Field
Club ID
club name
club description
club_email
club type
meeting day
meeting location
meeting time
application
major requirement
gpa requirement
student 1 first name
student 1 last name
student 1 class
student 1 role
student 2 first name
student 2 last name
student 2 class
student 2 role
student 3 first name
student 3 last name
student 3 class
student 3 role

<<<<< Given Table with Field listed.

First Normalization (1NF) – Functional Dependencies, removing duplicates.
Duplicate Attribute:
- Student's first name (first_name)
- Student's last name (last_name)
- Student's class (class)
- Student's role (role)
Multi-valued Attribute:
- club_type = educational, professional, social

Entities/Tables after 1NF:
- club Entity/Table
    o Primary Key PK: club_id
- club_type Entity/Table
    o Composite Primary Key CPK
        ▪ Primary Key PK/CPK: type_id
        ▪ Foreign Key FK/CPK: club_id
    o Other Attributes/Column
        ▪ type_educational
        ▪ type_professional
        ▪ type_social
- student Entity/Table
    o Composite Primary Key CPK
        ▪ Primary Key PK/CPK: student_id
        ▪ Foreign Key FK/CPK: club_id
    o Other Attributes/Columns
        ▪ student_first_name
        ▪ student_last_name
        ▪ student_class
        ▪ student_role

Table after 1NF – 1st Normalization Step

Entity/Table Name	Club	student	club_type
Attribute/Column Names	club_id PK	club_id FK/CPK	club_id FK/CPK
	club_name	student_id PK/CPK	type_id PK/CPK
	description	student_first_name	type_educational
	club_email	student_last_name	type_professional
	meeting_day	student_class	type_social
	meeting_location	student_role	
	meeting_time		
	application		
	major_requirement		
	gpa_requirement		

Second Normalization (2NF)
- Partial Dependencies
   o club_student Entity/Table
      ▪ Composite Primary Key CPK
         • Foreign Key FK/CPK: club_id
         • Foreign Key FK/CPK: student_id
      ▪ Other Attributes/Columns
         • student_role
   o club_type Entity/Table
      ▪ Composite Primary Key CPK
         • Foreign Key FK/CPK: club_id
         • Foreign Key FK/CPK: type_id
   o student Entity/Table
      ▪ Not a composite primary key anymore.
         • Primary Key PK: student_id
   o type Entity/Table
      ▪ Not a composite primary key anymore.
         • Primary Key PK: type_id

Entity/Table Name	club	club_student	student	club_type	type
Attribute/Column Names	club_id PK	club_id FK/CPK	student_id PK	club_id FK/CPK	type_id PK
	club_name	student_id FK/CPK	student_first_name	type_id FK/CPK	type_educational
	description	student_role	student_last_name		type_professional
	club_email		student_class		type_social
	meeting_day				
	meeting_location				
	meeting_time				
	application				
	major_requirement				
	gpa_requirement				

Table after 2NF – 2nd Normalization Step

Third Normalization (3NF)
- Transitive Dependencies
  o meeting Entity/Table
    ▪ Primary Key PK: meeting_id
  o requirement Entity/Table
    ▪ Primary Key PK: requirement_id
  o club Entity/Table
    ▪ Foreign Key (FK): requirement_id
    ▪ Foreign KEY (FK): meeting_id

Table after 3NF – 3rd Normalization Step

Entity / Table Name	meeting	requirement	club	club_student	student	club_type	type
Attribute/ Column Names	meeting_id PK	requirement _id PK	club_id PK	student_id FK/CPK	student_id PK	type_id FK/CPK	type_id PK
	meeting_locat ion	gpa_require ment	requireme nt_id (FK)	club_id FK/CPK	student_first_name	club_id FK/CPK	type_educational
	meeting_day	major_requir ement	meeting_id (FK)	student_role	student_last_name		type_professional
	meeting_time		club_email		student_class		type_social
			application				
			club_name				
			description				