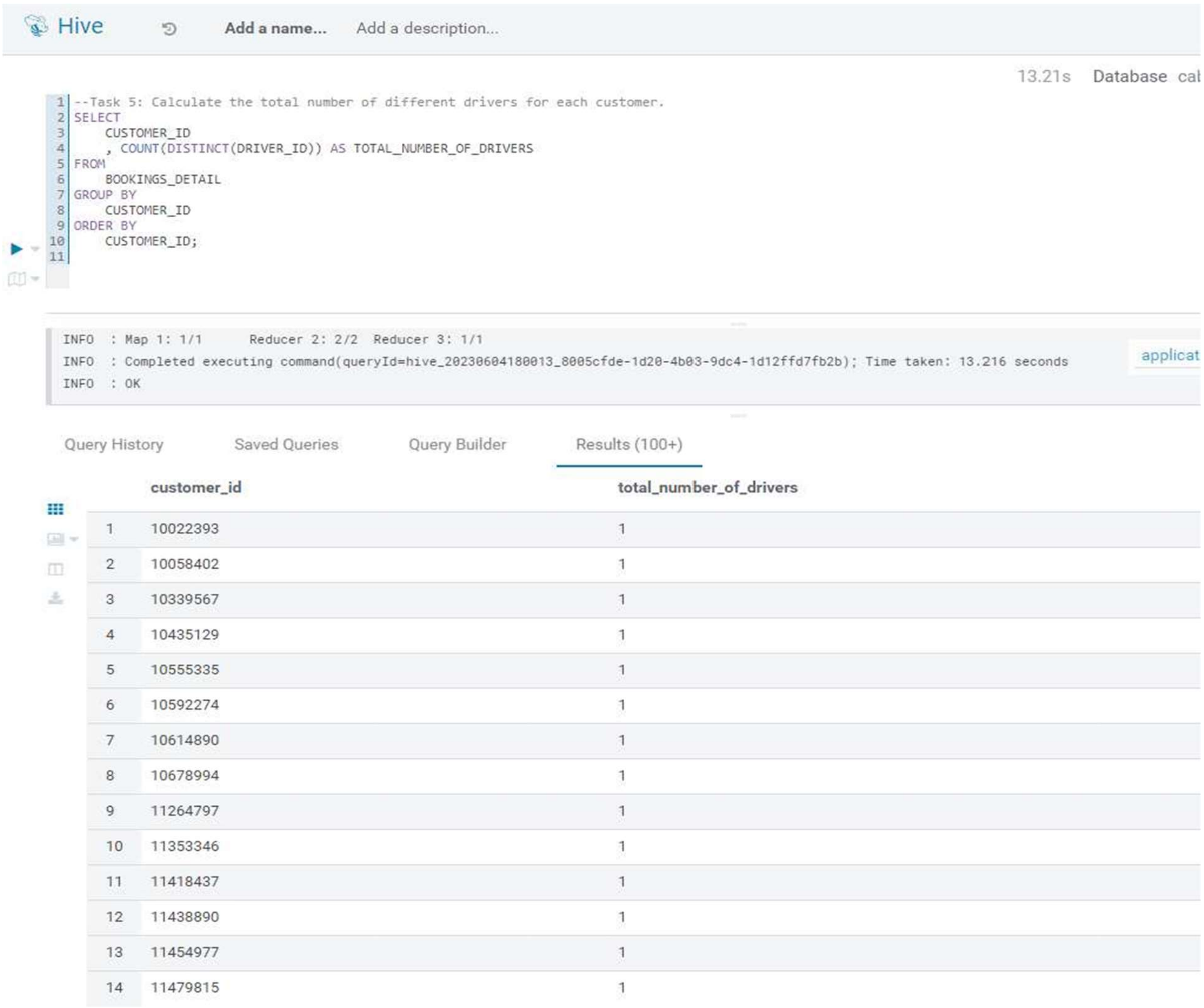
Queries

Task 5: Calculate the total number of different drivers for each customer.

Query:-

```
SELECT
        CUSTOMER_ID
        , COUNT(DISTINCT(DRIVER_ID))
        AS
        TOTAL_NUMBER_OF_DRIVERS
FROM
        BOOKINGS_DETAIL
GROUP BY
        CUSTOMER_ID
ORDER BY
        CUSTOMER_ID;
```

Output:

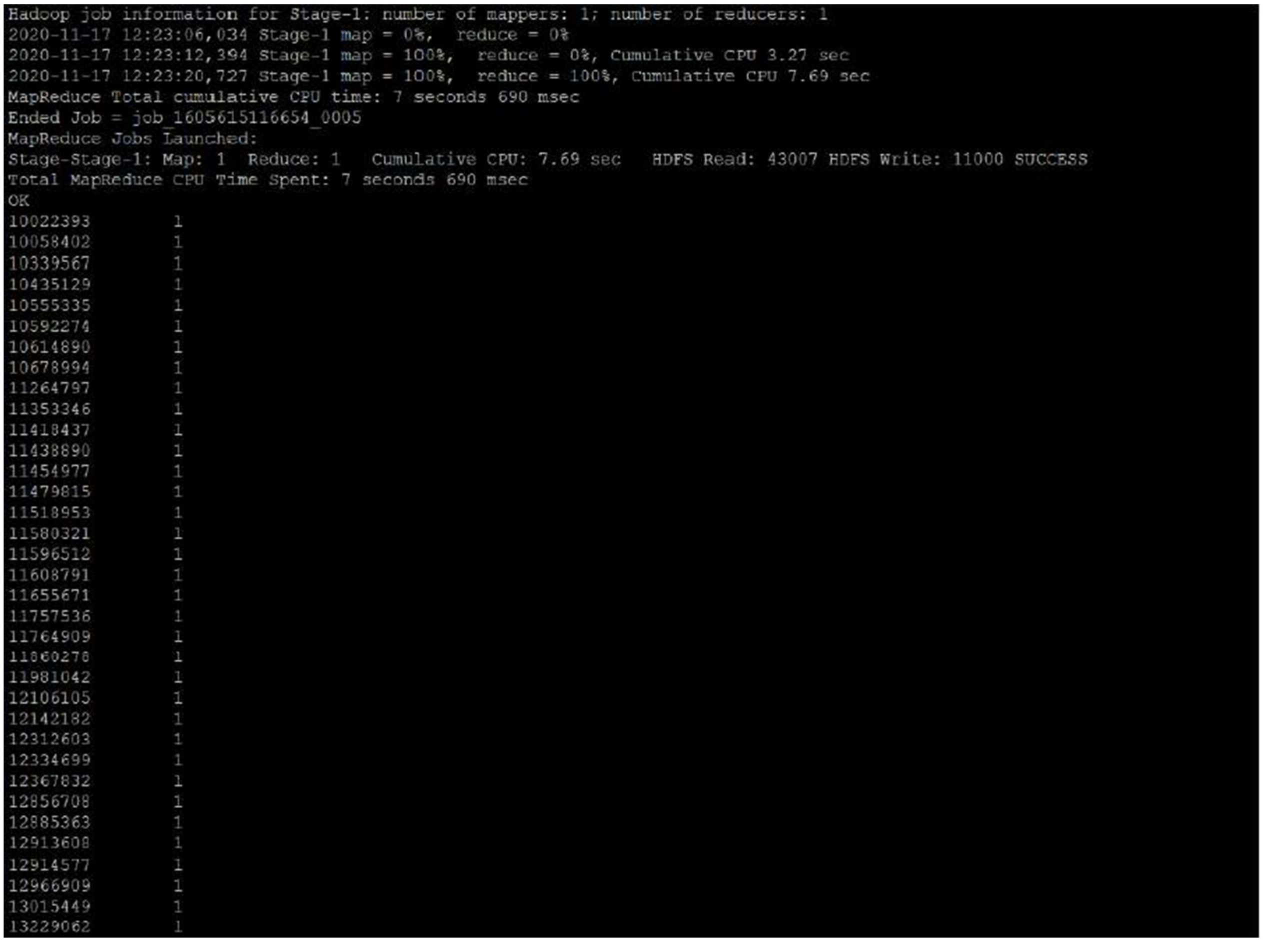


```
--Task 5: Calculate the total number of different drivers for each customer.
SELECT
    CUSTOMER_ID
    , COUNT(DISTINCT(DRIVER_ID)) AS TOTAL_NUMBER_OF_DRIVERS
FROM
    BOOKINGS_DETAIL
GROUP BY
    CUSTOMER_ID
ORDER BY
    CUSTOMER_ID;
```

```
INFO  : Map 1: 1/1      Reducer 2: 2/2  Reducer 3: 1/1
INFO  : Completed executing command(queryId=hive_20230604180013_8005cfde-1d20-4b03-9dc4-1d12ffd7fb2b); Time taken: 13.216 seconds
INFO  : OK
```

	customer_id	total_number_of_drivers
1	10022393	1
2	10058402	1
3	10339567	1
4	10435129	1
5	10555335	1
6	10592274	1
7	10614890	1
8	10678994	1
9	11264797	1
10	11353346	1
11	11418437	1
12	11438890	1
13	11454977	1
14	11479815	1

Validation:



```
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2020-11-17 12:23:06,034 Stage-1 map = 0%,  reduce = 0%
2020-11-17 12:23:12,394 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 3.27 sec
2020-11-17 12:23:20,727 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 7.69 sec
MapReduce Total cumulative CPU time: 7 seconds 690 msec
Ended Job = job_1605615116654_0005
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 7.69 sec   HDFS Read: 43007 HDFS Write: 11000 SUCCESS
Total MapReduce CPU Time Spent: 7 seconds 690 msec
OK
10022393        1
10058402        1
10339567        1
10435129        1
10555335        1
10592274        1
10614890        1
10678994        1
11264797        1
11353346        1
11418437        1
11438890        1
11454977        1
11479815        1
11518953        1
11580321        1
11596512        1
11608791        1
11655671        1
11757536        1
11764909        1
11860278        1
11981042        1
12106105        1
12142182        1
12312603        1
12334699        1
12367832        1
12856708        1
12885363        1
12913608        1
12914577        1
12966909        1
13015449        1
13229062        1
```

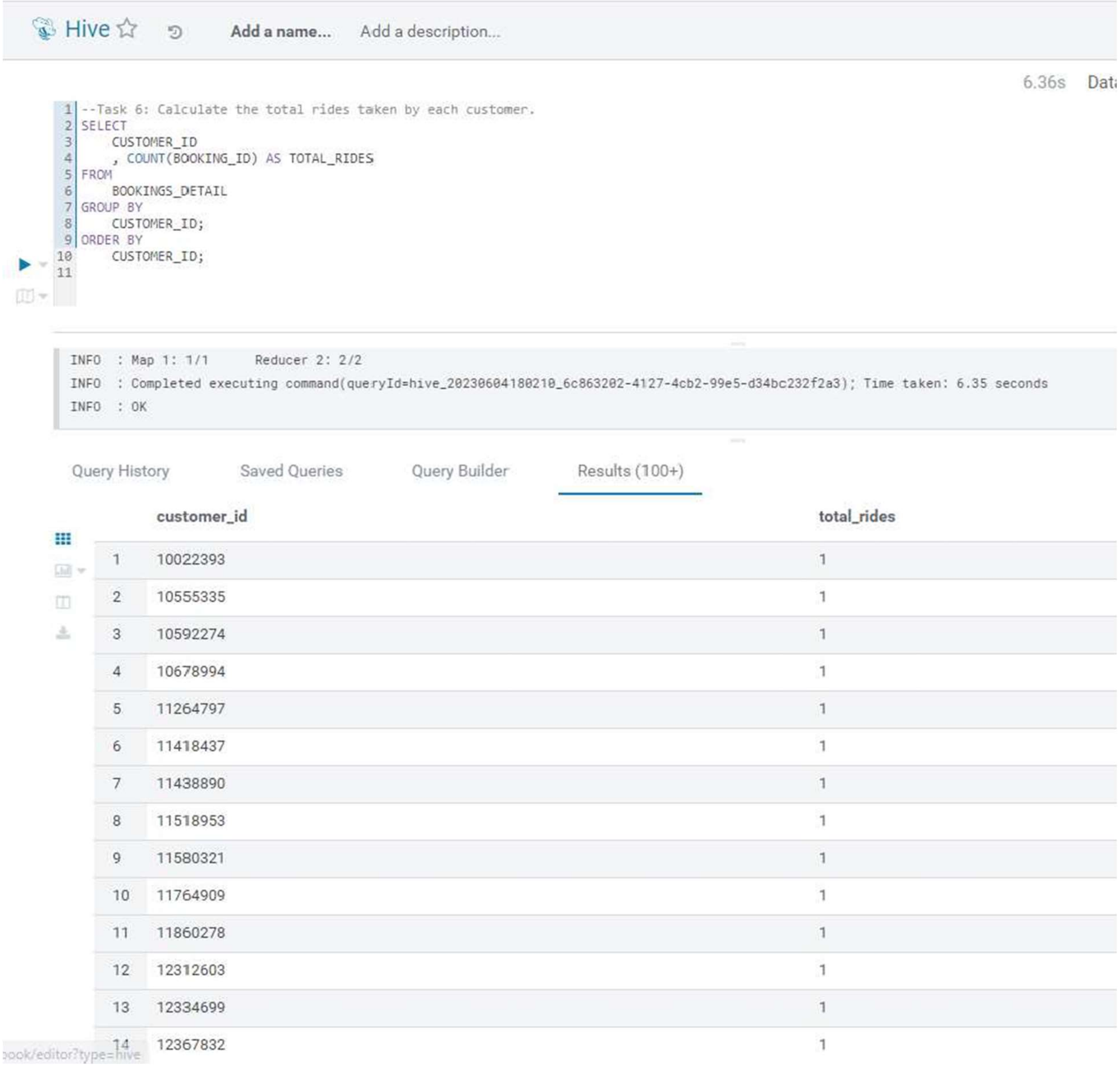
Note: Expected output is exactly matching with validation document.

Task 6: Calculate the total rides taken by each customer.

Query:-

```
SELECT
            CUSTOMER_ID
            , COUNT(BOOKING_ID) AS TOTAL_RIDES
FROM
            BOOKINGS_DETAIL
GROUP BY
            CUSTOMER_ID;
ORDER BY
            CUSTOMER_ID;
```

Output:

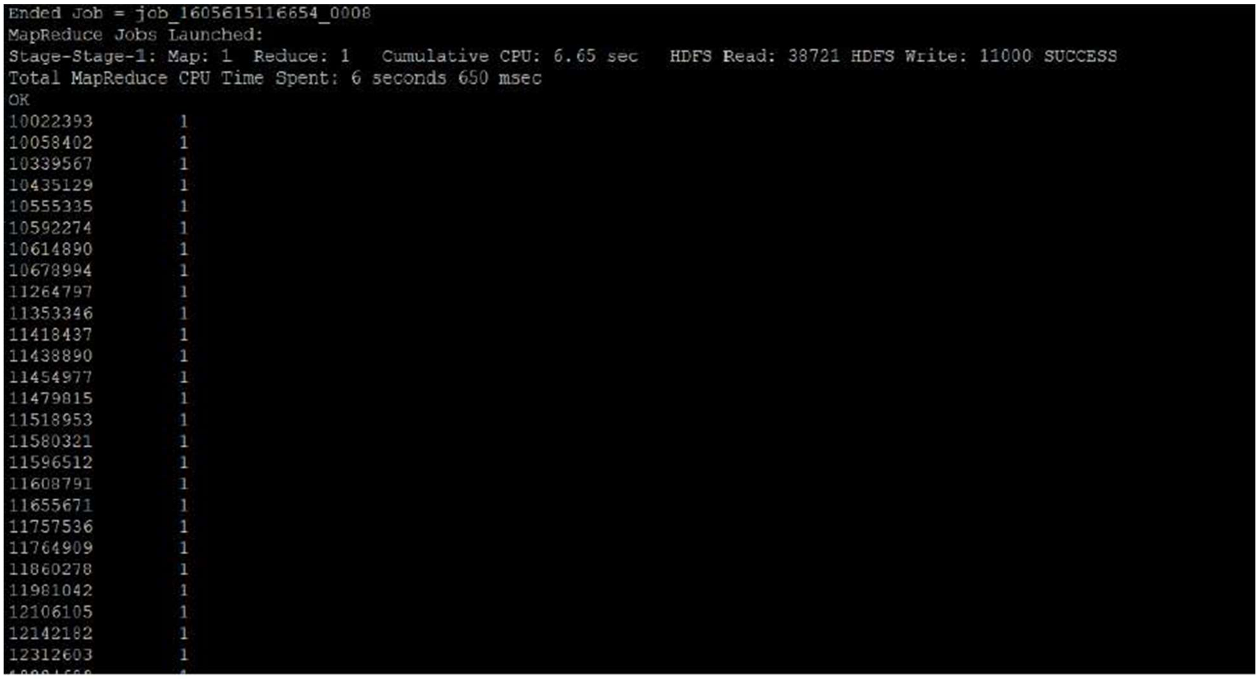


```
--Task 6: Calculate the total rides taken by each customer.
SELECT
    CUSTOMER_ID
    , COUNT(BOOKING_ID) AS TOTAL_RIDES
FROM
    BOOKINGS_DETAIL
GROUP BY
    CUSTOMER_ID;
ORDER BY
    CUSTOMER_ID;
```

```
INFO  : Map 1: 1/1      Reducer 2: 2/2
INFO  : Completed executing command(queryId=hive_20230604180210_6c863202-4127-4cb2-99e5-d34bc232f2a3); Time taken: 6.35 seconds
INFO  : OK
```

	customer_id	total_rides
1	10022393	1
2	10555335	1
3	10592274	1
4	10678994	1
5	11264797	1
6	11418437	1
7	11438890	1
8	11518953	1
9	11580321	1
10	11764909	1
11	11860278	1
12	12312603	1
13	12334699	1
14	12367832	1

Validation:



```
Ended Job = job_1605615116654_0008
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 6.65 sec   HDFS Read: 38721 HDFS Write: 11000 SUCCESS
Total MapReduce CPU Time Spent: 6 seconds 650 msec
OK
10022393        1
10058402        1
10339567        1
10435129        1
10555335        1
10592274        1
10614890        1
10678994        1
11264797        1
11353346        1
11418437        1
11438890        1
11454977        1
11479815        1
11518953        1
11580321        1
11596512        1
11608791        1
11655671        1
11757536        1
11764909        1
11860278        1
11981042        1
12106105        1
12142182        1
12312603        1
```

<u>Note: Expected output is exactly matching with validation document.</u>

Task 7: Find the total visits made by each customer on the booking page and the total ‘Book Now’ button presses.This can show the conversion ratio.

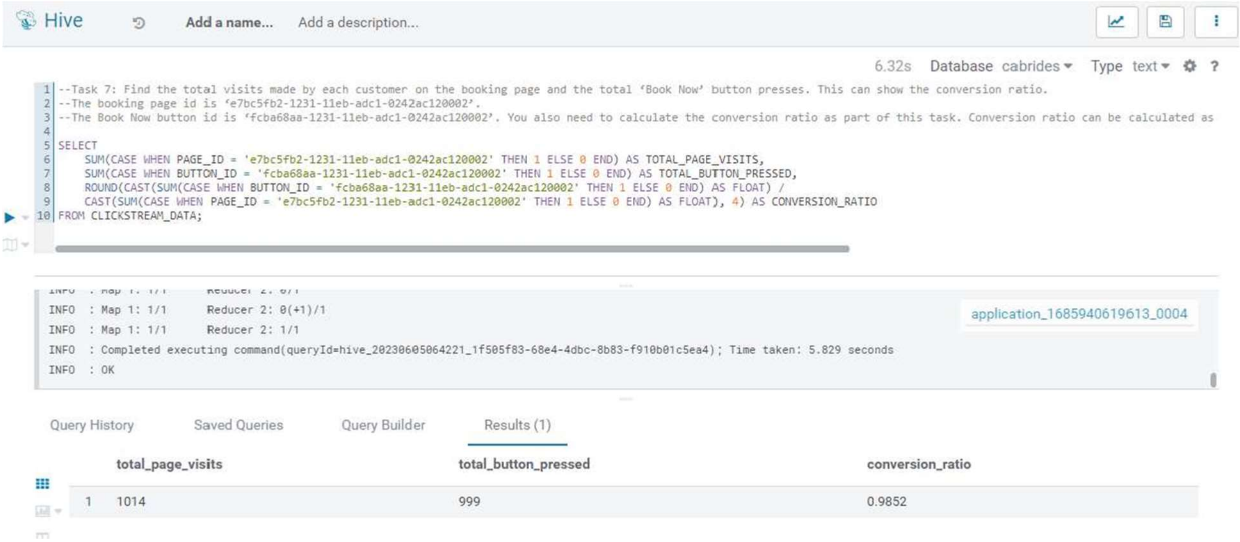
The booking page id is ‘e7bc5fb2-1231-11eb-adc1-0242ac120002’.

The Book Now button id is ‘fcba68aa-1231-11eb-adc1-0242ac120002’. You also need to calculate the conversion ratio as part of this task. Conversion ratio can be calculated as **Total 'Book Now' Button Press/Total Visits made bycustomer on the booking page**.

Query:-

```
SELECT
        SUM(CASE WHEN PAGE_ID = 'e7bc5fb2-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS
        TOTAL_PAGE_VISITS,
        SUM(CASE WHEN BUTTON_ID = 'fcba68aa-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS
        TOTAL_BUTTON_PRESSED,
         ROUND(CAST(SUM(CASE WHEN BUTTON_ID = 'fcba68aa-1231-11eb-adc1-0242ac120002'
         THEN 1 ELSE 0 END) AS FLOAT) /
         CAST(SUM(CASE WHEN PAGE_ID = 'e7bc5fb2-1231-11eb-adc1-0242ac120002' THEN 1 ELSE
         0 END) AS FLOAT), 4) AS CONVERSION_RATIO FROM
       CLICKSTREAM_DATA;
```

Output:-

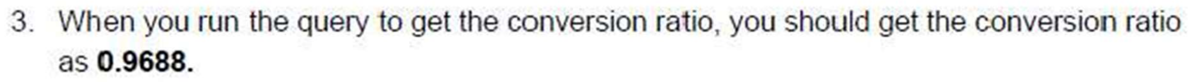


```
--Task 7: Find the total visits made by each customer on the booking page and the total ‘Book Now’ button presses. This can show the conversion ratio.
--The booking page id is ‘e7bc5fb2-1231-11eb-adc1-0242ac120002’.
--The Book Now button id is ‘fcba68aa-1231-11eb-adc1-0242ac120002’. You also need to calculate the conversion ratio as part of this task. Conversion ratio can be calculated as

SELECT
    SUM(CASE WHEN PAGE_ID = 'e7bc5fb2-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS TOTAL_PAGE_VISITS,
    SUM(CASE WHEN BUTTON_ID = 'fcba68aa-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS TOTAL_BUTTON_PRESSED,
    ROUND(CAST(SUM(CASE WHEN BUTTON_ID = 'fcba68aa-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS FLOAT) /
    CAST(SUM(CASE WHEN PAGE_ID = 'e7bc5fb2-1231-11eb-adc1-0242ac120002' THEN 1 ELSE 0 END) AS FLOAT), 4) AS CONVERSION_RATIO
FROM CLICKSTREAM_DATA;
```

```
INFO  : Map 1: 1/1      Reducer 2: 0/1
INFO  : Map 1: 1/1      Reducer 2: 0(+1)/1
INFO  : Map 1: 1/1      Reducer 2: 1/1
INFO  : Completed executing command(queryId=hive_20230605064221_1f505f83-68e4-4dbc-8b83-f910b01c5ea4); Time taken: 5.829 seconds
INFO  : OK
```

	total_page_visits	total_button_pressed	conversion_ratio
1	1014	999	0.9852

Validation:-



3. When you run the query to get the conversion ratio, you should get the conversion ratio as **0.9688.**

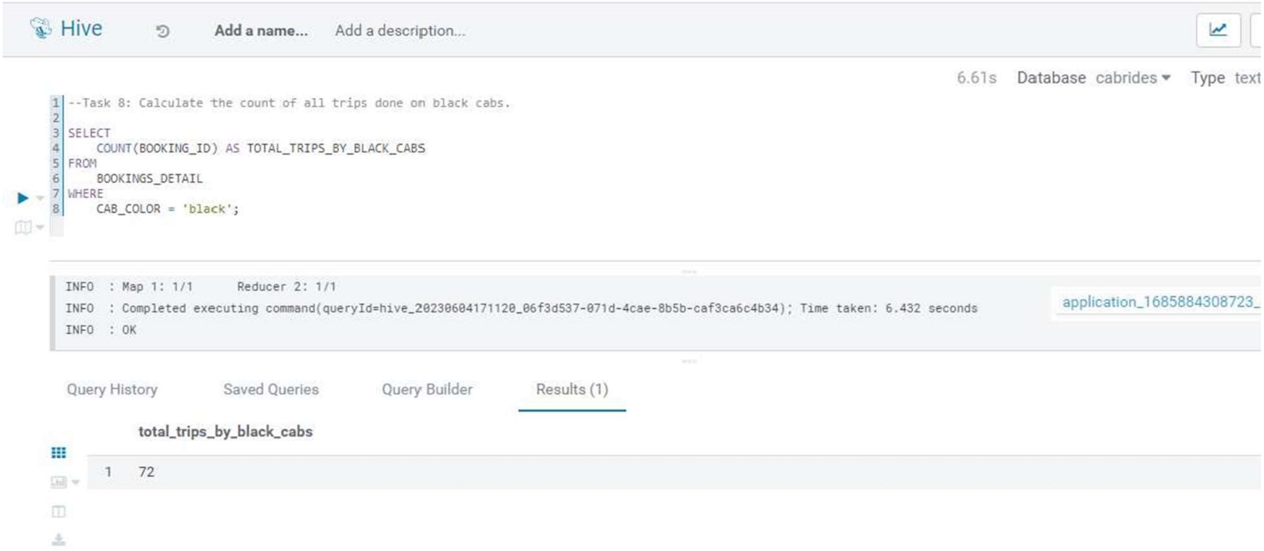
Note: Slightly difference in conversion ratio that is because ~16 event were captured from kafka stream.

Task 8: Calculate the count of all trips done on black cabs.

Query:-

```
SELECT
            COUNT(BOOKING_ID) AS TOTAL_TRIPS_BY_BLACK_CABS
FROM
            BOOKINGS_DETAIL
WHERE
            CAB_COLOR = black;
```

Output:

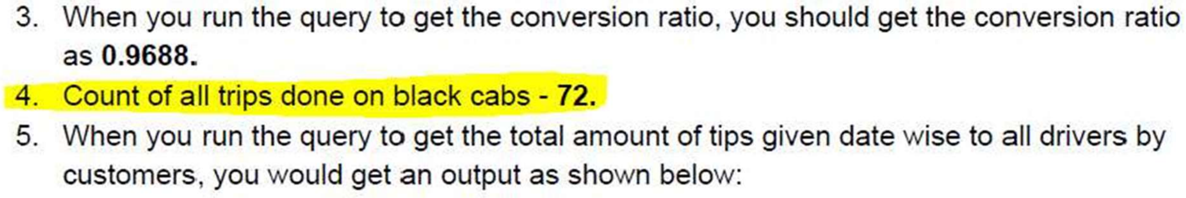


```
--Task 8: Calculate the count of all trips done on black cabs.

SELECT
    COUNT(BOOKING_ID) AS TOTAL_TRIPS_BY_BLACK_CABS
FROM
    BOOKINGS_DETAIL
WHERE
    CAB_COLOR = 'black';
```

```
INFO  : Map 1: 1/1      Reducer 2: 1/1
INFO  : Completed executing command(queryId=hive_20230604171120_06f3d537-071d-4cae-8b5b-caf3ca6c4b34); Time taken: 6.432 seconds
INFO  : OK
```

	total_trips_by_black_cabs
1	72

Validation:



3. When you run the query to get the conversion ratio, you should get the conversion ratio as **0.9688.**
4. Count of all trips done on black cabs - **72.**
5. When you run the query to get the total amount of tips given date wise to all drivers by customers, you would get an output as shown below:

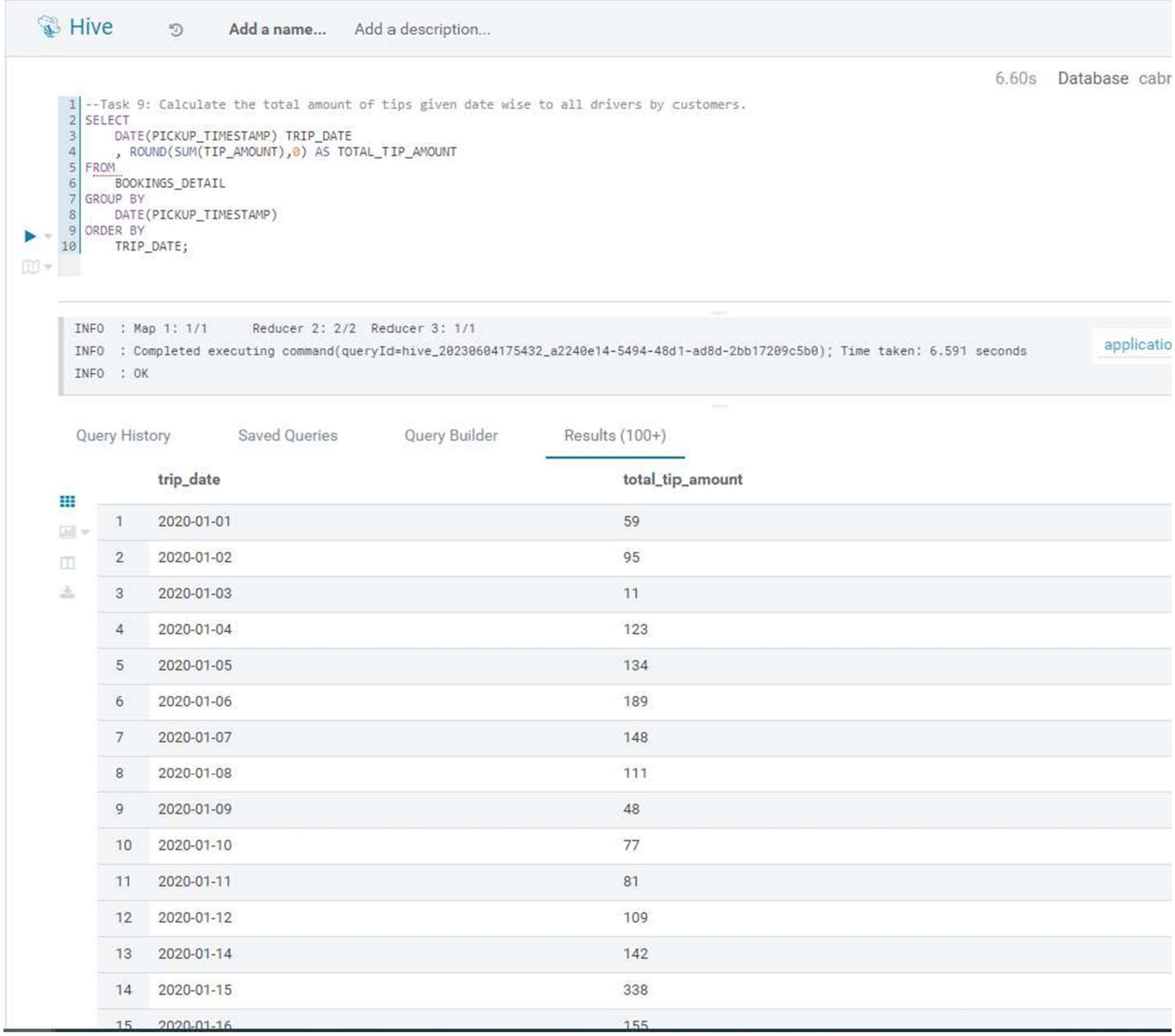
Note: Number of trips are exactly matching with validation document.

Task 9: Calculate the total amount of tips given date wise to all drivers by customers.

Query:-

```
SELECT

        DATE(PICKUP_TIMESTAMP)
        TRIP_DATE ,
        ROUND(SUM(TIP_AMOUNT),0)
        AS TOTAL_TIP_AMOUNT

FROM

        BOOKINGS_DETAIL

GROUP BY

        DATE(PICKUP_TIMESTAMP)

ORDER BY

        TRIP_DATE;
```

Output:

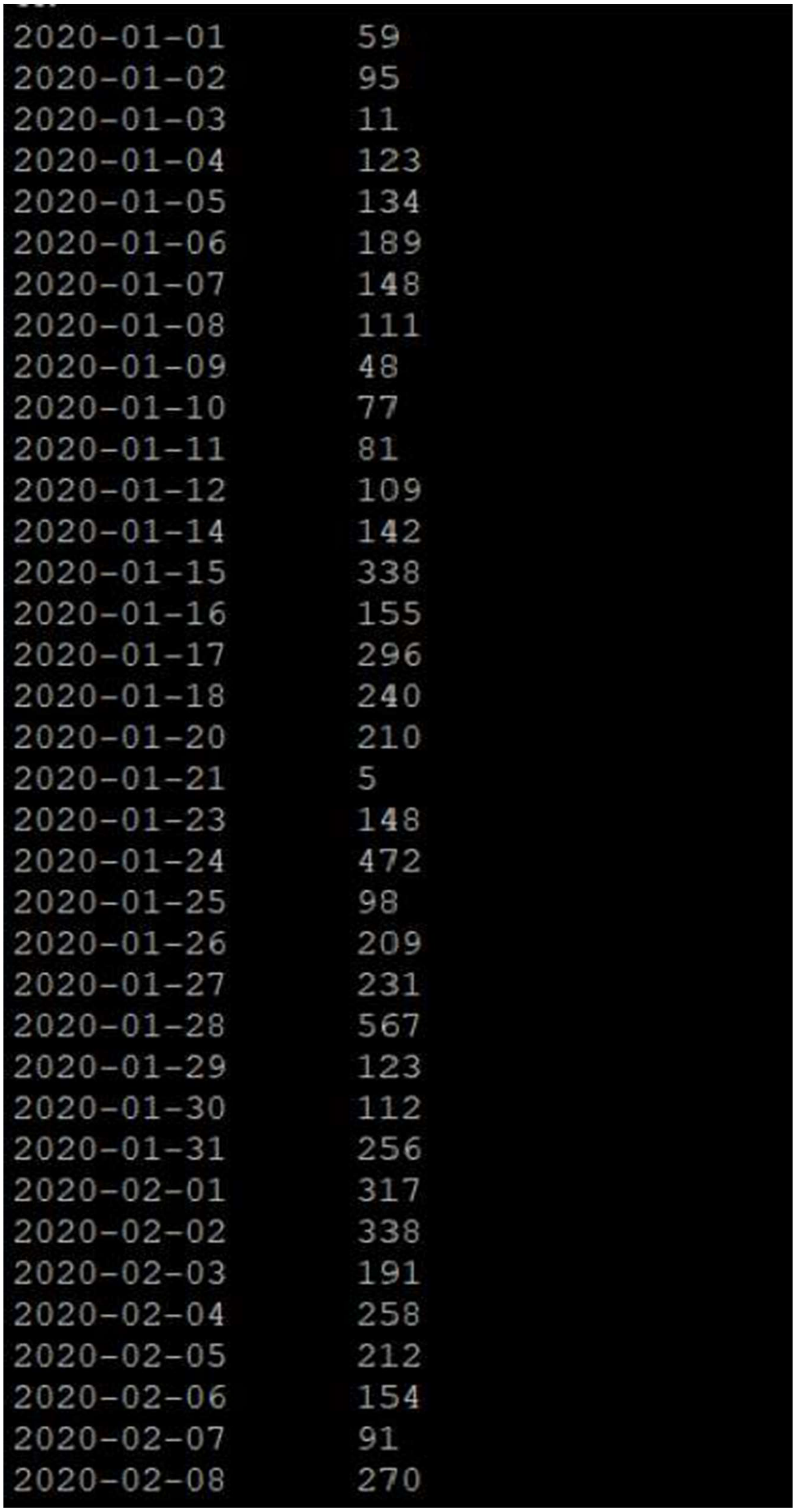


```sql
--Task 9: Calculate the total amount of tips given date wise to all drivers by customers.
SELECT
    DATE(PICKUP_TIMESTAMP) TRIP_DATE
    , ROUND(SUM(TIP_AMOUNT),0) AS TOTAL_TIP_AMOUNT
FROM
    BOOKINGS_DETAIL
GROUP BY
    DATE(PICKUP_TIMESTAMP)
ORDER BY
    TRIP_DATE;
```

```
INFO  : Map 1: 1/1      Reducer 2: 2/2  Reducer 3: 1/1
INFO  : Completed executing command(queryId=hive_20230604175432_a2240e14-5494-48d1-ad8d-2bb17209c5b0); Time taken: 6.591 seconds
INFO  : OK
```

	trip_date	total_tip_amount
1	2020-01-01	59
2	2020-01-02	95
3	2020-01-03	11
4	2020-01-04	123
5	2020-01-05	134
6	2020-01-06	189
7	2020-01-07	148
8	2020-01-08	111
9	2020-01-09	48
10	2020-01-10	77
11	2020-01-11	81
12	2020-01-12	109
13	2020-01-14	142
14	2020-01-15	338
15	2020-01-16	155

Validation:



```
2020-01-01        59
2020-01-02        95
2020-01-03        11
2020-01-04        123
2020-01-05        134
2020-01-06        189
2020-01-07        148
2020-01-08        111
2020-01-09        48
2020-01-10        77
2020-01-11        81
2020-01-12        109
2020-01-14        142
2020-01-15        338
2020-01-16        155
2020-01-17        296
2020-01-18        240
2020-01-20        210
2020-01-21        5
2020-01-23        148
2020-01-24        472
2020-01-25        98
2020-01-26        209
2020-01-27        231
2020-01-28        567
2020-01-29        123
2020-01-30        112
2020-01-31        256
2020-02-01        317
2020-02-02        338
2020-02-03        191
2020-02-04        258
2020-02-05        212
2020-02-06        154
2020-02-07        91
2020-02-08        270
```

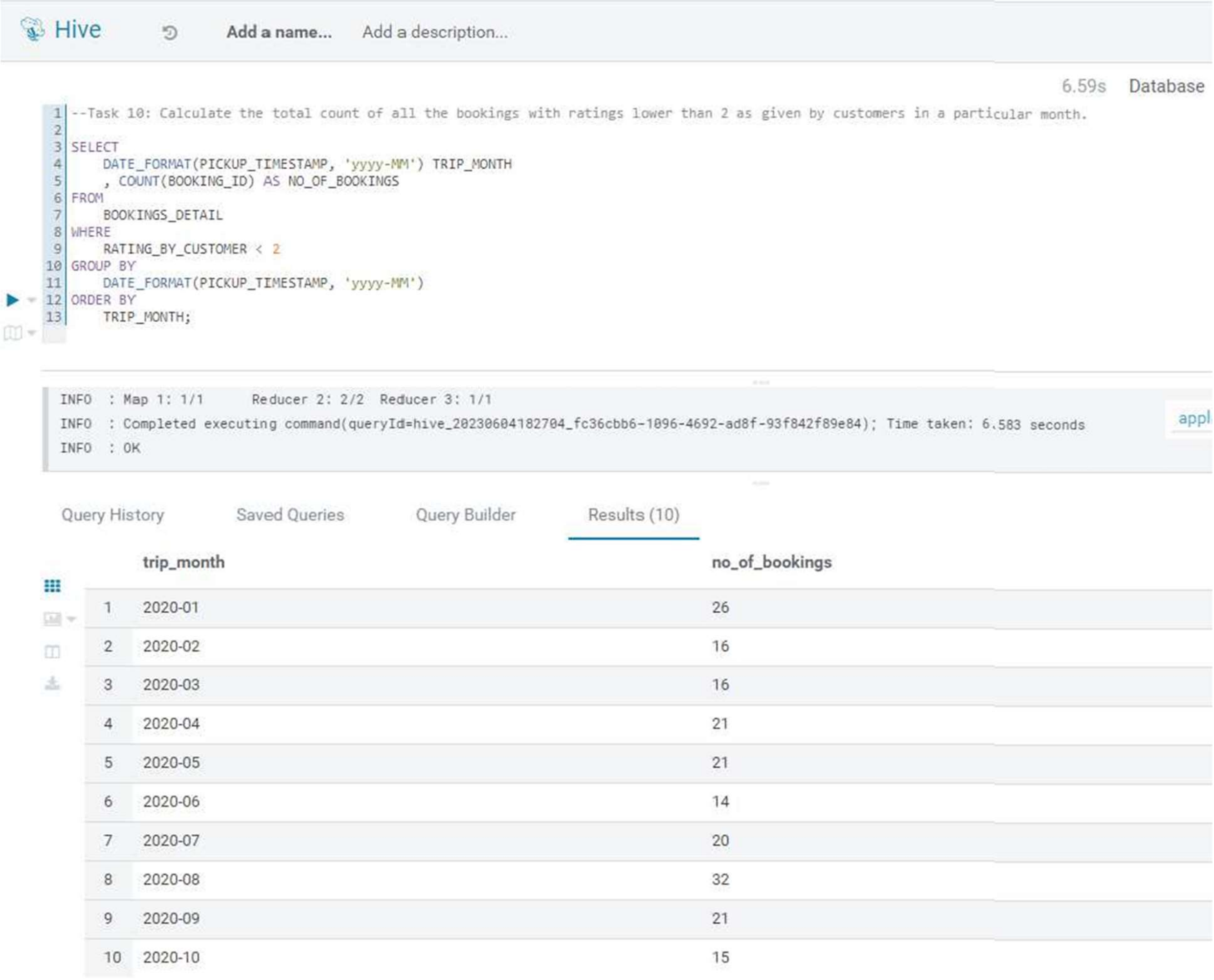
Note: Total amount of tips is exactly matching with validation document.

Task 10: Calculate the total count of all the bookings with ratings lower than 2 as given by customers in a particular month.

Query:-

```
SELECT
DATE_FORMAT(PICKUP_TIMESTAMP,
'yyyy-MM’) TRIP_MONTH,
COUNT(BOOKING_ID) AS
NO_OF_BOOKINGS
FROM
BOOKINGS_DETAIL
WHERE RATING_BY_CUSTOMER < 2
GROUP BY
DATE_FORMAT(PICKUP_TIMESTAMP,
'yyyy-MM’)
ORDER BY
TRIP_MONTH;
```

Output:

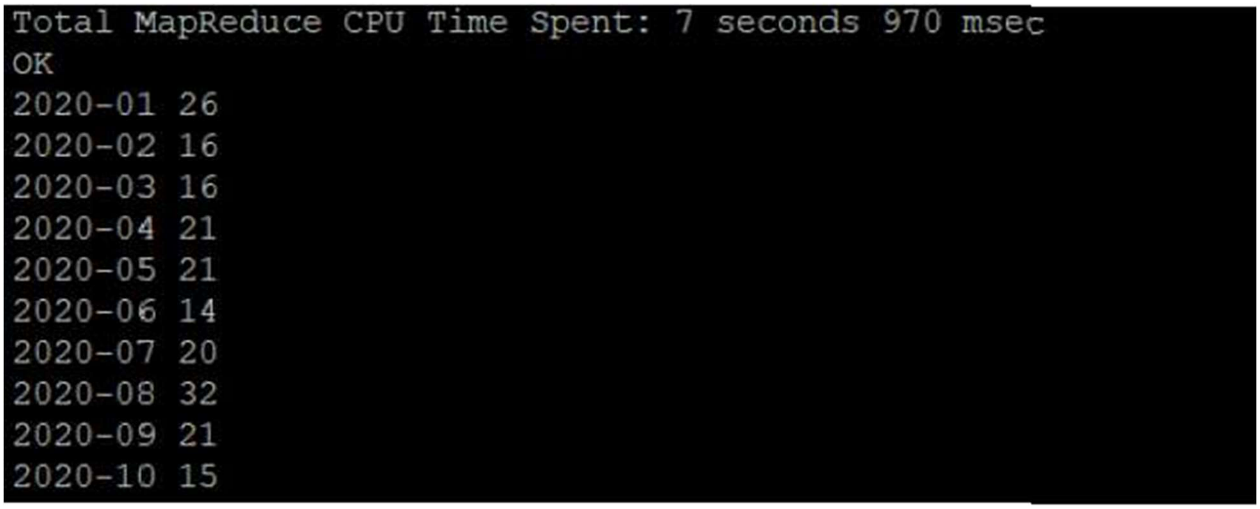


```
--Task 10: Calculate the total count of all the bookings with ratings lower than 2 as given by customers in a particular month.

SELECT
    DATE_FORMAT(PICKUP_TIMESTAMP, 'yyyy-MM') TRIP_MONTH
    , COUNT(BOOKING_ID) AS NO_OF_BOOKINGS
FROM
    BOOKINGS_DETAIL
WHERE
    RATING_BY_CUSTOMER < 2
GROUP BY
    DATE_FORMAT(PICKUP_TIMESTAMP, 'yyyy-MM')
ORDER BY
    TRIP_MONTH;
```

```
INFO  : Map 1: 1/1      Reducer 2: 2/2  Reducer 3: 1/1
INFO  : Completed executing command(queryId=hive_20230604182704_fc36cbb6-1096-4692-ad8f-93f842f89e84); Time taken: 6.583 seconds
INFO  : OK
```

	trip_month	no_of_bookings
1	2020-01	26
2	2020-02	16
3	2020-03	16
4	2020-04	21
5	2020-05	21
6	2020-06	14
7	2020-07	20
8	2020-08	32
9	2020-09	21
10	2020-10	15

Validation:



```
Total MapReduce CPU Time Spent: 7 seconds 970 msec
OK
2020-01 26
2020-02 16
2020-03 16
2020-04 21
2020-05 21
2020-06 14
2020-07 20
2020-08 32
2020-09 21
2020-10 15
```

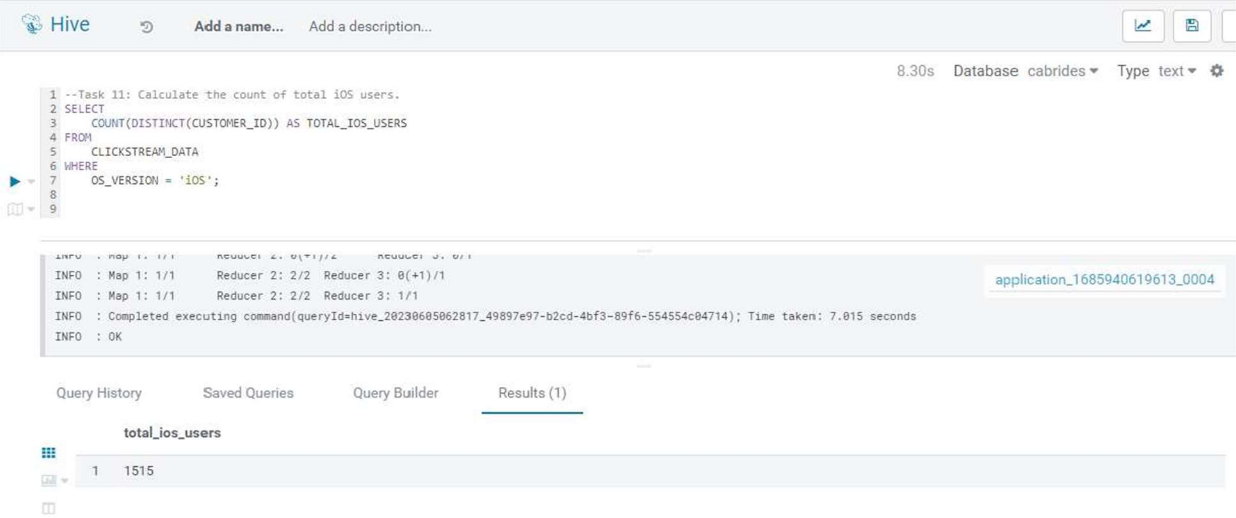
Note: Count of bookings by month is exactly matching with validation document.

Task 11: Calculate the count of total iOS users.

Query:-

```
SELECT
            COUNT(DISTINCT(CUSTOMER
            _ ID) AS TOTAL_IOS_USERS

FROM
            CLICKSTREAM_DATA
WHERE
            OS_VERSION = ‘iOS’;
```

Output:-

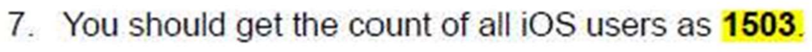


```
--Task 11: Calculate the count of total iOS users.
SELECT
    COUNT(DISTINCT(CUSTOMER_ID)) AS TOTAL_IOS_USERS
FROM
    CLICKSTREAM_DATA
WHERE
    OS_VERSION = 'iOS';
```

```
INFO  : Map 1: 1/1      Reducer 2: 0(+1)/2      Reducer 3: 0/1
INFO  : Map 1: 1/1      Reducer 2: 2/2  Reducer 3: 0(+1)/1
INFO  : Map 1: 1/1      Reducer 2: 2/2  Reducer 3: 1/1
INFO  : Completed executing command(queryId=hive_20230605062817_49897e97-b2cd-4bf3-89f6-554554c04714); Time taken: 7.015 seconds
INFO  : OK
```

	total_ios_users
1	1515

Validation:



7. You should get the count of all iOS users as **1503**.

Note: 3004 event were captured from kafka stream where in validation documents its 2984 hence iOS user are slightly more in our analysis.