**SQL Queries and Relational Algebra answering physical model**

1. What user posted this tweet?

**Query:** Select twitter\_handle, tweet\_text from tweets where tweet\_id=’1111’;

**Relational Notation:** Πtwitter\_handle, tweet\_text(σtweet\_id = ‘1111’ (tweets))

1. When did the user post this tweet?

**Query:** Select twitter\_handle, tweet\_text, created\_at from tweets where created\_at =’11-8-2022’;

**Relational Notation:** Πtwitter\_handle, tweet\_text, created\_at(σcreated\_at = ‘11-8-2022’ (tweets))

1. What tweets have this user posted in the past 24 hours?

**Query:** Select tweet\_id, tweet\_text from tweets where twitter\_handle=’@smith’ and (created\_at between (SYSDATE-1) and SYSDATE ());

**Relational Notation:** Πtwitter\_id, tweet\_text(σtwitter\_handle = ‘@smith’ ∩ created\_at between (SYSDATE-1) and SYSDATE ()) (Tweets)

1. How many tweets have this user posted in the past 24 hours?

**Query:** Select count(tweet\_id) as NoOfTweets from tweets where twitter\_handle=’@smith’ and (created\_at between (SYSDATE-1) and SYSDATE ());

**Relational Notation:** *ρ* NoOfTweets (∏ count(tweet\_id) (σ twitter\_handle=’@smith’ ∩ created\_at between (SYSDATE-1) and SYSDATE ()) (Tweets))

1. When did this user join twitter?

**Query:** Select u.twitter\_handle, u.join\_date from tweets t, user u where u.twitter\_handle=t.twitter\_handle and u.twitter\_handle=’@smith’;

**Relational Notation:** ∏ (u.twitter\_handle, u.join\_date)σ (u.twitter\_handle = “@smith”)(User⋈Tweetsu.twitter\_handle=t.twitter\_handle )

1. What keywords/hashtags are popular?

**Query:** Select hashtags from tweets group by hashtags having count(tweet\_id)>60;

**Relational Notation: Not possible as Group By function does not exist in relational algebra.**

1. What tweets are popular?

**Query:** Select tweet\_id from tweets where retweet>60;

**Relational Notation:** ∏ (tweet\_id)( σ retweet > 60) (tweets)