DBMS CODES

```sql
--Step 1
drop table customers;

--Step 2
drop table orders;

--Step3
drop table shipping;

--Step4
-- Users
CREATE TABLE Users (
    UserId INT AUTO_INCREMENT PRIMARY KEY,
    Username VARCHAR(255) NOT NULL UNIQUE,
    Email VARCHAR(255) NOT NULL UNIQUE,
    PasswordHash VARCHAR(255) NOT NULL,
    FullName VARCHAR(255),
    Bio TEXT,
    ProfilePic VARCHAR(255),
    JoinDate DATE NOT NULL
);

-- Posts
CREATE TABLE Posts (
    PostId INT AUTO_INCREMENT PRIMARY KEY,
    UserId INT,
    Content TEXT,
    MediaURL VARCHAR(255),
    PostDate DATETIME NOT NULL,
    Location VARCHAR(255),
    FOREIGN KEY (UserId) REFERENCES Users(UserId)
);

-- Comments
```

```sql
CREATE TABLE Comments (
    CommentId INT AUTO_INCREMENT PRIMARY KEY,
    PostId INT,
    UserId INT,
    Content TEXT,
    CommentDate DATETIME NOT NULL,
    FOREIGN KEY (PostId) REFERENCES Posts(PostId),
    FOREIGN KEY (UserId) REFERENCES Users(UserId)
);

-- Likes
CREATE TABLE Likes (
    LikeId INT AUTO_INCREMENT PRIMARY KEY,
    UserId INT,
    PostId INT NULL,
    CommentId INT NULL,
    LikeDate DATETIME NOT NULL,
    FOREIGN KEY (UserId) REFERENCES Users(UserId),
    FOREIGN KEY (PostId) REFERENCES Posts(PostId),
    FOREIGN KEY (CommentId) REFERENCES Comments(CommentId)
);

-- Followers
CREATE TABLE Followers (
    FollowerId INT AUTO_INCREMENT PRIMARY KEY,
    FollowingUserId INT,
    FollowedUserId INT,
    FollowDate DATE NOT NULL,
    FOREIGN KEY (FollowingUserId) REFERENCES Users(UserId),
    FOREIGN KEY (FollowedUserId) REFERENCES Users(UserId)
);

-- Messages
CREATE TABLE Messages (
    MessageId INT AUTO_INCREMENT PRIMARY KEY,
    SenderId INT,
    ReceiverId INT,
    MessageContent TEXT,
    SendDate DATETIME NOT NULL,
    FOREIGN KEY (SenderId) REFERENCES Users(UserId),
    FOREIGN KEY (ReceiverId) REFERENCES Users(UserId)
);

-- Groups
CREATE TABLE Groups (
    GroupId INT AUTO_INCREMENT PRIMARY KEY,
    GroupName VARCHAR(255) NOT NULL,
    Description TEXT,
    CreateDate DATE NOT NULL
);

-- GroupMembers
CREATE TABLE GroupMembers (
    MembershipId INT AUTO_INCREMENT PRIMARY KEY,
    GroupId INT,
```

```sql
    UserId INT,
    JoinDate DATE NOT NULL,
    FOREIGN KEY (GroupId) REFERENCES Groups(GroupId),
    FOREIGN KEY (UserId) REFERENCES Users(UserId)
);

-- Notifications
CREATE TABLE Notifications (
    NotificationId INT AUTO_INCREMENT PRIMARY KEY,
    UserId INT,
    NotificationType VARCHAR(255) NOT NULL,
    NotificationContent TEXT,
    NotificationDate DATETIME NOT NULL,
    FOREIGN KEY (UserId) REFERENCES Users(UserId)
);

-- UserSettings
CREATE TABLE UserSettings (
    SettingId INT AUTO_INCREMENT PRIMARY KEY,
    UserId INT,
    SettingType VARCHAR(255) NOT NULL,
    SettingValue TEXT NOT NULL,
    FOREIGN KEY (UserId) REFERENCES Users(UserId)
);

--Step 5
INSERT INTO Users (Userid, Username, Email, PasswordHash, FullName, Bio, ProfilePic, Joi
(1, 'johnDoe', 'john.doe@email.com', 'hashed_password_1', 'John Doe', 'Just a regular Jo
(2, 'janeDoe', 'jane.doe@email.com', 'hashed_password_2', 'Jane Doe', 'Love hiking and o
(3, 'coolUser123', 'cooluser123@email.com', 'hashed_password_3', 'Cool User', 'Always up
(4, 'travelBug', 'travel.bug@email.com', 'hashed_password_4', 'Travel Bug', 'Exploring t
(5, 'bookworm', 'bookworm@email.com', 'hashed_password_5', 'Book Worm', 'A room without
(6, 'gamerGuy', 'gamer.guy@email.com', 'hashed_password_6', 'Gamer Guy', 'Living one gam
(7, 'codingNinja', 'coding.ninja@email.com', 'hashed_password_7', 'Coding Ninja', 'Writi
(8, 'fitnessFreak', 'fitness.freak@email.com', 'hashed_password_8', 'Fitness Freak', 'Sw
(9, 'foodie', 'foodie@email.com', 'hashed_password_9', 'Foodie', 'Life is short, eat des
(10, 'movieBuff', 'movie.buff@email.com', 'hashed_password_10', 'Movie Buff', 'A movie a
(11, 'techGeek', 'tech.geek@email.com', 'hashed_password_11', 'Tech Geek', 'Embracing te
(12, 'natureLover', 'nature.lover@email.com', 'hashed_password_12', 'Nature Lover', 'Fin
(13, 'musicMaestro', 'music.maestro@email.com', 'hashed_password_13', 'Music Maestro', '
(14, 'artAficionado', 'art.aficionado@email.com', 'hashed_password_14', 'Art Aficionado'
(15, 'scienceSavvy', 'science.savvy@email.com', 'hashed_password_15', 'Science Savvy', '

--Step 6

INSERT INTO Posts (PostId, UserId, Content, MediaURL, PostDate, Location) VALUES
(1, 1, 'Loving the new cafe in town!', '', '2023-01-02 10:30:00', 'Town Center'),
(2, 2, 'Here's to new adventures!', 'adventure.jpg', '2023-01-03 09:15:00', ''),
(3, 3, 'Never too old to go on adventures.', 'mountain.jpg', '2023-01-04 08:45:00', 'Roc
(4, 4, 'My latest read. Highly recommend!', 'book.jpg', '2023-01-05 17:20:00', ''),
(5, 5, 'Game night was epic!', 'gamenight.jpg', '2023-01-06 20:00:00', ''),
(6, 6, 'Coding my way through life.', '', '2023-01-07 13:00:00', 'Coffee Shop'),
(7, 7, 'Morning run completed!', 'morningrun.jpg', '2023-01-08 07:30:00', 'Park'),
(8, 8, 'Who else loves chocolate cake? 😋', 'chocolatecake.jpg', '2023-01-09 19:00:00',
(9, 9, 'Movie marathon, anyone?', '', '2023-01-10 21:00:00', 'Home Cinema'),
```

```
                   (10, 10, 'Exploring the latest tech at the expo.', 'techexpo.jpg', '2023-01-11 15:00:00'
                   (11, 11, 'A peaceful day in the forest.', 'forest.jpg', '2023-01-12 11:00:00', 'Greenwoo
                   (12, 12, 'Jamming to some new tunes.', 'music.jpg', '2023-01-13 18:30:00', ''),
                   (13, 13, 'Visited an amazing art gallery today.', 'artgallery.jpg', '2023-01-14 14:00:00
                   (14, 14, 'Stargazing night. The universe is fascinating!', 'stars.jpg', '2023-01-15 22:0
                   (15, 15, 'Experimenting with new science projects.', 'scienceproject.jpg', '2023-01-16 1


                   --Step 7

                   INSERT INTO Comments (CommentId, PostId, UserId, Content, CommentDate) VALUES
                   (1, 1, 2, 'Absolutely love that place!', '2023-01-02 11:00:00'),
                   (2, 2, 1, 'Looks amazing! Have fun!', '2023-01-03 10:00:00'),
                   (3, 3, 4, 'Wish I was there with you.', '2023-01-04 09:30:00'),
                   (4, 4, 3, 'That book is on my list too!', '2023-01-05 18:00:00'),
                   (5, 5, 6, 'Next time count me in!', '2023-01-06 21:05:00'),
                   (6, 6, 5, 'How do you find time to code?', '2023-01-07 14:00:00'),
                   (7, 7, 8, 'Running is not for me, but good job!', '2023-01-08 08:00:00'),
                   (8, 8, 7, 'I could eat an entire cake myself.', '2023-01-09 20:00:00'),
                   (9, 9, 10, 'I'm definitely up for a movie night.', '2023-01-10 22:00:00'),
                   (10, 10, 9, 'What was your favorite gadget?', '2023-01-11 16:00:00'),
                   (11, 11, 12, 'Nature is so healing. Beautiful pic!', '2023-01-12 12:00:00'),
                   (12, 12, 11, 'What are you listening to?', '2023-01-13 19:00:00'),
                   (13, 13, 14, 'Art feeds the soul. Looks like a great day!', '2023-01-14 15:00:00'),
                   (14, 14, 13, 'The stars are just magical.', '2023-01-15 23:00:00'),
                   (15, 15, 1, 'Science for the win!', '2023-01-16 17:00:00');


                   --Step 8

                   INSERT INTO Likes (LikeId, UserId, PostId, CommentId, LikeDate) VALUES
                   (1, 2, 1, NULL, '2023-01-02 12:00:00'),
                   (2, 3, NULL, 1, '2023-01-02 12:05:00'),
                   (3, 4, 2, NULL, '2023-01-03 10:30:00'),
                   (4, 5, NULL, 2, '2023-01-03 11:00:00'),
                   (5, 1, 3, NULL, '2023-01-04 10:00:00'),
                   (6, 6, NULL, 3, '2023-01-04 10:05:00'),
                   (7, 7, 4, NULL, '2023-01-05 18:30:00'),
                   (8, 8, NULL, 4, '2023-01-05 19:00:00'),
                   (9, 9, 5, NULL, '2023-01-06 21:10:00'),
                   (10, 10, NULL, 5, '2023-01-06 21:15:00'),
                   (11, 11, 6, NULL, '2023-01-07 14:30:00'),
                   (12, 12, NULL, 6, '2023-01-07 14:35:00'),
                   (13, 13, 7, NULL, '2023-01-08 08:30:00'),
                   (14, 14, NULL, 7, '2023-01-08 08:35:00'),
                   (15, 15, 8, NULL, '2023-01-09 20:30:00');


                   --Step 9

                   INSERT INTO Followers (FollowerId, FollowingUserId, FollowedUserId, FollowDate) VALUES
                   (1, 1, 2, '2023-01-01'),
                   (2, 1, 3, '2023-01-02'),
                   (3, 2, 1, '2023-01-03'),
                   (4, 3, 4, '2023-01-04'),
                   (5, 4, 5, '2023-01-05'),
                   (6, 5, 6, '2023-01-06'),
                   (7, 6, 7, '2023-01-07'),
```

```
(8, 7, 8, '2023-01-08'),
(9, 8, 9, '2023-01-09'),
(10, 9, 10, '2023-01-10'),
(11, 10, 11, '2023-01-11'),
(12, 11, 12, '2023-01-12'),
(13, 12, 13, '2023-01-13'),
(14, 13, 14, '2023-01-14'),
(15, 14, 15, '2023-01-15');
```

```
--Step 10

INSERT INTO Messages (MessageId, SenderId, ReceiverId, MessageContent, SendDate) VALUES
(1, 1, 2, 'Hey, how have you been?', '2023-01-02 10:00:00'),
(2, 2, 1, 'Im good, thanks! And you?', '2023-01-02 10:05:00'),
(3, 3, 4, 'Are we still on for tomorrow?', '2023-01-03 15:30:00'),
(4, 4, 3, 'Yes, looking forward to it!', '2023-01-03 15:45:00'),
(5, 5, 6, 'Did you see that new movie?', '2023-01-04 20:00:00'),
(6, 6, 5, 'Not yet, is it any good?', '2023-01-04 20:10:00'),
(7, 7, 8, 'Happy Birthday!! 🎉', '2023-01-05 00:01:00'),
(8, 8, 7, 'Thank you so much!! 😊', '2023-01-05 08:30:00'),
(9, 9, 10, 'Wanna grab lunch this week?', '2023-01-06 12:00:00'),
(10, 10, 9, 'Sure, how about Wednesday?', '2023-01-06 12:15:00'),
(11, 11, 12, 'Can you help me with my project?', '2023-01-07 17:00:00'),
(12, 12, 11, 'Of course, what do you need?', '2023-01-07 17:05:00'),
(13, 13, 14, 'I loved the photos you posted!', '2023-01-08 09:00:00'),
(14, 14, 13, 'Thanks! Glad you liked them 😊', '2023-01-08 09:10:00'),
(15, 15, 1, 'We should catch up sometime!', '2023-01-09 11:00:00');

--Step 11

INSERT INTO Groups (GroupId, GroupName, Description, CreateDate) VALUES
(1, 'Outdoor Enthusiasts', 'A group for people who love outdoor activities', '2023-01-01
(2, 'Book Club', 'Discussing the latest and classic books', '2023-01-02'),
(3, 'Movie Lovers', 'A place to share and discover movies', '2023-01-03'),
(4, 'Tech Innovators', 'Exploring the latest in technology', '2023-01-04'),
(5, 'Fitness Freaks', 'Sharing fitness tips and motivation', '2023-01-05'),
(6, 'Gourmet Group', 'For those who love cooking and eating', '2023-01-06'),
(7, 'Music Makers', 'Connecting musicians and music lovers', '2023-01-07'),
(8, 'Art Admirers', 'Showcase and discuss art', '2023-01-08'),
(9, 'Science Enthusiasts', 'A hub for science lovers to share knowledge', '2023-01-09'),
(10, 'Travel Buddies', 'Share travel stories and tips', '2023-01-10'),
(11, 'Coding Corner', 'A place for developers to talk code', '2023-01-11'),
(12, 'Pet Pals', 'A group for pet owners to share their experiences', '2023-01-12'),
(13, 'Green Thumbs', 'Discussing all things gardening', '2023-01-13'),
(14, 'History Buffs', 'A group for those who love history', '2023-01-14'),
(15, 'Fashion Forward', 'For those who want to share style tips and trends', '2023-01-15

--Step 12
INSERT INTO GroupMembers (MembershipId, GroupId, UserId, JoinDate) VALUES
(1, 1, 1, '2023-01-02'),
(2, 2, 3, '2023-01-04'),
```

```
            (3, 3, 5, '2023-01-06'),
            (4, 4, 7, '2023-01-08'),
            (5, 5, 9, '2023-01-10'),
            (6, 6, 11, '2023-01-12'),
            (7, 7, 13, '2023-01-14'),
            (8, 8, 15, '2023-01-16'),
            (9, 9, 2, '2023-01-03'),
            (10, 10, 4, '2023-01-05'),
            (11, 11, 6, '2023-01-07'),
            (12, 12, 8, '2023-01-09'),
            (13, 13, 10, '2023-01-11'),
            (14, 14, 12, '2023-01-13'),
            (15, 15, 14, '2023-01-15');


            --Step 13
            INSERT INTO Notifications (NotificationId, UserId, NotificationType, NotificationContent
            (1, 1, 'Follow', 'User 2 started following you', '2023-01-02 09:00:00'),
            (2, 2, 'Like', 'User 3 liked your post', '2023-01-03 10:00:00'),
            (3, 3, 'Comment', 'User 4 commented on your post', '2023-01-04 11:00:00'),
            (4, 4, 'Message', 'You have a new message from User 5', '2023-01-05 12:00:00'),
            (5, 5, 'GroupJoin', 'User 6 joined your group', '2023-01-06 13:00:00'),
            (6, 6, 'Follow', 'User 7 started following you', '2023-01-07 14:00:00'),
            (7, 7, 'Like', 'User 8 liked your comment', '2023-01-08 15:00:00'),
            (8, 8, 'Comment', 'User 9 commented on your post', '2023-01-09 16:00:00'),
            (9, 9, 'Message', 'You have a new message from User 10', '2023-01-10 17:00:00'),
            (10, 10, 'GroupJoin', 'User 11 joined your group', '2023-01-11 18:00:00'),
            (11, 11, 'Follow', 'User 12 started following you', '2023-01-12 19:00:00'),
            (12, 12, 'Like', 'User 13 liked your post', '2023-01-13 20:00:00'),
            (13, 13, 'Comment', 'User 14 commented on your post', '2023-01-14 21:00:00'),
            (14, 14, 'Message', 'You have a new message from User 15', '2023-01-15 22:00:00'),
            (15, 15, 'GroupJoin', 'User 1 joined your group', '2023-01-16 23:00:00');

            --Step 14
            INSERT INTO UserSettings (SettingId, UserId, SettingType, SettingValue) VALUES
            (1, 1, 'Privacy', 'Public'),
            (2, 2, 'Privacy', 'FriendsOnly'),
            (3, 3, 'Notifications', 'Enabled'),
            (4, 4, 'Notifications', 'Enabled'),
            (5, 5, 'Language', 'English'),
            (6, 6, 'Language', 'Spanish'),
            (7, 7, 'Privacy', 'Public'),
            (8, 8, 'Notifications', 'Disabled'),
            (9, 9, 'Language', 'French'),
            (10, 10, 'Privacy', 'FriendsOnly'),
            (11, 11, 'Notifications', 'Enabled'),
            (12, 12, 'Language', 'German'),
            (13, 13, 'Privacy', 'Public'),
            (14, 14, 'Notifications', 'Disabled'),
            (15, 15, 'Language', 'Japanese');

            --Step 15
            -- Easy Queries

            -- List all users
```

```sql
SELECT * FROM Users;

-- Find all posts made by a specific user (UserId = 1)
SELECT * FROM Posts WHERE UserId = 1;

-- Display all comments on a specific post (PostId = 2)
SELECT * FROM Comments WHERE PostId = 2;

-- Medium Queries

-- Count the number of posts each user has made
SELECT UserId, COUNT(*) AS NumberOfPosts FROM Posts GROUP BY UserId;

-- Find the total number of likes for each post
SELECT PostId, COUNT(*) AS TotalLikes FROM Likes GROUP BY PostId;

-- Retrieve user details along with the number of followers they have
SELECT u.*, COUNT(f.FollowingUserId) AS NumberOfFollowers
FROM Users u
LEFT JOIN Followers f ON u.UserId = f.FollowedUserId
GROUP BY u.UserId;

-- List all likes on posts made by a specific user (UserId = 1)
SELECT l.* FROM Likes l
JOIN Posts p ON l.PostId = p.PostId
WHERE p.UserId = 1;

-- Hard Queries

-- List users who have not made any posts yet
SELECT * FROM Users WHERE UserId NOT IN (SELECT DISTINCT UserId FROM Posts);

-- Find the most recent post of each user
SELECT p.UserId, MAX(p.PostDate) as MostRecentPost
FROM Posts p
GROUP BY p.UserId;

-- Identify users who follow back all their followers
SELECT DISTINCT f1.FollowedUserId
FROM Followers f1
INNER JOIN Followers f2 ON f1.FollowedUserId = f2.FollowingUserId AND f1.FollowingUserId
```