X(Twitter)

Product Dissection for X(Twitter)

Company Overview:

X, formerly but still commonly called **Twitter**,is an online social media and social networking service operated by the American company X Corp., the successor of Twitter, Inc. On X, registered users can post text, images and videos. Users can also like, repost, quote repost, comment on posts, direct message, video and audio call, bookmark, join lists and communities, and join public Spaces with other registered users. Users can vote on context added by approved users using the Community Notes feature. Posting information to the site is often referred to historically as tweeting, retweeting and quote tweeting/retweeting (depending on the country).

Twitter was created in March 2006 by Jack Dorsey, Noah Glass, Biz Stone and Evan Williams. It was launched in July of that year.In October 2022, billionaire Elon Musk acquired Twitter for US$44 billion, gaining control of the platform and becoming CEO. As of October 2023, X is the 5th most-visited website in the world with 23.6% of its traffic coming from the United States followed by Japan at 15.94% and the United Kingdom at 5.57% according to data provided by Similarweb.

Product dissection of Twitter:

Twitter is a free online news and social networking site where users "tweets" short messages.Tweets were originally restricted to 140 characters, but this limit was doubled to 280 in 2017 for all languages except Japanese,Korean and Chinese.

Twitter as a product is composed of several distinct parts:

Microblogging Platform:
- **Functionality**: Users can post short messages called tweets (limited to 280 characters).
- **Value**: Quick dissemination of information, thoughts, and updates.

Follow System:
- **Functionality:** Users can follow other accounts to see their tweets in their timeline.
- **Value**: Customized content delivery, allowing users to curate their feed ba--sed on Interests.

Hashtags and Trends:
- **Functionality**: Users can use hashtags to categorize content;trending topics highlight popular discussions.
- **Value**: Facilitates content discovery and participation in broader conversations.

Retweets and Likes:
- **Functionality**: Users can share(retweet) and express approval(like) for tweets.
- **Value:** Amplifies content reach,gauges popularity and encourages engagement.

Media Integration:
- **Functionality:** Supports images,videos and GIFs in tweets.
- **Value:** Enhanced expression,visual storytelling and multimedia sharing.

Direct Messaging(DM):
- **Functionality**: Private messaging between users.
- **Value:** Facilitates one-on-one communication, collaboration and information sharing.

Real world problems solved by Twitter:

Breaking news and information sharing:
- **Problem:**Rapid dissemination of news is crucial during emergencies.
- **Solution:**Twitter provides a real-time platform for news agencies, individuals and organizations to share updates ,helping disseminate critical information quickly.

Community Building and Activism:
- **Problem**:Mobilizing people for a cause requires efficient communication.
- **Solution**:Twitter enables the rapid spread of awareness,organization of events and collective activism through hashtag campaigns.

Customer Service and Support:
- **Problem**: Businesses need effective customer communication channels.
- **Solution:** Companies use Twitter for customer support,addressing queries, resolving issues and maintaining a public-facing channel for feedback.

Public Opinion and Feedback:
- **Problem:** Gauging public sentiment is challenging for businesses and government.
- **Solution**: Twitter serves as a platform for people to express opinions, providing a valuable resource for sentiment analysis and feedback.

Crisis Communication:
- **Problem:** During crises, communication channels need to be swift and widespread.
- **Solution**: Governments,organizations and individuals use Twitter to provide real-time updates, emergency information and coordinate responses during crises.

Global Networking and Collaboration:
- **Problem:** Connecting with people globally can be challenging.
- **Solution:** Twitter facilitates networking,collaboration and knowledge-sharing across geographical boundaries,fostering a global community.

Twitter through its features and real-world applications,plays a significant role in addressing various communication and information sharing challenges in the modern world.

Schema Description:

The schema description for Twitter involves multiple entities that represent different aspects of the platform.These entities include Users,Tweet, Hashtag, Follow, Media and Notifications.Each entity has specific attributes that describe its properties and relationships with other entities.

User Entity:
Users are the core of Twitter.The user entity contains information about each user:
- **UserID(Primary Key):** A unique identifier for each user.
- **Username:** The chosen username for the user's account.
- **Email**: The user's email address for account-related communication.
- **Bio:**A brief description that users can use to express themselves.
- **JoinDate**:The date when the user joined Twitter.

Tweet:
Tweet captures the content shared on the platform:
- **TweetID(Primary Key):** A unique identifier for each tweet.
- **UserID(Foreign Key):** The user who tweeted.
- **Content:** The content of the tweet.
- **Timestamp:** Time of the tweet.
- **RetweetCount:** How many times a tweet is retweeted by others.
- **LikeCount**: The number of likes on the tweet.

Hashtag:
Used to trend a particular topic on the platform:
- **HashtagID(Primary Key):** A unique identifier for each hashtag.
- **TagName:** Keyword or phrase following '#' symbol.

Follow:
Define relationships between users on the platform:
- **FollowerID(Foreign Key):** UserID of user who is following other.
- **FollowingId(Foreign Key):** UserID of user being followed.
- **FollowDate:** Timestamp of when the follow occurred.

Media:
It is used to associate multimedia content with tweets:
- **MediaID(Primary Key):** Uniquely identifies each media entry.
- **TweetID(Foreign Key):** Link the media to a specific tweet using
-                             TweetID.
- **MediaType:** Indicates the type of media(eg. image,video,GIF)
- **MediaURL:** Stores the URL or path to the actual media file.

Notification :

Capture information about notification that users receive on platform:

- **NotificationID(Primary Key):** Unique identifier for each notification.
- **UserID(Foreign Key):** Establish connection to "User" entity.
- **SenderID(Foreign Key):** "User" who triggered the notification.
- **TweetID(Foreign Key):** Tweet associated with notification.
- **Timestamp:** Records date and time when the notification was generated.

Relationships are:

User -Tweet Relationship:

- A user can post multiple tweets.
- One-to-Many relationship between User and Tweet.

User-Follow Relationship:

- A user can follow and be followed by multiple users.
- Many-to-many relationship between User and follow.

Tweet-Hashtag Relationship:

- A tweet can have multiple hashtags; a hashtag can be associated with multiple tweets.
- Many-to-Many relationship between Tweet and hashtag.

User-Media Relationship:

- A user can associate multiple media(images, videos) with a tweet.
- One-to-many relationship between User and Media.

Notification-User Relationship:

- A user can receive multiple notifications.
- One-to-many relationship between user and notification.

E R Diagram:

Let's construct an ER diagram that vividly portrays the relationships and attributes of the entities within the Twitter schema. This ER diagram will serve as a visual representation, shedding light on the pivotal components of Twitter's data model. By employing this diagram, we'll gain a clearer grasp of the intricate interactions and connections that define the platform's dynamics.
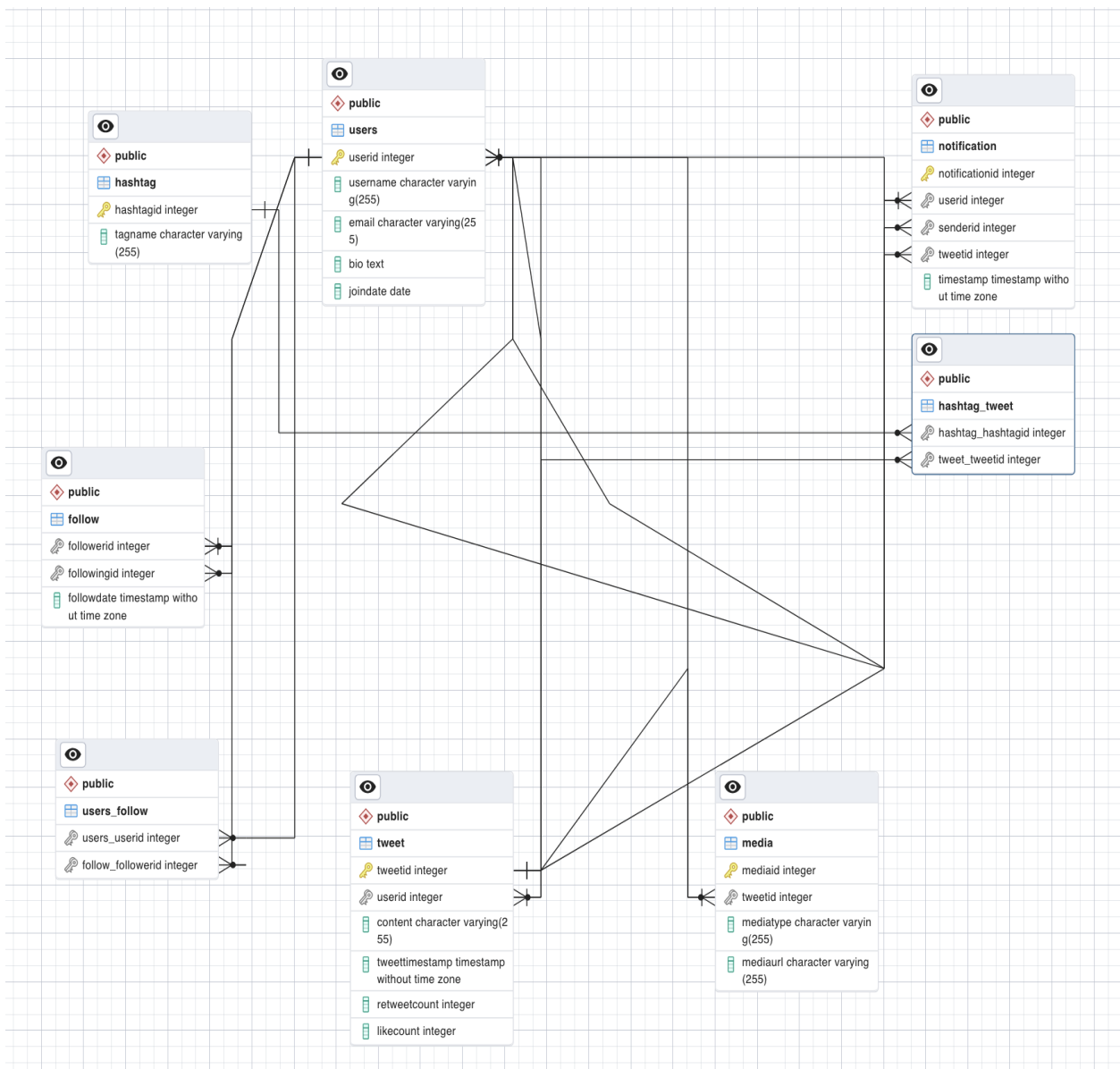
<u>Conclusion</u>:

The Twitter schema and entity relationship daigram (ERD) presented provide
a foundational structure for representing key components of the Twitter platform
in a relational database.The schema capture essential entities and relationships,
allowing for the storage and retrieval of information related to users,tweets,media,
notifications and more.Overall, the Twitter schema and ERD provide a structured
foundation to manage user interactions,content creation and social connections
on the platform,reflecting the complexity and versatility of a modern social media
ecosystem.