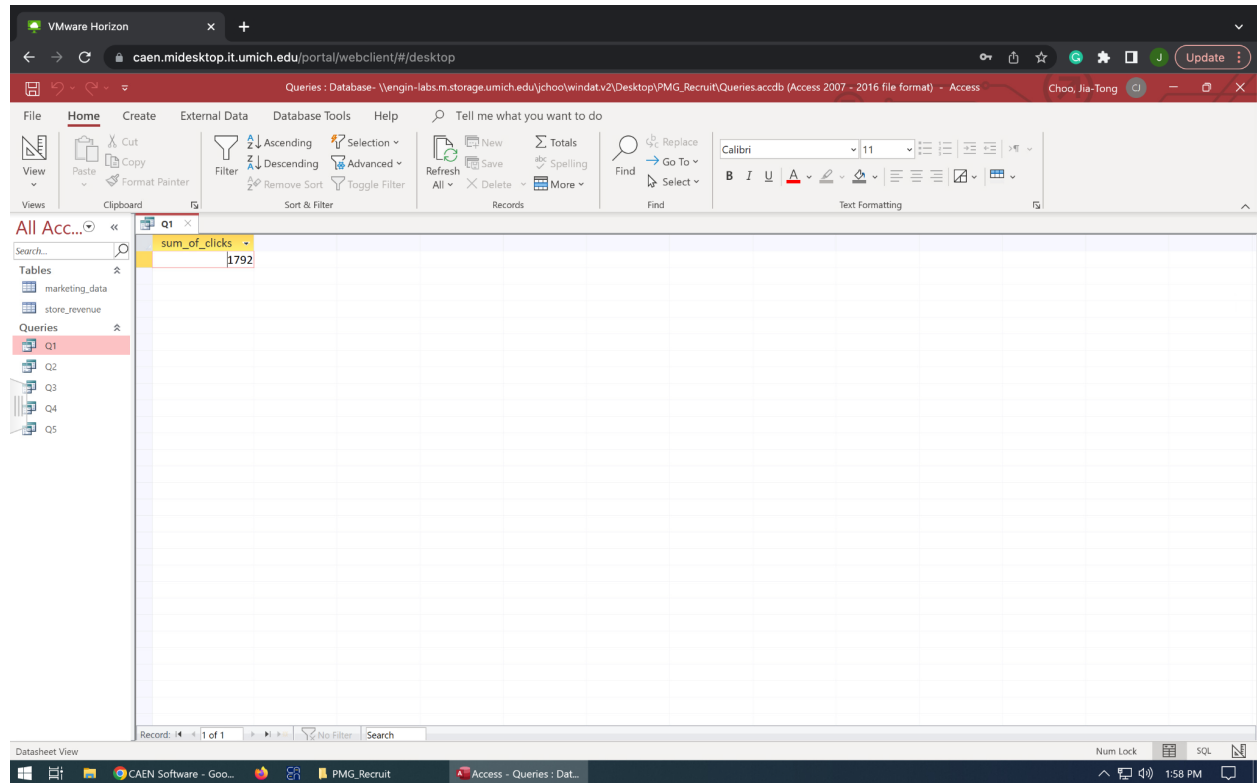


1. Generate a query to get the sum of the clicks of the marketing data

SQL query:

```
SELECT SUM(clicks) AS sum_of_clicks  
FROM marketing_data;
```

Output:



The screenshot shows the Microsoft Access interface. The 'Queries' pane on the left lists 'Q1' as the selected query. The main window displays a datasheet view for 'Q1' with a single row and column. The column header is 'sum\_of\_clicks' and the value in the row is 1792. The status bar at the bottom indicates 'Record: 1 of 1'.

sum_of_clicks
1792

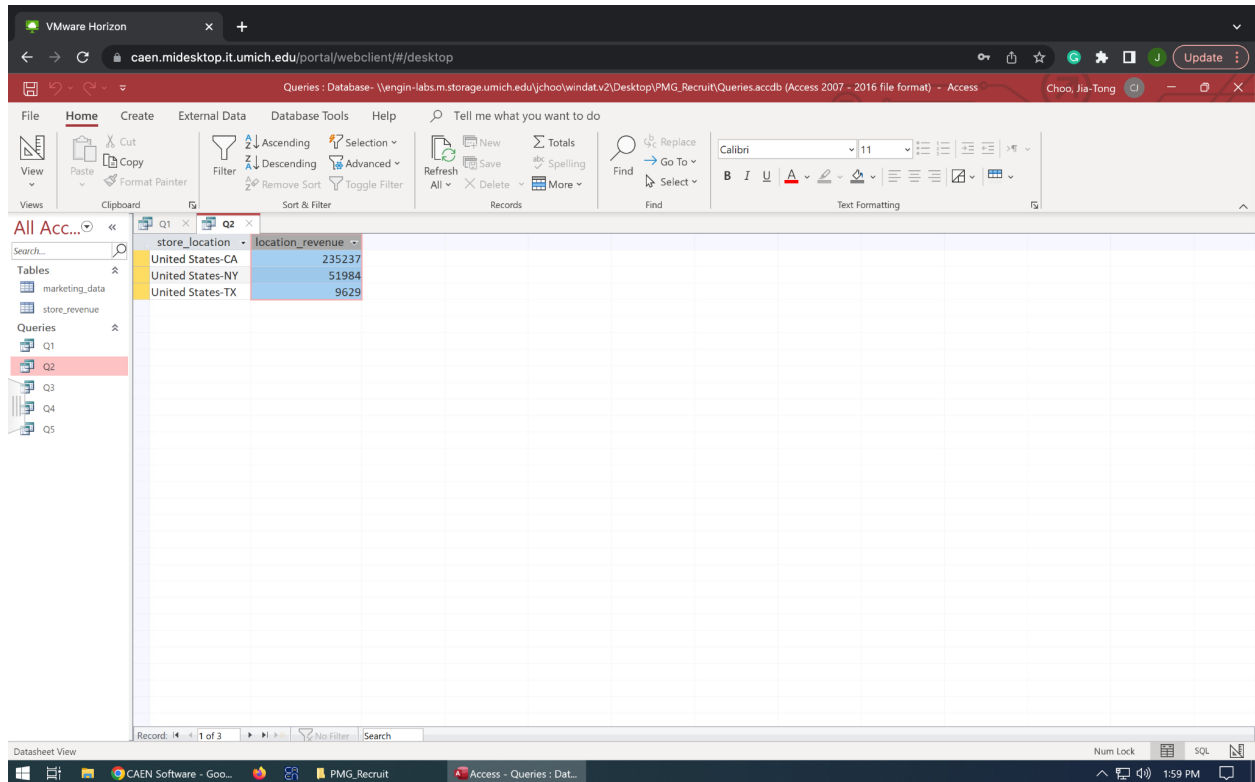
The sum of clicks of the marketing data is 1792, which means that there are 1792 clicks in total from all the documented locations.

2. Generate a query to gather the sum of revenue by store\_location from the store\_revenue table

SQL query:

```
SELECT store_location, SUM(revenue) AS location_revenue  
FROM store_revenue  
GROUP BY store_location;
```

Output:



store_location	location_revenue
United States-CA	235237
United States-NY	51984
United States-TX	9629

After grouping by the store location, we can see the sum of each location - CA with 125237, NY with 51984, and TX with 9629. By having this result, we are able to state that California has the most revenue, which can be caused by multiple factors including population, average income, etc.

VMware Horizon

caen.midesktop.it.umich.edu/portal/webclient/it/desktop

Queries - Database - \engin-labs.m.storage.umich.edu\jchoo\windatv2\Desktop\PMG\_Recruit\Queries.accd (Access 2007 - 2016 file format) - Access

Choo, Jia-Tong

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Tell me what you want to do

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Records

Find

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B I U A

Text Formatting

All Access

Search...

Tables

marketing\_data

store\_revenue

Queries

Q1

Q2

Q3

Q4

Q5

date	geo	impressions	clicks	store_location	revenue
1/1/2016 TX		2532	45	United States-TX	420
1/1/2016 TX		2532	45	United States-TX	234
1/1/2016 CA		3425	63	United States-CA	234
1/1/2016 CA		3425	63	United States-CA	100
1/1/2016 NY		3532	25	United States-NY	142
1/1/2016 NY		3532	25	United States-NY	142
1/2/2016 TX		3643	23	United States-TX	3423
1/2/2016 TX		3643	23	United States-TX	2342
1/2/2016 CA		1354	53	United States-CA	231
1/2/2016 CA		1354	53	United States-CA	234
1/2/2016 NY		4643	85	United States-NY	2342
1/2/2016 NY		4643	85	United States-NY	232
1/3/2016 TX		2353	57	United States-TX	3
1/3/2016 TX		2353	57	United States-TX	420
1/3/2016 CA		5258	36	United States-CA	234234
1/3/2016 CA		5258	36	United States-CA	100
1/3/2016 NY		4735	63	United States-NY	3245
1/3/2016 NY		4735	63	United States-NY	234
1/4/2016 TX		5783	47	United States-TX	3
1/4/2016 TX		5783	47	United States-TX	2354
1/4/2016 CA		7854	85	United States-CA	2
1/4/2016 CA		7854	85	United States-CA	34
1/4/2016 NY		4754	36	United States-NY	45235
1/4/2016 NY		4754	36	United States-NY	54
1/5/2016 TX		2535	63	United States-TX	4
1/5/2016 TX		2535	63	United States-TX	423
1/5/2016 CA		4678	73	United States-CA	23
1/5/2016 CA		4678	73	United States-CA	45
1/5/2016 NY		2364	33	United States-NY	234

Record: 1 of 30

No Filter

Search

Datasheet View

CAEN Software - Goo...

PMG\_Recruit

Access - Queries: Dat...

Num Lock

SQL

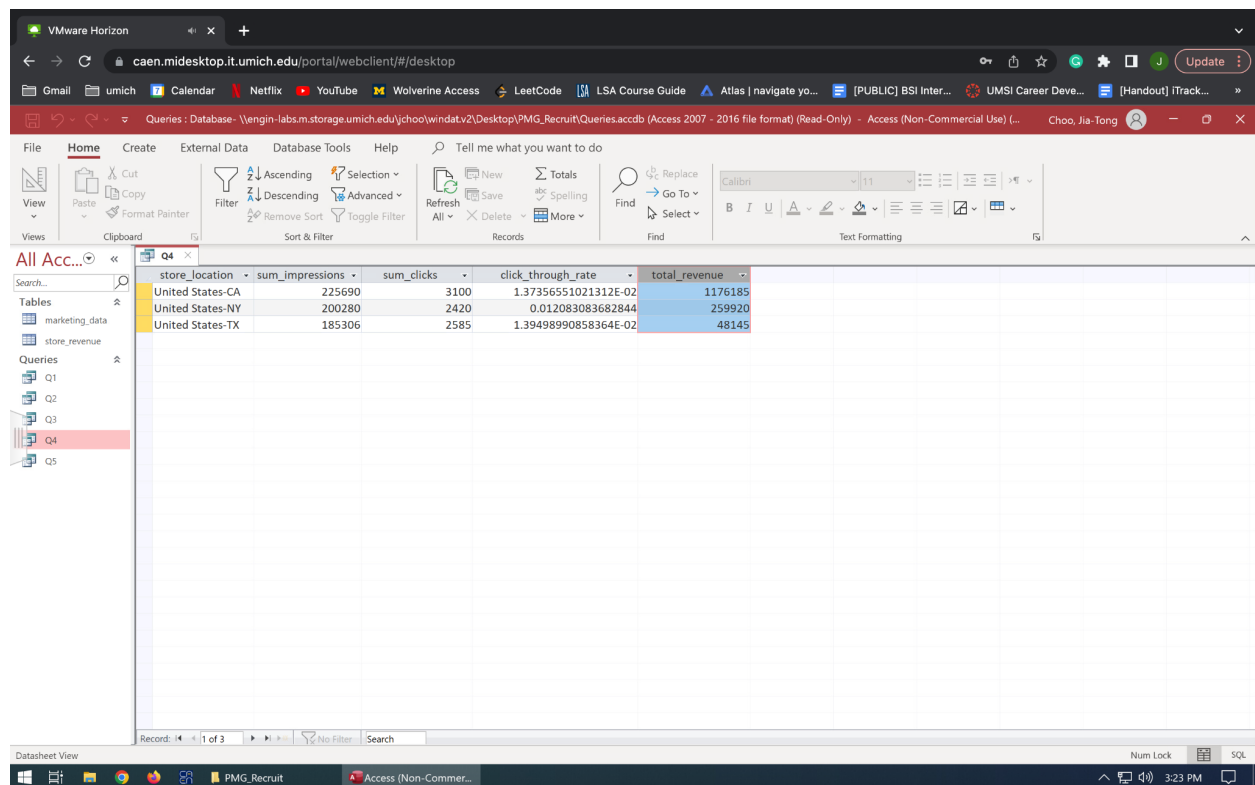
1:59 PM

#### 4. In your opinion, what is the most efficient store and why?

SQL query:

```
SELECT store_revenue.store_location, SUM(marketing_data.impressions) AS  
sum_impressions, SUM(marketing_data.clicks) AS sum_clicks,  
(sum_clicks/sum_impressions) AS click_through_rate, SUM(store_revenue.revenue) AS  
total_revenue  
FROM marketing_data INNER JOIN store_revenue ON marketing_data.geo =  
RIGHT(store_revenue.store_location,2)  
GROUP BY store_revenue.store_location;
```

Output:



store_location	sum_impressions	sum_clicks	click_through_rate	total_revenue
United States-CA	225690	3100	1.37356551021312E-02	1176185
United States-NY	200280	2420	0.012083083682844	259920
United States-TX	185306	2585	1.39498990858364E-02	48145

I calculated the clickthrough rate (CTR) for each store location with  $CTR = \text{sum of clicks} / \text{sum of impressions}$ . Clickthrough rates tells us how well the ads or the marketing plan are performing, which can also means the marketing efficiency of the store. As we can see, TX has the highest clickthrough rate (1.39) compared to the other two sites with CA having just a slightly lower rate (1.37). Therefore, we can have a conclusion that TX is the most efficient store. The total revenue of each store is also shown above in addition to the CTR to show that not the store that has the highest revenue is the most efficient store.

5. (Challenge) Generate a query to rank in order the top 10 revenue producing states

SQL query:

```
SELECT RIGHT(store_location,2) AS location_state, SUM(revenue) AS total_revenue
FROM store_revenue
GROUP BY store_location
ORDER BY SUM(revenue) DESC;
```

Output:

location_state	total_revenue
CA	235237
NY	51984
TX	9629

From my output, CA has the highest revenue (235237) following by NY with a revenue of 51984. TX has the lowest revenue out of all the states.