The following SQL queries relate to the two tables below:

TRANSACTIONS

Date	TransID	UserID	Amount	TransactionType
16/09/2020	1	3245435	100	Deposit
16/09/2020	2	4323465	20	Deposit
16/09/2020	3	3245435	50	Deposit
15/09/2020	4	6542133	30	Withdraw
15/09/2020	5	2178366	300	Withdraw
15/09/2020	6	4323465	10	Deposit
15/09/2020	7	8453156	80	Deposit
…				

USERS

UserID	RegistrationDate	City	Age	DateModified
3245435	27/06/2020	Berlin	23	27/06/2020
4323465	18/06/2020	London	54	18/06/2020
6542133	30/08/2020	Berlin	31	30/08/2020
2178366	27/02/2020	Munich	20	27/09/2020
4323465	18/06/2020	London	55	16/09/2020
8453156	18/06/2020	London	33	01/08/2020
3245435	27/06/2020	Munich	23	01/08/2020
2178366	27/02/2020	Munich	22	27/02/2020
…				

1. Query the users who made a deposit in the last 30 days from the current date.

MS SQL

```
SELECT DISTINCT UserID FROM Transactions
WHERE DATEDIFF(day, CONVERT(date, Date, 103), GETDATE()) <= 30 AND TransactionType='Deposit';
```

2. Query transaction sums by date and user; one column for deposits sums, and one for withdrawals sums as a negative value.

MS SQL

```
SELECT Date, UserID,
CASE WHEN TransactionType='Deposit' THEN SUM(Amount) END AS Deposits_SUM,
CASE WHEN TransactionType='Withdraw' THEN -SUM(Amount) END AS Withdrawals_SUM
FROM Transactions
GROUP BY Date, UserID, TransactionType
ORDER BY Date DESC;
```

3. Query the sums and counts deposits per user city

MS SQL

```
SELECT City, SUM(Amount) AS Deposits_SUM, COUNT(Amount) AS Deposits_COUNT
  FROM (SELECT TransID, City, Amount, diff, MIN(diff) OVER (PARTITION BY TransID) AS min_diff
        FROM (SELECT Transactions.*, City,
              DATEDIFF(day, CONVERT(date, DateModified, 103),CONVERT(date, Date, 103)) AS diff
              FROM Transactions
              LEFT JOIN Users ON Transactions.UserID = Users.UserID) AS T1
        WHERE diff>=0 AND TransactionType='Deposit') AS T2
WHERE diff=min_diff
GROUP BY City;
```

*per user city at time of deposit

MS SQL

```
SELECT City, SUM(Amount) AS Deposits_SUM, COUNT(Amount) AS Deposits_COUNT
FROM (SELECT RANK() OVER (PARTITION BY UserID ORDER BY DateModified DESC) AS rank, * FROM Users)
Users
RIGHT JOIN Transactions ON Users.UserID = Transactions.UserID
WHERE rank=1 AND TransactionType='Deposit'
GROUP BY Users.City;
```

*per latest user city at time of query

4. Query all the users and their latest information.

MS SQL

```
SELECT UserID, City, Age, RegistrationDate, DateModified
FROM (SELECT RANK() OVER (PARTITION BY UserID ORDER BY DateModified DESC) AS rank, * FROM Users)
Users
WHERE rank=1;
```