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Course: Relational Database Design-SD-310-F24P

Assignment: Instagram Database and Application

Query 1:

```sql
SELECT
    u.userId,
    u.username,
    u.firstName,
    u.lastName,
    u.email
FROM Follower f
JOIN [User] u ON f.followerId = u.userId
WHERE f.userId = (
    SELECT userId FROM [User] WHERE username = 'cristiano'
);
```

214 %

Results | Messages

| | userId | username | firstName | lastName | email |
|---|---|---|---|---|---|
| 1 | 2 | messi | Lionel | Messi | messi@example.com |
| 2 | 3 | serenawilliams | Serena | Williams | serena@example.com |

Query 2:

```sql
SELECT
    CASE WHEN p.isStory = 1 THEN 'Story' ELSE 'Post' END AS type,
    p.postId,
    p.caption,
    p.[timestamp],
    u.username AS creator_username
FROM Post p
JOIN [User] u ON p.userId = u.userId
WHERE p.userId IN (
    SELECT f.userId
    FROM Follower f
    JOIN [User] u2 ON f.followerid = u2.userId
    WHERE u2.username = 'messi'
)
AND p.[timestamp] >= DATEADD(DAY, -7, GETDATE())
ORDER BY p.[timestamp] DESC;
```

133 %

Results | Messages

| | type | postId | caption | timestamp | creator_username |
|---|------|--------|---------|-----------|------------------|
| 1 | Post | post7 | Party post | 2025-02-18 12:00:00.000 | lifeoftheparty |
| 2 | Story | story1 | My first story | 2025-02-17 12:00:00.000 | cristiano |
| 3 | Post | post5 | Plant post | 2025-02-17 12:00:00.000 | aplasticplant |
| 4 | Post | post6 | Movie quotes post | 2025-02-16 12:00:00.000 | movie_quotes |
| 5 | Post | post3 | Serena post | 2025-02-16 12:00:00.000 | serenawilliams |
| 6 | Post | post4 | Talkative post | 2025-02-15 12:00:00.000 | that_talkative_user |
| 7 | Post | 412EL5357109 | My first post | 2025-02-15 12:00:00.000 | cristiano |
| 8 | Story | story3 | Serena story | 2025-02-14 12:00:00.000 | serenawilliams |

Query 3:

```sql
SELECT DISTINCT
    CASE WHEN p.isStory = 1 THEN 'Story' ELSE 'Post' END AS type,
    p.postId,
    p.caption,
    p.[timestamp],
    u.username
FROM Post p
JOIN [User] u ON p.userId = u.userId
WHERE p.postId IN (
    SELECT l.postId
    FROM [Like] l
    WHERE l.userId = (
        SELECT userId
        FROM [User]
        WHERE username = 'serenawilliams'
    )
)
OR p.postId IN (
    SELECT c.postId
    FROM Comment c
    WHERE c.userId = (
        SELECT userId
        FROM [User]
        WHERE username = 'serenawilliams'
    )
)
ORDER BY p.[timestamp] DESC;
```

83 %

▦ Results | 📄 Messages

| | type | postId | caption | timestamp | username |
|---|---|---|---|---|---|
| 1 | Post | post3 | Serena post | 2025-02-16 12:00:00.000 | serenawilliams |
| 2 | Post | post4 | Talkative post | 2025-02-15 12:00:00.000 | that_talkative_user |

Query4:

```sql
SELECT TOP 5
    u.userId,
    u.username,
    u.firstName,
    u.lastName,
    COUNT(f.followerId) AS followers
FROM [User] u
LEFT JOIN Follower f ON u.userId = f.userId
WHERE u.profileUrl IS NULL OR u.profileUrl = ''
GROUP BY u.userId, u.username, u.firstName, u.lastName
ORDER BY followers DESC;
```

195 %

Results | Messages

| | userId | username | firstName | lastName | followers |
|---|---|---|---|---|---|
| 1 | 10 | user3 | User | Three | 0 |

Query 5:

```sql
SELECT
    m.messageId,
    m.senderId,
    m.receiverId,
    u.username AS receiver,
    m.[message],
    m.[timestamp]
FROM [Message] m
JOIN [User] sender  ON m.senderId = sender.userId
JOIN [User] u ON m.receiverId = u.userId
WHERE sender.username = 'that_talkative_user'
    AND m.[timestamp] BETWEEN '2022-03-12 07:22:00' AND '2022-12-04 17:04:00'
    AND (
        (SELECT COUNT(*) FROM Follower f WHERE f.userId = m.receiverId) >= 10
        OR
        (SELECT COUNT(*) FROM Follower f WHERE f.followerId = m.receiverId) >= 10
    )
ORDER BY m.[timestamp] ASC;
```

121%

Results | Messages

| | messageId | senderId | receiverId | receiver | message | timestamp |
|---|---|---|---|---|---|---|
| 1 | 9 | 4 | 11 | latadeyek | Are you home! | 2022-03-12 07:38:00.000 |

Query 6:

```sql
SELECT TOP 5 U.username, COUNT(L.likeId) + COUNT(C.commentId) AS totalEngagement
FROM [User] U
LEFT JOIN [Like] L ON U.userId = L.userId
LEFT JOIN Comment C ON U.userId = C.userId
JOIN Post P ON (L.postId = P.postId OR C.postId = P.postId)
WHERE P.userId = (SELECT userId FROM [User] WHERE username = 'aplasticplant')
GROUP BY U.username
ORDER BY totalEngagement DESC;
```

| | username | totalEngagement |
|---|---|---|
| 1 | that_talkative_user | 2 |
| 2 | aplasticplant | 2 |

Query 7:

```sql
SELECT TOP 1 P.userId, U.username, COUNT(V.viewId) AS totalViews
FROM [View] V
JOIN Post P ON V.postId = P.postId
JOIN [User] U ON P.userId = U.userId
WHERE P.isStory = 1
GROUP BY P.userId, U.username
ORDER BY totalViews DESC;
```

100 %    ▼

⊞ Results  📧 Messages

| userId | username | totalViews |
|--------|----------|------------|

Query 8:

```sql
WITH StoryLikes AS (
    SELECT V.userId, COUNT(L.likeId) AS totalLikes
    FROM [View] V
    JOIN Post P ON V.postId = P.postId
    LEFT JOIN [Like] L ON V.userId = L.userId AND V.postId = L.postId
    WHERE P.userId = (SELECT userId FROM [User] WHERE username = 'movie_quotes')
        AND P.isStory = 1
    GROUP BY V.userId
),
MessageCount AS (
    SELECT M.senderId, COUNT(M.messageId) AS totalMessages
    FROM [Message] M
    WHERE M.senderId = (SELECT userId FROM [User] WHERE username = 'movie_quotes')
    GROUP BY M.senderId
)
SELECT TOP 1 S.userId, U.username
FROM StoryLikes S
JOIN [User] U ON S.userId = U.userId
LEFT JOIN MessageCount M ON M.senderId = S.userId
ORDER BY totalLikes DESC, totalMessages ASC
```

100 %

Results  Messages

| userId | username |
|--------|----------|

Query 9:

```sql
SELECT DISTINCT P.postId, P.caption, P.isStory, P.[timestamp]
FROM Post P
JOIN [Like] L ON P.postId = L.postId
JOIN Comment C ON P.postId = C.postId
WHERE C.userId IN (SELECT userId FROM Comment WHERE postId = '412EL5357109')
   AND P.isStory = 1;
```

100 %

Results   Messages

| postId | caption | isStory | timestamp |
|--------|---------|---------|-----------|

Query 10:

```sql
SELECT U.username
FROM [User] U
JOIN Follower F ON U.userId = F.userId
JOIN Post P ON U.userId = P.userId
WHERE F.followerId = (SELECT userId FROM [User] WHERE username = 'lifeoftheparty')
  AND P.[timestamp] > (
        SELECT MIN(M.[timestamp])
        FROM [Message] M
        WHERE M.senderId = (SELECT userId FROM [User] WHERE username = 'lifeoftheparty')
        AND M.receiverId = U.userId
    );
```

100 %  ▼

⊞ Results  📖 Messages

| username |
| --- |