

SQL Query Explanation

SQL Query:

```
SELECT 'u' || SUBSTR('0000' || t_user.pk_user, -4) AS id,  
  
       SUBSTR(t_user.email, 1, 3) || '*****' || SUBSTR(t_user.email, INSTR(t_user.email, '@')) AS email,  
  
       STRFTIME('%Y', '2023-11-13') - SUBSTR(t_user.birthdate, -4) AS age,  
  
       COUNT(t_login.pk_login) AS cntlogins,  
  
       CASE  
  
           WHEN MAX(t_login.timestamp) IS NOT NULL THEN STRFTIME('%d.%m.%Y %H:%M', MAX(t_login.timestamp),  
  
'unixepoch')  
  
           ELSE NULL  
  
       END AS lastlogin  
  
FROM t_user  
  
JOIN t_status ON t_user.fk_status = t_status.pk_status  
  
LEFT JOIN t_login ON t_user.pk_user = t_login.fk_user  
  
WHERE t_status.status = 'active'  
  
GROUP BY t_user.pk_user  
  
ORDER BY id ASC;
```

Explanation of Each Clause

This section explains each part of the query in detail.

1. SELECT Clause

The SELECT clause formats and retrieves data:

- ID (id):

'u' || SUBSTR('0000' || t_user.pk_user, -4) formats the primary key with leading zeros and a 'u'. Example: 123 -> u0123.

- Email (email):

The email is masked to hide details: SUBSTR(email, 1, 3) || '*****' || SUBSTR(email, INSTR(email, '@')). Example:

foo.bar@abc.com -> foo*****@abc.com.

- Age (age):

Age is calculated from the user's birth year using `STRFTIME('%Y', '2023-11-13') - SUBSTR(birthdate, -4)`. Example:

`birthdate = 31.12.2000 -> age = 23.`

- Count of Logins (cntlogins):

`COUNT(pk_login)` counts the number of logins per user.

- Last Login (lastlogin):

The most recent login timestamp is formatted using `CASE` and `STRFTIME('%d.%m.%Y %H:%M', MAX(timestamp), 'unixepoch')`.

2. FROM and JOIN Clauses

The `FROM` clause retrieves data from `t_user`. `JOIN` ensures only active users are selected, and `LEFT JOIN` includes login data.

3. WHERE Clause

`WHERE t_status.status = 'active'` filters active users.

4. GROUP BY Clause

`GROUP BY t_user.pk_user` groups users for aggregation.

5. ORDER BY Clause

Results are ordered by user ID in ascending order.

Result

The SQLite software executed the query and exported the CSV file with the anonymized data for active users. The columns include `id`, `email`, `age`, `cntlogins`, and `lastlogin`.