Planning for Kalakritee Portal

1. Identify Data Entities:

Define the main entities your social network will manage:

- **User Profiles:** Information about artists, including names, usernames, email addresses, bios, profile pictures, Payment QR code, Facebook id, Instagram Id, youtube Id, watermark etc.
- **Artwork:** Details about each piece of artwork, such as title, description, creation date, medium, dimensions, Price, tags, Category etc.
- **Collaborations:** Information about collaborations between artists, including project details, participants, and creation dates.
- **Groups/Communities:** Data about groups or communities formed by artists, including group names, descriptions, members, etc.
- **Events:** Details about events like exhibitions, workshops, and meetups, including event names, descriptions, dates, locations, etc.
- **Interactions:** Records of interactions between users, such as likes, comments, shares, messages, etc.

2. Define Relationships:

Establish relationships between these entities to reflect how they interact:

- **User-Artwork Relationship:** Users can upload multiple artworks, and artworks are associated with a user.
- **User-Collaboration Relationship:** Users can participate in multiple collaborations, and collaborations involve multiple users.
- **User-Group Relationship:** Users can be members of various groups, and groups have multiple members.
- **User-Event Relationship:** Users can organise, attend, or show interest in multiple events, and events have participants.
- **Artwork-Interaction Relationship:** Artworks can receive likes, comments, shares, etc.

3. Choose Database Technology:

Decide whether to use a relational database (e.g., MySQL, PostgreSQL) based on the nature of your data and the platform's requirements.

4. Design the Schema:

Create a schema that defines the structure of your database:

- **User Table:** Fields like user ID, username, email, password hash, bio, profile picture, Payment QR code, Facebook id, Instagram Id, youtube Id, watermark.
- **Category:** Fields like Category ID, Name, Description, parent category.
- **Tag:** Fields like Tag ID, Name.
- **Artwork Table:** Fields like artwork ID, title, description, creation date, user ID (foreign key) Price, tags, Category ID.
- **Collaboration Table:** Fields like collaboration ID, project name, creation date, user IDs (foreign keys), etc.
- **Group Table:** Fields like group ID, name, description, creation date, user IDs (foreign keys), etc.
- **Event Table:** Fields like event ID, name, description, date, location, user ID (organiser), etc.
- **Interaction Table:** Fields like interaction ID, type (like, comment, share), creation date, user ID (actor), artwork ID (if applicable), etc.

5. Establish Data Integrity:

Use primary keys to uniquely identify records and foreign keys to establish relationships between tables. This ensures data integrity and consistency.

6. Indexing and Optimization:

Create indexes on columns frequently used in queries (e.g., username, artwork title) to improve query performance.

7. Security and Privacy:

Implement user authentication and authorization to secure sensitive data. Hash and salt passwords before storing them.

8. Testing and Optimization:

Thoroughly test the database design with various scenarios to ensure data is correctly stored, retrieved, and updated. Optimize queries for speed and efficiency.

9. Scaling:

Consider the potential for scalability by designing the database to accommodate growth in users and data. This might involve techniques like sharding, replication, or using cloud-based databases.

10. Backup and Recovery:

Implement regular data backups and establish procedures for database recovery in case of data loss or system failures.

Remember, database planning is a crucial foundation for your social network's success. It's recommended to involve experienced database professionals to ensure the database design meets your platform's requirements and can adapt to future needs.