Challenge 4 - Finance Analysis

INTRODUCTION

I am a Finance Analyst working for 'The Big Bank'

I have been tasked with finding out about our customers and their banking behavior. To examine the accounts, they hold and the type of transactions they make to develop greater insight into our customers.

Tables

Here are the tables I will be using.

Customers

CustomerID	FirstName	LastName	City	State
1	John	Doe	New York	NY
2	Jane	Doe	New York	NY
3	Bob	Smith	San Francisco	CA
4	Alice	Johnson	San Francisco	CA
5	Michael	Lee	Los Angeles	CA
6	Jennifer	Wang	Los Angeles	CA

Accounts

AccountID	CustomerID	BranchID	AccountType	Balance
1	1	5	Checking	1000
2	1	5	Savings	5000
3	2	1	Checking	2500
4	2	1	Savings	####
5	3	2	Checking	7500
6	3	2	Savings	####
7	4	8	Checking	5000
8	4	8	Savings	####
9	5	14	Checking	####
10	5	14	Savings	####
11	6	2	Checking	5000
12	6	2	Savings	####
13	1	5	Credit Card	-500
14	2	1	Credit Card	-1000
15	3	2	Credit Card	-2000

Transactions

TransactionID	AccoutID	TransactionDate	Amount
1	1	2022-01-01	-500
2	1	2022-01-02	-250
3	2	2022-01-03	1000
4	3	2022-01-04	-1000
5	3	2022-01-05	500
6	4	2022-01-06	1000
7	4	2022-01-07	-500
8	5	2022-01-08	-2500
9	6	2022-01-09	500
10	6	2022-01-10	-1000
11	7	2022-01-11	-500
12	7	2022-01-12	-250
13	8	2022-01-13	1000
14	8	2022-01-14	-1000
15	9	2022-01-15	500

Branches

BranchID	BranchName	City	State
1	Main	New York	NY
2	Downtown	San Francisco	CA
3	West LA	Los Angeles	CA
4	East LA	Los Angeles	CA
5	Uptown	New York	NY
6	Financial District	San Francisco	CA
7	Midtown	New York	NY
8	South Bay	San Francisco	CA
9	Downtown	Los Angeles	CA
10	Chinatown	New York	NY
11	Marina	San Francisco	CA
12	Beverly Hills	Los Angeles	CA
13	Brooklyn	New York	NY
14	North Beach	San Francisco	CA
15	Pasadena	Los Angeles	CA

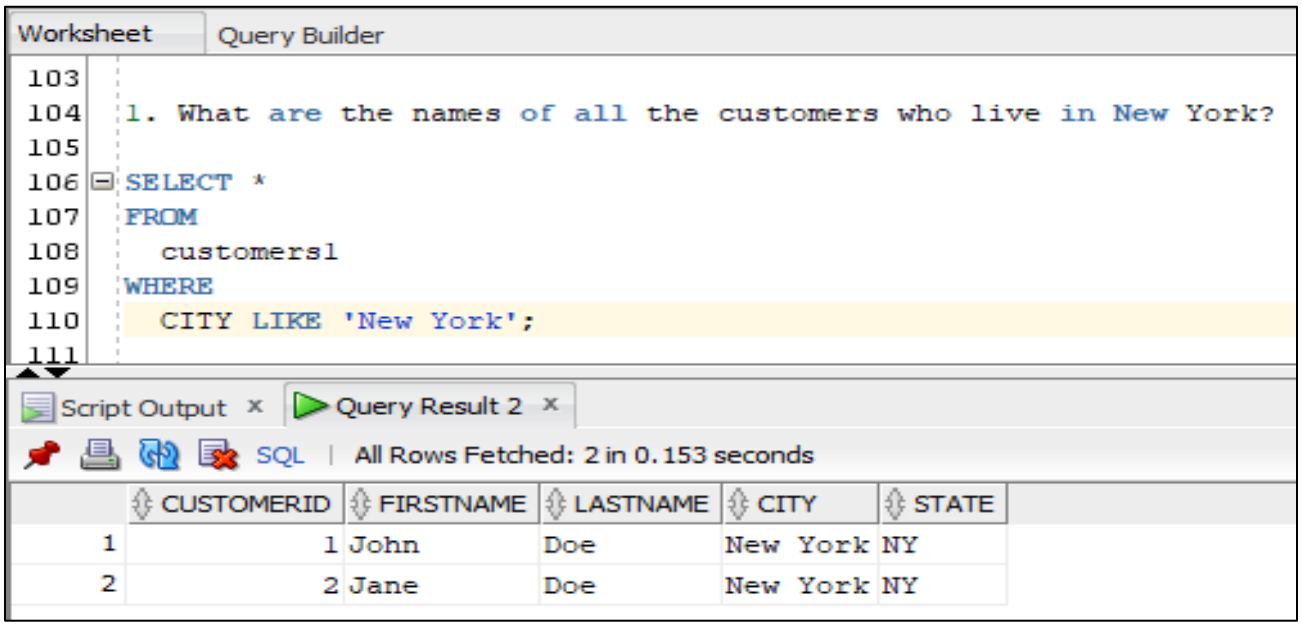
Following are the outcomes of customers and their banking behavior.

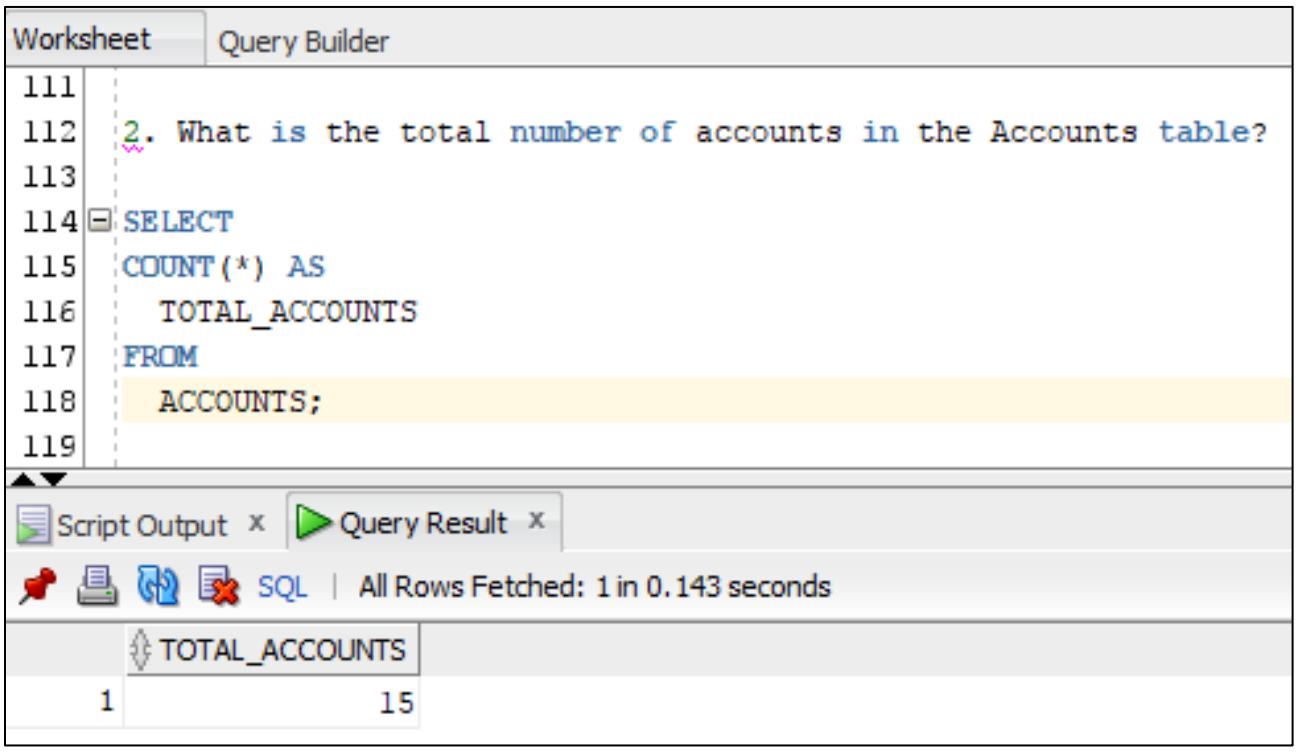
SELECT * FROM CUSTOMERS1;

SELECT * FROM BRANCHES;

SELECT * FROM ACCOUNTS;

SELECT * FROM TRANSACTIONS;





Worksheet | Query Builder

```
120  3. What is the total balance of all checking accounts?
121
122  SELECT*
123  FROM (
124  SELECT
125    ACCOUNTTYPE,
126    SUM(BALANCE) AS TOTAL_BAL
127  FROM
128    ACCOUNTS
129  GROUP BY
130    ACCOUNTTYPE
131  )
132  WHERE
133    ACCOUNTTYPE='Checking';
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.021 seconds

	ACCOUNTTYPE	TOTAL_BAL
1	Checking	31000

Worksheet | Query Builder

```
134
135  4. What is the total balance of all accounts associated
136     with customers who live in Los Angeles?
137
138  SELECT
139    SUM(A.BALANCE)AS TOTAL_BAL,
140    C.CITY
141  FROM
142    ACCOUNTS A
143  JOIN
144    CUSTOMERS1 C ON A.CUSTOMERID=C.CUSTOMERID
145  WHERE
146    CITY='Los Angeles'
147  GROUP BY
148    CITY
149  ORDER BY
150    CITY;
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.003 seconds

	CITY	TOTAL_BAL
1	Los Angeles	75000

Worksheet | Query Builder

```
151
152  5. Which branch has the highest average account balance?
153
154  SELECT*
155  FROM
156  (
157  SELECT AVG
158     (A.BALANCE) AS AVG_BAL,
159      B.BRANCHNAME
160  FROM
161     ACCOUNTS A
162  JOIN
163     BRANCHES B ON A.BRANCHID=B.BRANCHID
164  GROUP BY
165     B.BRANCHNAME
166  ORDER BY
167     AVG_BAL DESC
168  )
169  WHERE ROWNUM = 1;
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 1 in 0.154 seconds

	BRANCHNAME	AVG_BAL
1	North Beach	30000

Worksheet | Query Builder

```
170
171  6. Which customer has the highest current balance in their accounts?
172
173  SELECT*
174  FROM (
175  SELECT MAX(A.BALANCE) AS HIGHEST_BAL,
176     C.FIRSTNAME
177  FROM
178     ACCOUNTS A
179  JOIN
180     CUSTOMERS1 C ON A.CUSTOMERID=C.CUSTOMERID
181  GROUP BY
182     C.FIRSTNAME
183  ORDER BY
184     C.FIRSTNAME
185  )
186  WHERE ROWNUM=1;
187
```

Script Output × | Query Result ×

SQL | All Rows Fetched: 1 in 0.019 seconds

	FIRSTNAME	HIGHEST_BAL
1	Alice	20000

Worksheet | Query Builder

```
189  7. Which customer has made the most transactions in the Transactions table?
190
191  SELECT*
192  from (
193  select
194    c.CustomerID,
195    c.FirstName,
196    c.LastName,
197    COUNT(t.TransactionID) AS TransactionCount
198  FROM
199    Customers1 c
200  JOIN
201    Accounts a ON c.CustomerID = a.CustomerID
202  JOIN
203    Transactions t ON a.AccountID = t.AccountID
204  GROUP BY
205    c.CustomerID, c.FirstName, c.LastName
206  ORDER BY
207    TransactionCount DESC
208  )
209  where rownum=1;
210
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.02 seconds

	CUSTOMERID	FIRSTNAME	LASTNAME	TRANSACTIONCOUNT
1	2	Jane	Doe	4

Worksheet | Query Builder

```
211  8.Which branch has the highest total balance across all of its accounts?
212
213  SELECT *
214  FROM
215  (
216  SELECT
217    B.BRANCHID,
218    B.BRANCHNAME,
219    SUM(A.BALANCE) AS HIGHEST_BAL
220  FROM
221    BRANCHES B
222  JOIN
223    ACCOUNTS A ON B.BRANCHID=A.BRANCHID
224  GROUP BY
225    B.BRANCHID, B.BRANCHNAME
226  ORDER BY
227    HIGHEST_BAL DESC
228  )
229  WHERE ROWNUM =1;
230
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.022 seconds

	BRANCHID	BRANCHNAME	HIGHEST_BAL
1	14	North Beach	60000

Worksheet | Query Builder

```
230
231  Q9. Which customer has the highest total balance across all of
232      their accounts, including savings and checking accounts?
233
234  SELECT *
235  from (
236  select
237    C.CustomerID,
238    C.FirstName,
239    C.LastName,
240    A.AccountType,
241    SUM(A.Balance) OVER (PARTITION BY C.CustomerID) AS TotalBalance
242  FROM
243    Customersl C
244  JOIN
245    Accounts A ON C.CustomerID = A.CustomerID
246  WHERE
247    A.AccountType IN ('Checking', 'Savings')
248  ORDER BY
249    TotalBalance desc
250  )
251  where rownum<=2;
```

Script Output | Query Result

SQL | All Rows Fetched: 2 in 0.018 seconds

	CUSTOMERID	FIRSTNAME	LASTNAME	ACCOUNTTYPE	TOTALBALANCE
1	5	Michael	Lee	Checking	60000
2	5	Michael	Lee	Savings	60000

Worksheet | Query Builder

```
253
254  Q10. Which branch has the highest number of transactions in the Transactions table?
255
256  SELECT
257    B.BRANCHNAME,
258  COUNT
259    (T.TRANSACTIONID) AS HIGHEST_BRN_TRANSACTION,
260    A.ACCOUNTID,
261    B.BRANCHID
262  FROM
263    BRANCHES B
264  JOIN
265    ACCOUNTS A ON B.BRANCHID=A.BRANCHID
266  JOIN
267    TRANSACTIONS T ON T.ACCOUNTID=A.ACCOUNTID
268  GROUP BY
269    B.BRANCHNAME, B.BRANCHID, A.ACCOUNTID
270  ORDER BY
271    HIGHEST_BRN_TRANSACTION DESC;
```

Script Output | Query Result

SQL | All Rows Fetched: 9 in 0.043 seconds

	ACCOUNTID	BRANCHID	BRANCHNAME	HIGHEST_BR...
1	3	1	Main	2
2	1	5	Uptown	2