

This database structure is designed to store tweets from the CommBank Twitter account, including user replies, user quote retweets, and direct mentions, adhering to potential limitations of the newest X API for Business. Sentiment is assigned a basic category (positive, neutral, negative). More granular sentiment analysis might require additional tables or a separate database.

1. Tables:

a. Tweets Table:

- tweet_id (BIGINT): Unique identifier (primary key).
- created_at (DATETIME): Date and time posted.
- text (VARCHAR(255)): Abbreviated tweet text (limited characters).
- engagement (INT): Sum of retweets, quote retweets, and likes.
- lang (VARCHAR(5)): Language of the tweet.
- sentiment (VARCHAR(10)): Overall sentiment (positive, neutral, negative).

b. Replies Table:

- reply_id (BIGINT): Unique identifier (primary key).
- tweet_id (BIGINT): Foreign key referencing Tweets table.
- text (VARCHAR(255)): Abbreviated reply text (limited characters).
- sentiment (VARCHAR(10)): Reply sentiment (positive, neutral, negative).

c. QuoteRetweets Table:

- quote_retweet_id (BIGINT): Unique identifier (primary key).
- tweet_id (BIGINT): Foreign key referencing Tweets table.
- text (VARCHAR(255)): Abbreviated quote retweet text (limited characters).
- sentiment (VARCHAR(10)): Quote retweet sentiment (positive, negative, neutral).

d. Mentions Table:

- mentioned_user_id (BIGINT): Unique identifier (primary key).
- tweet_id (BIGINT): Foreign key referencing Tweets table.
- count (INT): Number of times the user is mentioned in the tweet

2. Entity-Relationship (ER) Model:

- **One Tweet to Many Tweets (Many-to-Many):** Achieved through foreign keys in Replies and QuoteRetweets tables (optional) referencing the Tweets table.
- **One Tweet to Many Replies/Quote Retweets (One-to-Many):** Tweets table (primary key) linked to Replies and QuoteRetweets tables (foreign key).

- **One Tweet to One Mention (One-to-Many):** Tweets table (primary key) linked to Mentions table (foreign key).