Entities:

1. \*\*User\*\*:

- Username (Primary Key)

- Email id

- Password

- Profile Picture

- Status

- Last Seen Timestamp

2. \*\*Group\*\*:

- GroupID (Primary Key)

- Group Name

- Creation Date

- Last Activity Date

3. \*\*Participant\*\*:

- ParticipantID (Primary Key)

- UserID (Foreign Key)

- GroupID (Foreign Key)

4. \*\*Message\*\*:

- MessageID (Primary Key)

- Content

- Timestamp

- MessageType (Text, Image, Video, Audio, Document, etc.)

- Attachment (e.g., media file URL or reference)

5. \*\*Media\*\*:

- MediaID (Primary Key)

- MediaType (Image, Video, Audio, Document, etc.)

- MediaURL (URL or reference to the multimedia file)

- UploadTimestamp

- FileSize

7. \*\*FriendRequest\*\*:

- RequestID (Primary Key)

- SenderUserID (Foreign Key)

- ReceiverUserID (Foreign Key)

- RequestStatus (e.g., Pending, Accepted, Declined)

- RequestTimestamp

8. \*\*MessageStatus\*\*:

- StatusID (Primary Key)

- MessageID (Foreign Key)

- UserID (Foreign Key)

- Status (e.g., Sent, Delivered, Read)

- StatusTimestamp

9. \*\*Session\*\*:

- SessionID (Primary Key)

- UserID (Foreign Key)

- DeviceID (Unique identifier for the user's device)

- LoginTime

- LogoutTime (nullable, to be updated upon logout or session expiration)

- IP Address

- User Agent (information about the user's browser or client)

Relationships:

- A \*\*User\*\* can belong to multiple \*\*Groups\*\*, and a \*\*Group\*\* can have multiple \*\*Users\*\* (Many-to-Many relationship via \*\*Participant\*\*).

- A \*\*User\*\* can send multiple \*\*Messages\*\* to other users or groups, and a \*\*Message\*\* is sent by one \*\*User\*\*. Each message can include multimedia content (Many-to-One relationship between \*\*User\*\* and \*\*Message\*\*, and \*\*Message\*\* includes a \*\*MediaType\*\* and a reference to the multimedia content).

- A \*\*Message\*\* can have multiple \*\*MessageStatus\*\* entries to track its delivery and read status to different users.

- Users can send and receive \*\*FriendRequests\*\* (Many-to-Many relationship between \*\*User\*\* and \*\*FriendRequest\*\*).

- A \*\*User\*\* can have multiple \*\*Sessions\*\*. When a user logs in from different devices or browsers, a new session record is created. The session records track login and logout times, the device used, IP address, and user agent information.

This extended ER diagram includes a "Session" entity to track user sessions in the messaging application, allowing you to monitor user activity and manage multiple active sessions per user. Depending on your application's specific requirements, you can further refine this schema to accommodate additional session-related features or security measures.