Database Management Lab

<Social Media Analytics>

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Contents

DBMS CASE STUDY

Social Media Analytics:

Social media analytics is the systematic process of collecting and analyzing data from various social media platforms to gain valuable insights. It allows businesses and individuals to understand their social media performance, audience behavior, and the impact of their online activities. By tracking metrics, such as engagement rates, audience demographics, and sentiment analysis, social media analytics aids in optimizing content strategies, improving brand reputation, and achieving specific business goals, all while keeping pace with evolving trends and real-time customer interactions.

Entity Relationship model:

Entities:

1. USER:

- USER_ID (PRIMARY KEY) - USERNAME

- EMAIL

- ADDRESS

- MOBILE

2.ROLES TABLE:

ROLE_ID (PRIMARY KEY)

ROLE_NAME (E.G., 'ADMIN', 'USER')

ROLL_DESC

3.PHOTOS TABLE:

PHO_ID (PRIMARY KEY) PHO_SIZE

PHO_NAME

PHO_TYPE

4.FRIENDS TABLE:

FRND_NAME (PRIMARY KEY) FRD_ID(FOREIGN KEY TO USERS) FRD_MOB (FOREIGN KEY TO USERS)

FRD_ADDRESS

FRD_EMAIL

5.POSTS TABLE:

PHO_ID (PRIMARY KEY)

PHO_DESC(FOREIGN KEY TO USERS) PHO_TYPE

6.PERMISS0N TABLE:

PER_NAME

PER_ID

PER_MODULE

PER_ROLE_ID

7.SHARES TABLE:

SHR_DESC

SHR_TYPE

SHR_POST_ID

SHR_NAME

SHR_ID

8.LOGIN TABLE:

LOG_ID

LOG_ROLL_ID

LOG_USERNAME

Relationships:

1.ONE-TO-MANY: USER TO POST

- A USER CAN CREATE MULTIPLE POSTS, BUT EACH POST BELONGS TO ONLY ONE USER.

2. ONE-TO-MANY: USER TO LIKE

- A USER CAN LIKE MULTIPLE POSTS, AND EACH LIKE BELONGS TO ONLY ONE USER.

3. ONE-TO-MANY: USER TO SHARE

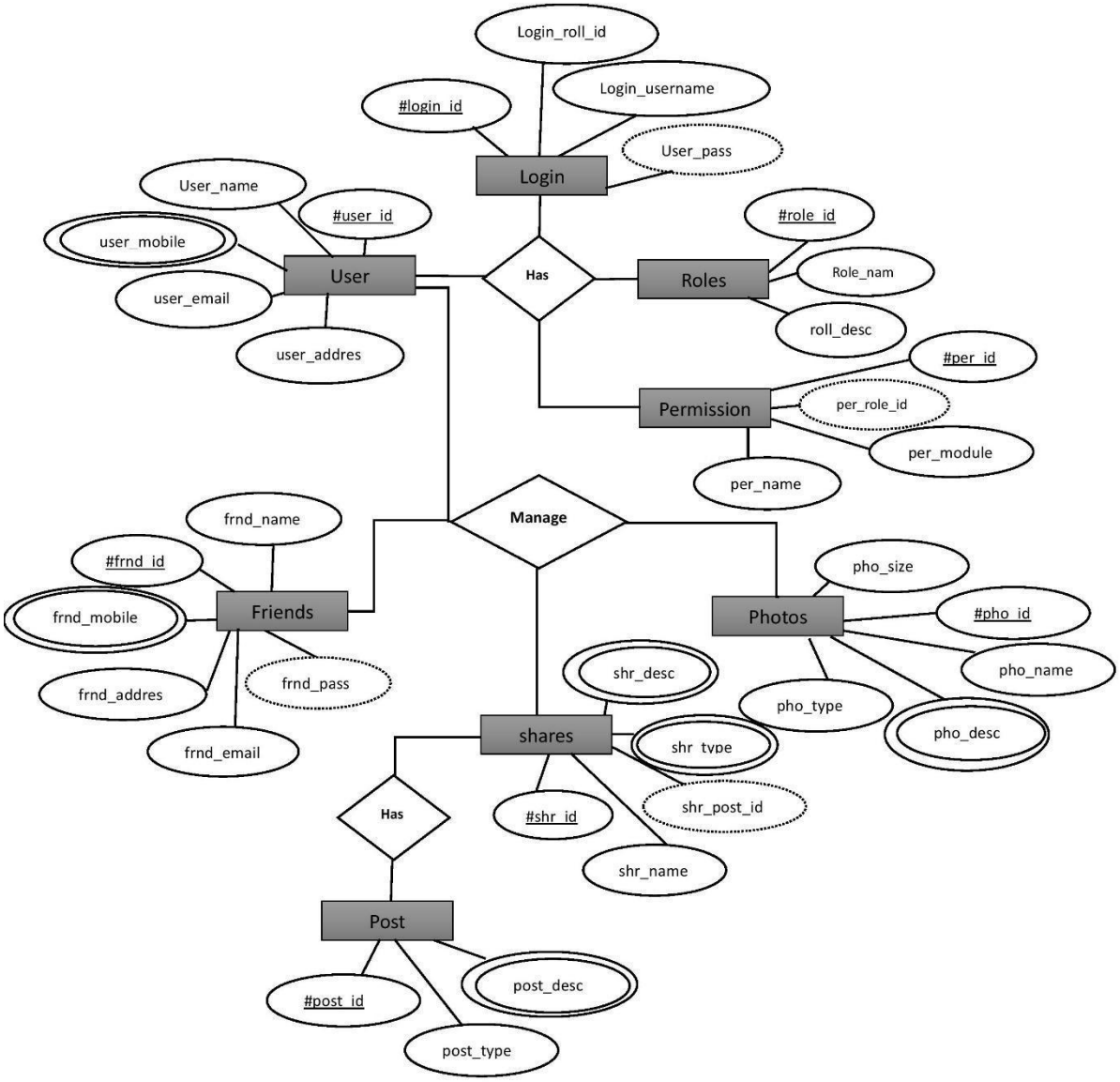
- A USER CAN SHARE MULTIPLE POSTS, AND EACH SHARE BELONGS TO ONLY ONE USER.

4. ONE-TO-MANY: USER TO COMMENT

- A USER CAN COMMENT ON MULTIPLE POSTS, AND EACH COMMENT BELONGS TO ONLY ONE USER.

5. ONE-TO-MANY: PLATFORM TO POST

- A PLATFORM CAN HAVE MULTIPLE POSTS, BUT EACH POST BELONGS TO ONLY ONE PLATFORM.



ER DAIGRAM FOR SOCIAL NETWORKING SITE

RELATIONAL SCHEMAS

USER TABLE

User_ID	User_Name	email	Address	Mobile	
1	Abhi	agorantl@gitam.in	ongolu	123	
2	Bhanu	breddy4@gitam.in	Ballari	123	
3	Thejas	tpullagu@gitam.in	Tirupathi	789	
4	nandhiswar	bnandisw@gitam.in	Anathapur	643	
5	nikhil	nkadapar@gitam.in	Hyderbad	964	

Roles table:

Role_id	Role_name	Role_Desc
1	Admin	System administrator with full access
2	User	Regular users with limited access.
3	Moderator	Content moderators with post and comment management
4	Guest	Unregisterd

Photos Table:

Pho_id	Photo_Size	Pho_Name	Pho_Type
1	2560*1920	Sunset.jpg	JPEG
2	1200*800	Beach_vacation.png	PNG
3	3000*2000	Cityscape.jpg	JPEG
4	1920*1080	Mountain.png	PNG

Friends Table:

Friend_id	User_id	Friend_user_id	Friend_Address	Friend_Email
1	1	2	123 Main st	Friend1@gmail.com
2	1	3	456 Elm st	Friend2@gmail.com
3	2	4	789 Oak st	Friend3@gmail.com
4	3	4	101 pine st	Friend4@gmail.com

Posts Table:

Post_id	User_id	Post_content	Post_type	Post_Timestamp
1	1	Enjoying a beautiful day!	Text	2023-10-28 09:00:00
2	2	Sunset over the ocean.	Text	2023-10-28 12:30:00
3	3	Exciting in new projects.	Text	2023-10-28 15:45:00
4	4	Hiking in the mountains.	Text	2023-10-28 18:15:00

Permission Tabel:

Permission Id	Permission Name	Permission Description	Module	Role_Id
1	View Posts	Allows users to view point.	Posts	2
2	Upload Photos	Permit Users to upload photos.	Photos	3
3	Comment	Enables Users to leave comments.	Comments	2
4	Manageues	Grants Administrative user management privilege	Users	1

Shares Table:

Shr_id	Shr_Name	Shr_Desc	Shr_type	Shr_post_id
1	Interesting Article	Check out this article found.	Link	5
2	Vacation Photos	Sharing My recent Vacation pics.	Image	8
3	Fung Meme	Laugh with this meme sharing.	Image	6
4	Inspirational Quotes	Some motivation	Text	7

Login Table:

Log_id	Log_Roll_id	Log_UserName	User_Pass
1	2	Johndoe	ijk
2	3	dmith	sedhu
3	1	smith	sdfss
4	2	emiolo	sdfff

Queries:

1.SELECT * FROM USERS WHERE USERNAME =’ABHI”';

User_id	User_Name	Email	Full_Name	Bio	Location	Jion_date
1	Abhi	agorantl@gitma.in	abhi	TEch enthusiast.	New York,USA	2022-1-25

2.SELECT * FROM POSTS WHERE USERID = 2;

Post_id	User_id	Context	Likes_Count	Shares_Count	Comments_count
5	2	Sunset over the ocean.	120	45	30
8	2	Enjoying a beautiful Sunset.	85	25	15

3.SELECT LIKES_COUNT FROM POSTS WHERE POSTID = 5;

Likes_count
120

3.SELECT LIKES_COUNT FROM POSTS WHERE POSTID = 5;

Comment_id	User_id	Post_id	content
12	2	7	Great post!
13	4	7	I love this.

5.SELECT * FROM POSTS ORDER BY LIKES_COUNT DESC LIMIT 1;

Post_id	User_id	Content	Time_stamp	Like_comment	Shares_comment	Comment_count.
5	2	Sunset over the ocean.	2023-10-28 12:30:00	120	45	30

6.SELECT U.* FROM USERS U

INNER JOIN FRIENDS F ON U.USERID = F.FRIEND_USER_ID WHERE F.USER_ID = 1;

User_id	User_Name	Email	Full_Name	Location	Jion_Date
2	sarat	sarat@gmail.com	sarat	india	2021-10-20
3	mike	Mile@gmail.com	mike	chaina	2021-10-21
4	thin	thin@gmail.com	thin	zapan	2021-10-25

7.SELECT POSTID, COUNT(*) AS SHARECOUNT FROM SHARES GROUP BY POSTID;

Post_id	Share_Count
5	25

6	30
7	45
8	23

8.SELECT * FROM USERS WHERE DATEDIFF(NOW(), LAST_LOGIN_DATE) > 30;

User_id	User_name	Email	Full name	lacation	Jion_Date	Last_login_date
2	sarat	sarat@gmail.com	sarat	india	2021-10-20	2024-10-25
4	thin	thin@gmail.com	thin	zapan	2021-10-25	2024-10-25

9.SELECT SUM(COMMENTS_COUNT) AS TOTALCOMMENTS FROM POSTS WHERE USERID3;

TotalComment
60

10.SELECT * FROM USERS WHERE ROLEID = (SELECT ROLEID FROM ROLES WHERE ROLENAME = 'ADMIN');

| USERID | USERNAME | EMAIL | FULL_NAME | BIO | LOCATION | JOIN_DATE | ROLEID |

|--------|----------|--------------------|----------|--------------------------|-------------|--------

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| 1 | ABHI | AGORANTL@GITAM.IN | ABHI | TECH ENTHUSIAST, COFFEE LOVER |

NEW YORK, USA | 2022-01-15 |

1. DDL (DATA DEFINITION LANGUAGE) - CREATE TABLES:

SQL

CREATE TABLE USER (

USER_ID INT PRIMARY KEY,

2. DML (DATA MANIPULATION LANGUAGE) - INSERT DATA:

USERNAME VARCHAR(50),

SQL

EMAIL VARCHAR(100),

INSERT INTO USER (USER_ID, USERNAME, EMAIL,

REGISTRATION_DATE DATE,

REGISTRATION_DATE, LAST_LOGIN_DATE)

LAST_LOGIN_DATE DATE

VALUES (1, 'ABHI', 'AGORANTL@GITAM.IN', '2022-01-01',

);

'2022-01-05');

CREATE TABLE PLATFORM (

PLATFORM_ID INT PRIMARY KEY,

PLATFORM_NAME VARCHAR(50)

3. DCL (DATA CONTROL LANGUAGE) - GRANT PRIVILEGES:

SQL

GRANT SELECT, INSERT, UPDATE, DELETE ON USER TO ANALYST_ROLE;

4. VIEWS - CREATE A VIEW TO SIMPLIFY COMPLEX QUERIES:

```SQL

CREATE VIEW USERACTIVITY AS

SELECT U.USERNAME, P.POST_CONTENT, L.LIKE_DATE, S.SHARE_DATE, C.COMMENT_CONTENT FROM USER U

LEFT JOIN POST P ON U.USER_ID = P.USER_ID

LEFT JOIN LIKE L ON U.USER_ID

Conclusion:

Social media analytics is an indispensable resource in the digital age. It provides invaluable data-driven insights into social media performance, audience preferences, and the impact of online strategies. Businesses and individuals can harness these insights to refine content, improve engagement, and achieve specific goals. By constantly monitoring trends and sentiment, social media analytics ensures adaptability and responsiveness in an ever-changing landscape. It empowers users to navigate the complexities of the digital realm and maximize the potential of social media platforms for branding and communication.