VM warning: Option UseConcMarkSweepGC was deprecated in version 9.0 and will likely be
removed in a future release.

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                  =        The Database purpose-built       =
                  =        for stream processing apps       =
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CLI v7.2.0, Server v7.2.0 located at http://ksqldb-server:8088
Server Status: RUNNING

Having trouble? Type 'help' (case-insensitive) for a rundown of how things work!

ksql> create table public.fraud (
>   step int,
>   tipe varchar(255),
>   amount float,
>    nameOrig varchar(255),
>    oldbalanceOrg float,
>    newbalanceOrig float,
>    nameDest varchar(255),
>    oldbalanceDest float,
>    newbalanceDest float,
>    isFraud int
>);
line 1:20: mismatched input '.' expecting {';', '(', 'WITH'}
Statement: create table public.fraud (
Caused by: line 1:20: mismatched input '.' expecting {';', '(', 'WITH'}
Caused by: org.antlr.v4.runtime.InputMismatchException
ksql>
```
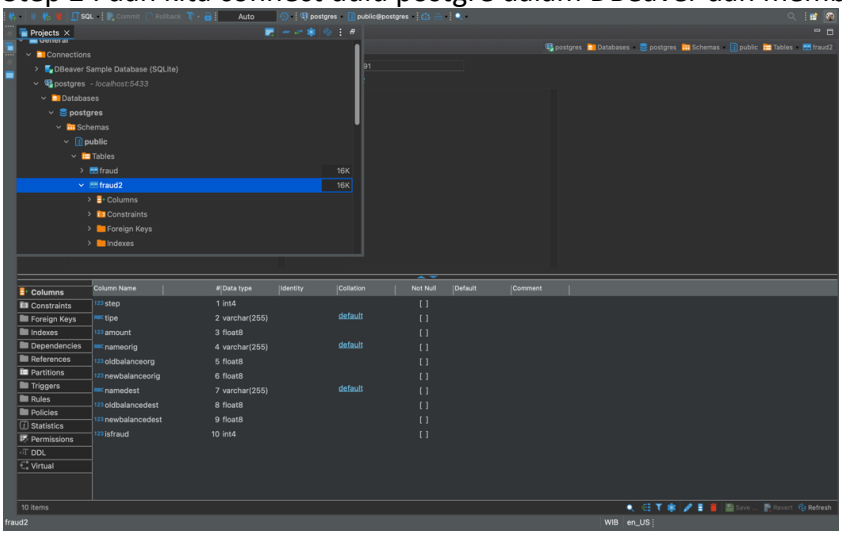
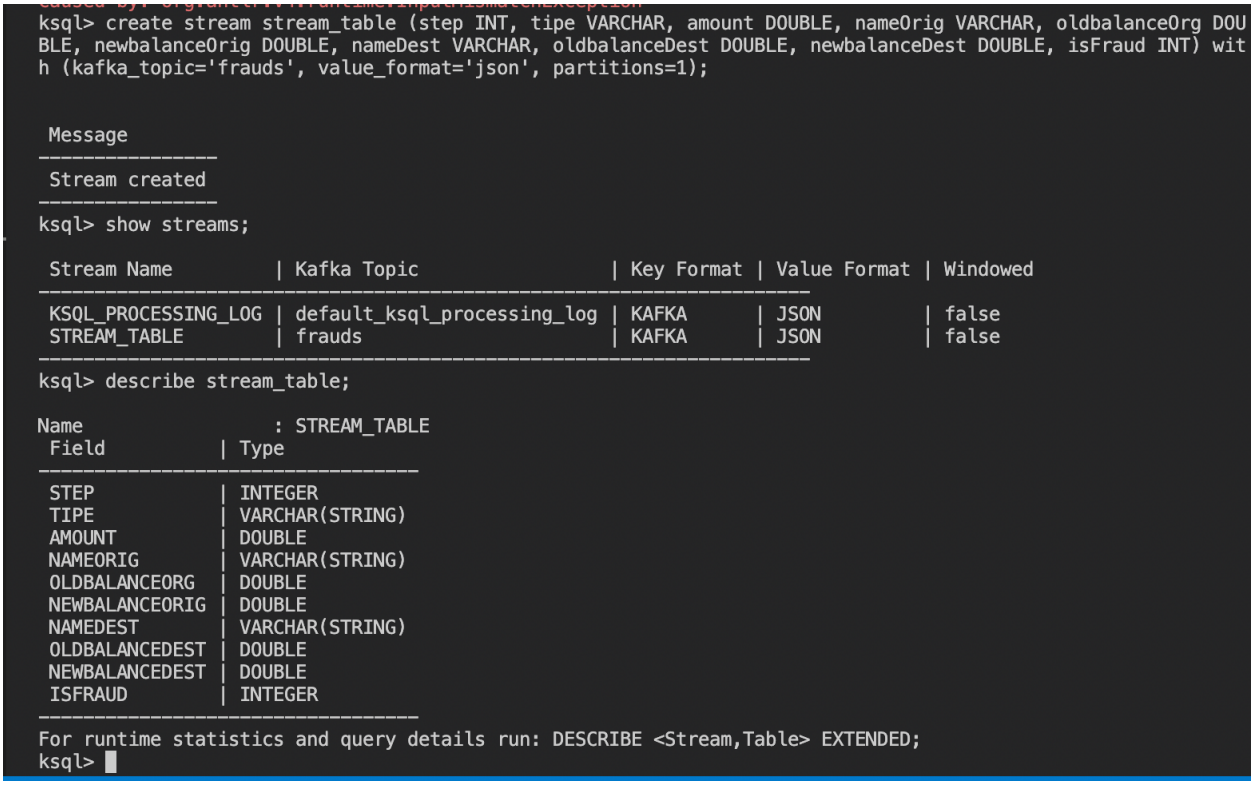

Step 2 : dan kita connect dulu postgre dalam DBeaver dan membuat table

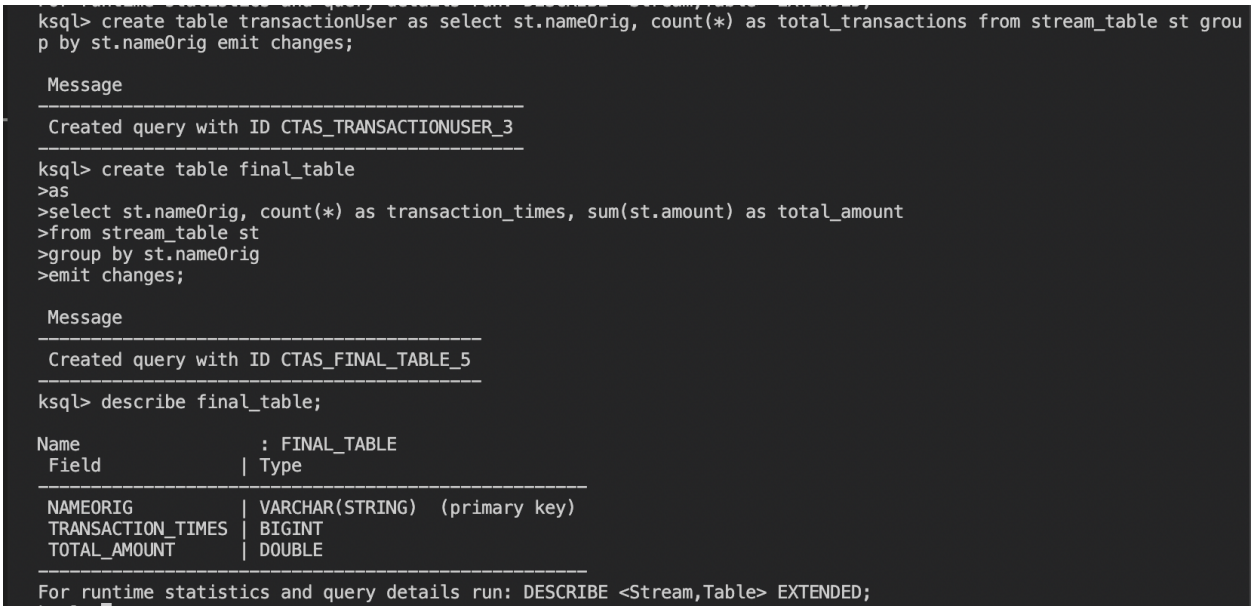


Step 3 : lalu create stream dengan memasukan nama kolom serta type nya, jangan lupa masukan topic nya.



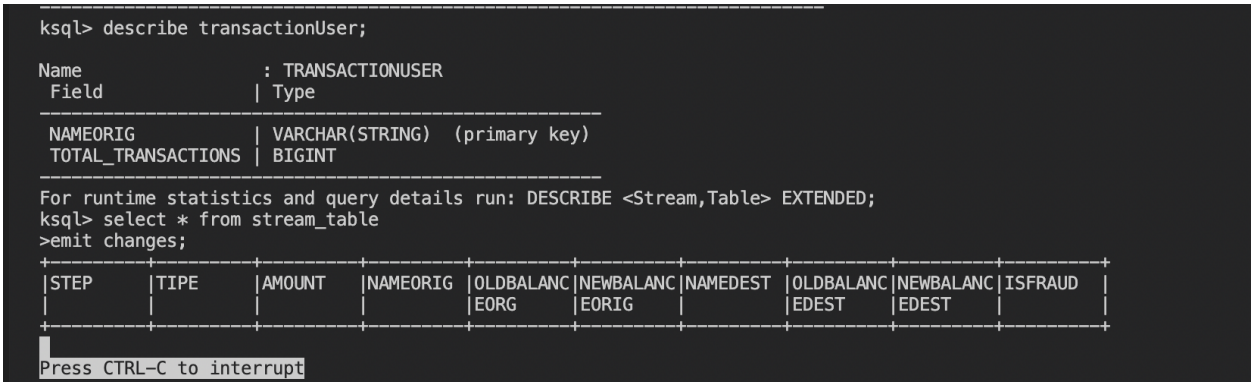
```
ksql> create stream stream_table (step INT, tipe VARCHAR, amount DOUBLE, nameOrig VARCHAR, oldbalanceOrg DOU
BLE, newbalanceOrig DOUBLE, nameDest VARCHAR, oldbalanceDest DOUBLE, newbalanceDest DOUBLE, isFraud INT) wit
h (kafka_topic='frauds', value_format='json', partitions=1);


 Message
----------------
 Stream created
----------------
ksql> show streams;

 Stream Name         | Kafka Topic                 | Key Format | Value Format | Windowed
-------------------------------------------------------------------------------------
 KSQL_PROCESSING_LOG | default_ksql_processing_log | KAFKA      | JSON         | false
 STREAM_TABLE        | frauds                      | KAFKA      | JSON         | false
-------------------------------------------------------------------------------------
ksql> describe stream_table;

Name                 : STREAM_TABLE
 Field          | Type
-----------------------------------
 STEP           | INTEGER
 TIPE           | VARCHAR(STRING)
 AMOUNT         | DOUBLE
 NAMEORIG       | VARCHAR(STRING)
 OLDBALANCEORG  | DOUBLE
 NEWBALANCEORIG | DOUBLE
 NAMEDEST       | VARCHAR(STRING)
 OLDBALANCEDEST | DOUBLE
 NEWBALANCEDEST | DOUBLE
 ISFRAUD        | INTEGER
-----------------------------------
For runtime statistics and query details run: DESCRIBE <Stream,Table> EXTENDED;
ksql>
```

Step 4 : lalu create materialized table



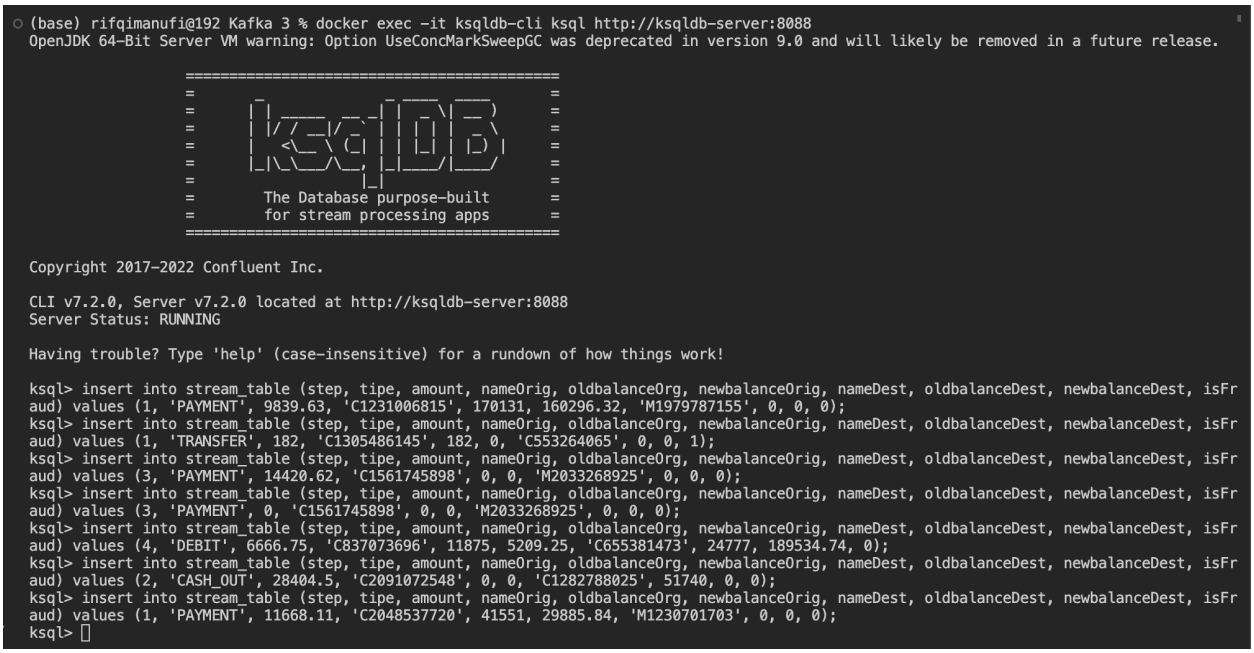
```
ksql> create table transactionUser as select st.nameOrig, count(*) as total_transactions from stream_table st grou
p by st.nameOrig emit changes;

 Message
-------------------------------------------
 Created query with ID CTAS_TRANSACTIONUSER_3
-------------------------------------------
ksql> create table final_table
>as
>select st.nameOrig, count(*) as transaction_times, sum(st.amount) as total_amount
>from stream_table st
>group by st.nameOrig
>emit changes;

 Message
-----------------------------------------
 Created query with ID CTAS_FINAL_TABLE_5
-----------------------------------------
ksql> describe final_table;

Name                 : FINAL_TABLE
 Field             | Type
-----------------------------------------------------
 NAMEORIG          | VARCHAR(STRING)  (primary key)
 TRANSACTION_TIMES | BIGINT
 TOTAL_AMOUNT      | DOUBLE
-----------------------------------------------------
For runtime statistics and query details run: DESCRIBE <Stream,Table> EXTENDED;
```

Step 5 : buke query data stream nya untuk melihat update data setelah kita masukan value



```
ksql> describe transactionUser;

Name                 : TRANSACTIONUSER
 Field              | Type
----------------------------------------------------
 NAMEORIG           | VARCHAR(STRING)  (primary key)
 TOTAL_TRANSACTIONS | BIGINT
----------------------------------------------------
For runtime statistics and query details run: DESCRIBE <Stream,Table> EXTENDED;
ksql> select * from stream_table
>emit changes;
+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
|STEP     |TIPE     |AMOUNT   |NAMEORIG |OLDBALANC|NEWBALANC|NAMEDEST |OLDBALANC|NEWBALANC|ISFRAUD  |
|         |         |         |         |EORG     |EORIG    |         |EDEST    |EDEST    |         |
+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+

Press CTRL-C to interrupt
```

Step 6 : buka terminal baru dan konek Kembali ke server ksql lalu masukan value data dengan insert into stream_table



```
(base) rifqimanufi@192 Kafka 3 % docker exec -it ksqldb-cli ksql http://ksqldb-server:8088
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                  =        The Database purpose-built       =
                  =        for stream processing apps       =
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CLI v7.2.0, Server v7.2.0 located at http://ksqldb-server:8088
Server Status: RUNNING

Having trouble? Type 'help' (case-insensitive) for a rundown of how things work!

ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (1, 'PAYMENT', 9839.63, 'C1231006815', 170131, 160296.32, 'M1979787155', 0, 0, 0);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (1, 'TRANSFER', 182, 'C1305486145', 182, 0, 'C553264065', 0, 0, 1);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (3, 'PAYMENT', 14420.62, 'C1561745898', 0, 0, 'M2033268925', 0, 0, 0);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (3, 'PAYMENT', 0, 'C1561745898', 0, 0, 'M2033268925', 0, 0, 0);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (4, 'DEBIT', 6666.75, 'C837073696', 11875, 5209.25, 'C655381473', 24777, 189534.74, 0);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (2, 'CASH_OUT', 28404.5, 'C2091072548', 0, 0, 'C1282788025', 51740, 0, 0);
ksql> insert into stream_table (step, tipe, amount, nameOrig, oldbalanceOrg, newbalanceOrig, nameDest, oldbalanceDest, newbalanceDest, isFr
aud) values (1, 'PAYMENT', 11668.11, 'C2048537720', 41551, 29885.84, 'M1230701703', 0, 0, 0);
ksql>
```
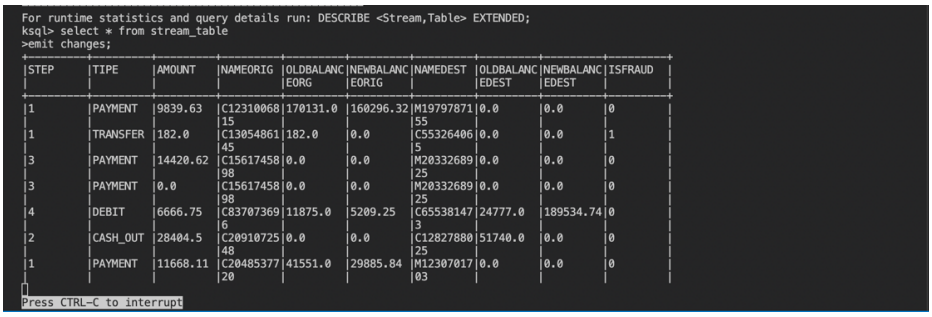
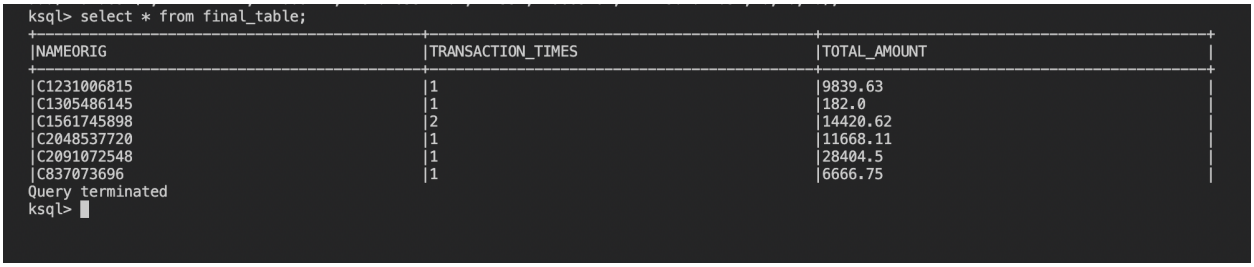

Step 7 : data pun masuk



```
For runtime statistics and query details run: DESCRIBE <Stream,Table> EXTENDED;
ksql> select * from stream_table
>emit changes;
+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
|STEP     |TIPE     |AMOUNT   |NAMEORIG |OLDBALANC|NEWBALANC|NAMEDEST |OLDBALANC|NEWBALANC|ISFRAUD  |
|         |         |         |         |EORG     |EORIG    |         |EDEST    |EDEST    |         |
+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
|1        |PAYMENT  |9839.63  |C12310068|170131.0 |160296.32|M19797871|0.0      |0.0      |0        |
|         |         |         |15       |         |         |55       |         |         |         |
|1        |TRANSFER |182.0    |C13054861|182.0    |0.0      |C55326406|0.0      |0.0      |1        |
|         |         |         |45       |         |         |5        |         |         |         |
|3        |PAYMENT  |14420.62 |C15617458|0.0      |0.0      |M20332689|0.0      |0.0      |0        |
|         |         |         |98       |         |         |25       |         |         |         |
|3        |PAYMENT  |0.0      |C15617458|0.0      |0.0      |M20332689|0.0      |0.0      |0        |
|         |         |         |98       |         |         |25       |         |         |         |
|4        |DEBIT    |6666.75  |C83707369|11875.0  |5209.25  |C65538147|24777.0  |189534.74|0        |
|         |         |         |6        |         |         |3        |         |         |         |
|2        |CASH_OUT |28404.5  |C20910725|0.0      |0.0      |C12827880|51740.0  |0.0      |0        |
|         |         |         |48       |         |         |25       |         |         |         |
|1        |PAYMENT  |11668.11 |C20485377|41551.0  |29885.84 |M12307017|0.0      |0.0      |0        |
|         |         |         |20       |         |         |03       |         |         |         |

Press CTRL-C to interrupt
```

Step 8 : lalu cek final table nya



```
ksql> select * from final_table;
+-----------------------------------------+-----------------------------------------+-----------------------------------------+
|NAMEORIG                                 |TRANSACTION_TIMES                        |TOTAL_AMOUNT                             |
+-----------------------------------------+-----------------------------------------+-----------------------------------------+
|C1231006815                              |1                                        |9839.63                                  |
|C1305486145                              |1                                        |182.0                                    |
|C1561745898                              |2                                        |14420.62                                 |
|C2048537720                              |1                                        |11668.11                                 |
|C2091072548                              |1                                        |28404.5                                  |
|C837073696                               |1                                        |6666.75                                  |
Query terminated
ksql>
```