Event Management System

ERD Diagram:

College
PK College ID
College Name

Consists of

Student Club
PK Club ID
Club Name
TotalMembers
FK College ID

ClubEvents
PK FK1 ClubID
PK FK2 StudentID

Equipment
PK EquipmentID
EquipmentName
Availability
FK EventID

Venue
PK Venue ID
Venue Name
Venue Address
Capacity

take place

Events
PK EventID
Event Name
Type
Description
Start Date Time
End Date Time
FK Venue ID

Requires

Organizes

SponsoredBy
PK,FK1 SponsorID
PK,FK2 EventID

Sponsors
PK Sponsor ID
Sponsor Name
SponsoredAmount

Have

StudentEvents
PK FK1 EventsID
PK FK2 StudentsID

Attend

Competition
PK CompetitionID
CompetitionName
CompetitionDescription

CompetitionEvents
PK CompetitionEventID
StartDate
EndDate

Judge
PK JudgeID
JudgeName
JudgeDescription

Students
PK StudentID
StudentName
StudentAddress
StudentPhone
StudentEmail
are

Purchases

Tickets
PK TicketID
Ticket Count
PaidDate
TicketsSold
EventDate
FK StudentID

Requires

Participates
PK ParticipantID
Winner (Yes/NO)
FK CompetitionEventID
FK StudentID

Member
PK MemberID
MemberName
MembershipStartDate
MembershipEndDate
isAdmin
FK Club ID
FK StudentID

Payments
PK Payment ID
Total amount
BookingDateTime
FK TicketID
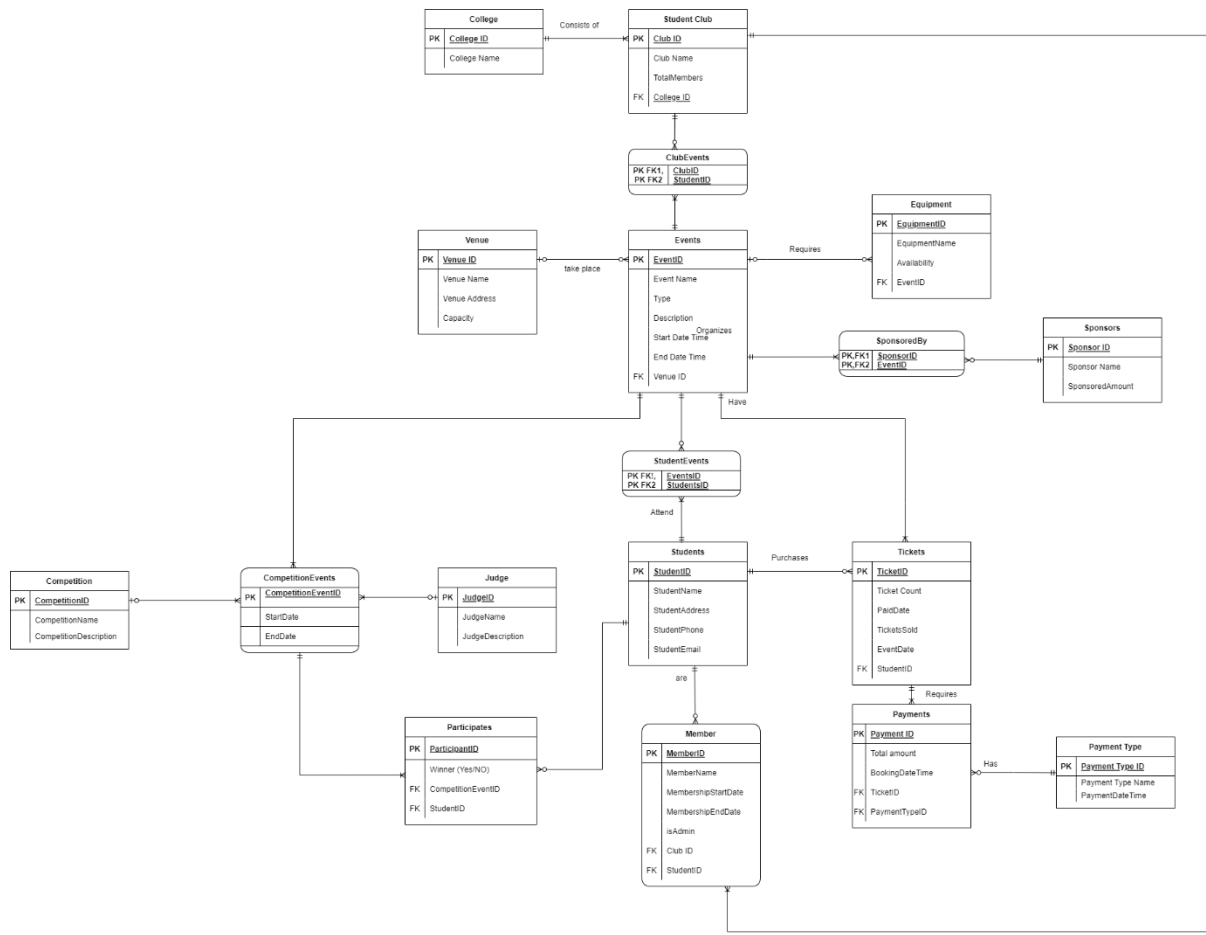FK PaymentTypeID

Has

Payment Type
PK Payment Type ID
Payment Type Name
PaymentDateTime

Discussed Business Problem:

1. Designing an event management system that will help students keep track of all the events that are organized by various clubs or committees at Northeastern University.
2. Create a centralized system that will maintain the data of events organized by clubs or committees so that students may get to know about the events that will be occurring on the university campus.
3. This system will also enable students to register for any event they are interested in participating in.
4. Ensure that the results of the competition-based events can be accessed from the database.
5. Additionally, keeping a systematic record of many factors, such as the number of students participating, the number of events scheduled, the timeline of the events, etc., can assist the university in planning future events utilizing this information.

Entities Present:

1. College
2. Student Club
3. Member
4. Venue
5. Events
6. Sponsors
7. Tickets
8. Students
9. Judge
10. CompetitionEvents
11. SponsoredBy
12. StudentEvents
13. ClubEvents
14. Payments
15. Payment Type
16. Participants
17. Equipment

Relations between the entities:

1. A College consists of one or many Student Clubs and Student Clubs belong to one College.
2. Student Clubs can organize many Events, while an Event can be organized by one or many Student Clubs.
3. Events can be held on one Venue, or it can take place online, while the Venue can host 0 or many Events.
4. Events can have 0 or many Sponsors, while Event can be sponsored by 1 or many sponsors.
5. Events require 0 or many Equipments. Equipments may or may not be required in an Event.
6. Students can attend 0 or many Events. Events should be attended by one or many students.
7. Student may or may not purchase any Tickets, while a Ticket should be purchased by atmost one Student.
8. Events has one or many Tickets.
9. Events comprises of 0 or many Competitions.
10. Judge judges one or many Competitions. A Competition is judged by one or many Judges.
11. Competition has many Participants.
12. Students participates in Competitions.
13. Students are Admins and an Admin manages a Student Club.
14. Payments are required to be made for buying Tickets and Payments have Payment Type.

Key Design:

1. Student clubs in colleges organize various events.
2. Organized events require equipment that is availed from the college or outsourced.
3. Most of the events organized need a venue (location). If an event is online, it doesn't require any location.
4. To attend an event, students need to purchase tickets. To purchase tickets, the student will be redirected to the payment gateway where he/she will get options to choose payment types (Debit/Credit/Cash).
5. There can be competitions in an event in which students can participate.
6. Participants are judged by judges based on their performances.
7. Events can be sponsored, or they may not be sponsored, depending on the category of the event.
8. In a competition, there will be a judge who decides the winner based on the performance of the participants.

Changes made:

1. Created associative entity ClubEvents to connect Student Club entity and Events entity. ClubEvents consists of ClubID, StudentID as composite primary key.
2. Created associative entity SponsoredBy to connect Events entity and Sponsors entity. SponsorID, EventID are composite primary key.
3. Replaced Admin entity with Member entity.
4. Created associative entity Member to connect Students and StudentClub entities. MemberID is primary key and ClubID , StudentID are foreign keys. Added attributes MemberName, MembershipStartDate, MembershipEndDate and isAdmin.
5. Created associative entity CompetitionEvents to connect Competition, Judge, Participates and Events entities. CompetitionEventID is the primary key and added attributes StartDate and EndDate.
6. Created associative entity StudentEvents to connect Events and Students entities. EventsID and StudentsID are composite primary key.