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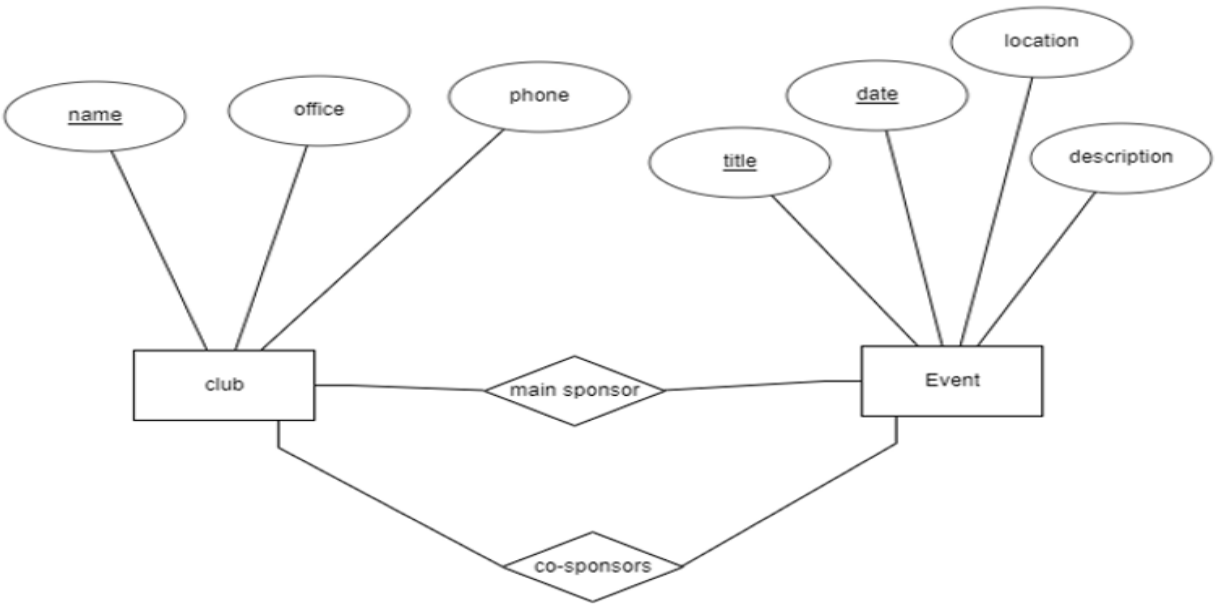
Week -5 Video Activity

Activity 9.1 – Create an ER Diagram

- **Club has a name, office and phone: it is uniquely identified by its name**
- **club sponsor events. Each event has one main sponsor and may have co-sponsors**
- **An event has a title,date, location and description: it is uniquely identified by the title and date.**

Draw the Entity-Relationship Diagram (ERD), you may add relationships, but do NOT add relationship cardinalities at this time.

Answer

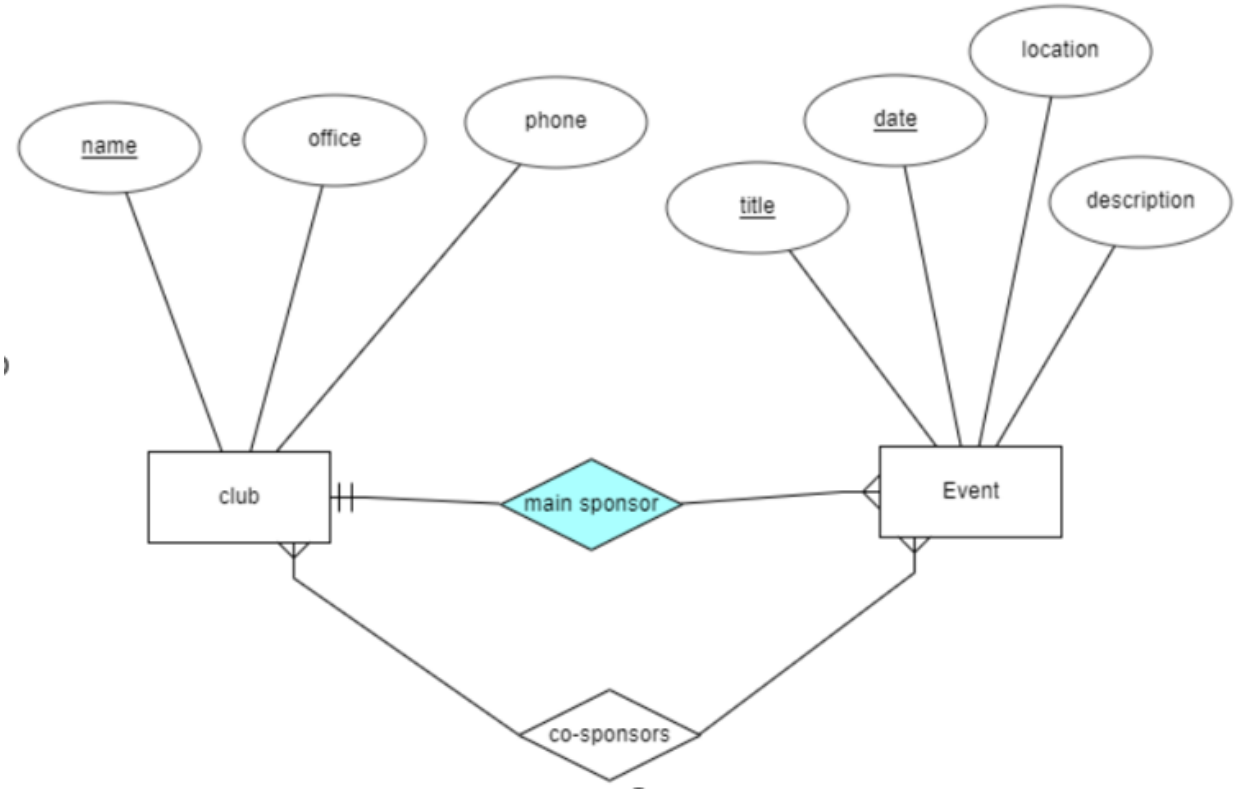


Note: Main and co-sponsor are separate relationships. It will help represent the fact that an event can have **at most one main sponsor, but many co-sponsor**

Activity 9.2– Add Cardinalities

Add relationship cardinalities to the ER Diagram that you created in Activity 9.1.

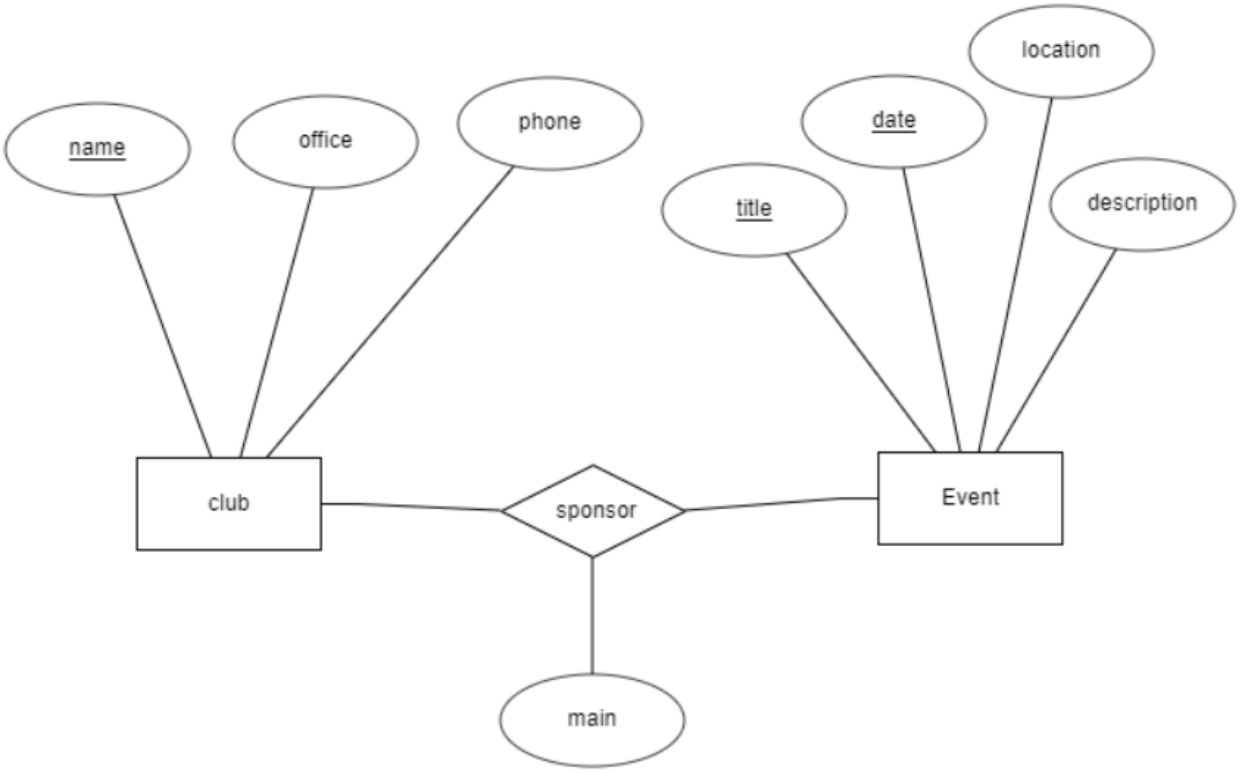
Answer



Activity 9.3– Main sponsor as an attribute?

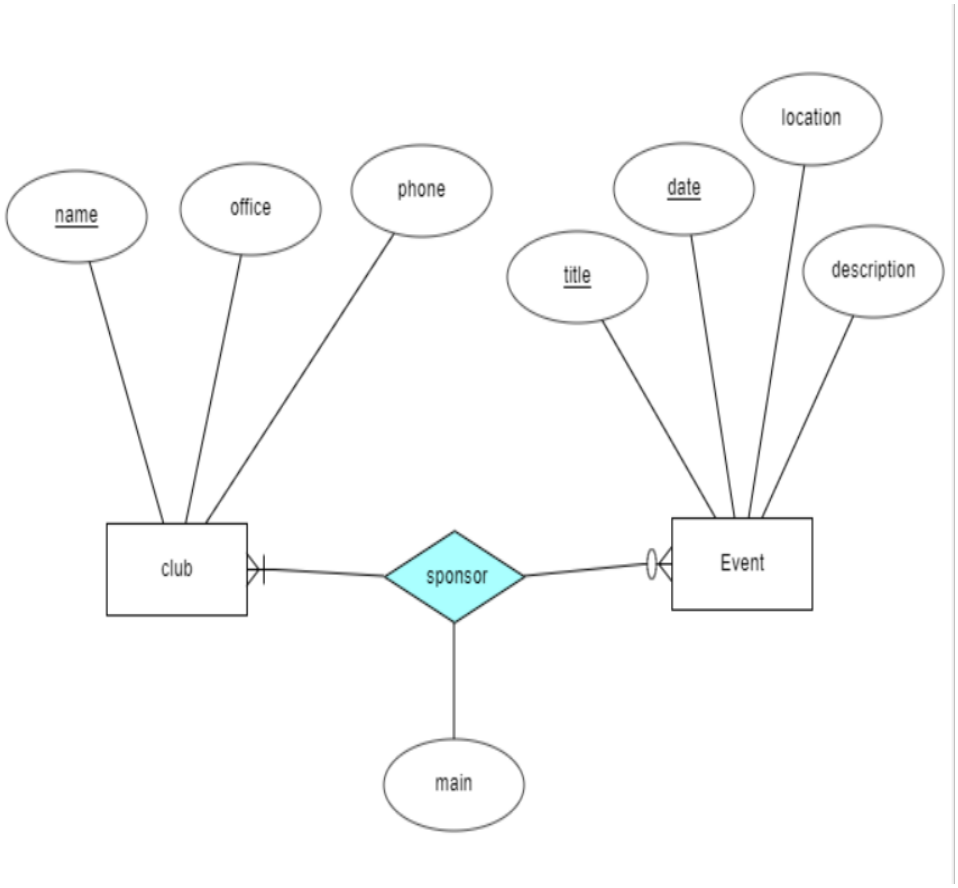
The ER Diagram below shows a sponsor relationship, with Main as an attribute of Sponsor. In this model, Main would be a boolean – yes if the sponsor was the main sponsor and no if the sponsor was a co-sponsor.

In this model, what would you pick for cardinalities? And what issues do you see?



Answer

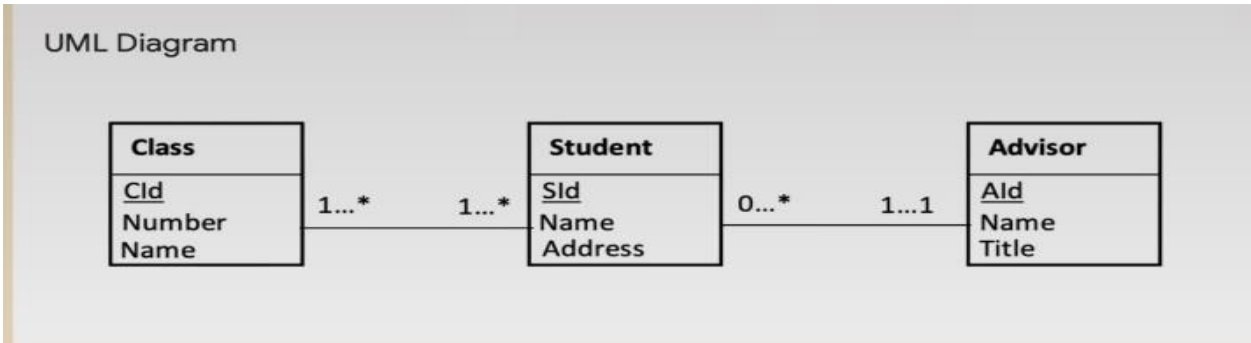
Since each event can have one or more sponsors and a club can sponsor zero or more events, the sponsor relationship must be many to many as shown below



This model does not capture the criteria that an event can have at most one main sponsor. Modelling as two relationships – one for Main Sponsor and one for Co-Sponsors does capture that criteria.

Activity 10.1– ER Diagram -> Relations

Convert the UML diagram below to a set of relations



Answer

Class (CId, Number, Name)

Student (SId, Name, Address, advisorid)

Advisor (Aid, Name, Title)

IsTaking (CId, SId)

Class to Student is a many-to-many relationship. Student to advisor is a one-to-many relationship.

CId is the key for Class

SId is the key for Student

Aid is the key for Advisor

(CId, SId) is the key for IsTaking

Student.advisorid is the foreign key that references Advisor.Aid

IsTaking.CId is a foreign key that references Class.CId

IsTaking.SId is a foreign key that references Student.SId

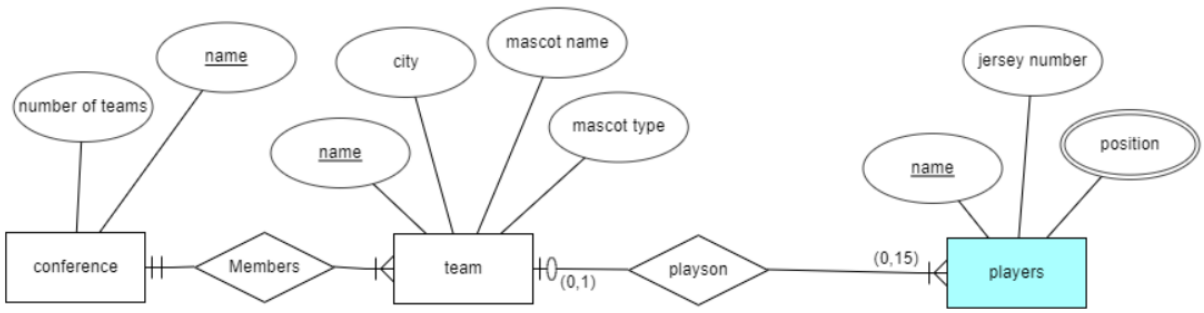
Activity 10.2– Spec -> ER Diagram -> Relations

Given the specifications below:

- A sports league is the topic for this example (based on the NBA) - you can translate to a topic you prefer - many topics have this structure
- In our league, there are: conferences, team, players and mascots
- A conference has a name and a number of teams
- A team has a name, a city and a mascot
- A mascot has a name and a type
- A player has a name and at least one position and a jersey number
- A conference must have at least one team
- A team must be in exactly one conference
- A player can be on 0 or 1 teams
- A team can have at most 15 players (we haven't discussed this yet)

1. **Draw the Entity- Relationship Diagram include entities, relationships and cardinalities. Use one weak entity and one multi-valued attribute.**

   Answer



2. **Translate your ER diagram into relations**

   Answer

   Conference (name, number of teams)

   team (name, city, mascot name, mascot type)

   players (name, position[], jersey number, Tname)

MembersOf (Cname, Tname)

players.Tname is a foreign key that references team.name

MembersOf.Cname is a foreign key that references Conference.name

MembersOf.Tname is a foreign key that references team.name