Database Design Project: Partnership Management System

Project Description:

You are tasked with designing an Entity-Relationship (ER) database for a partnership management system used by a university, faculty, or research lab. The system manages partners that can be either organizations (companies, universities, government agencies, NGOs) or individual persons (lecturers, experts, alumni, sponsors).
Each partner may be linked to multiple units such as the whole university, a specific faculty, or a particular research lab. For each partner, the system must manage key contact points, formal agreements (MoUs, contracts), specific collaboration events (seminars, workshops, competitions, research projects), contributions (cash and in-kind), invoices and payments, and feedback after collaboration events.

Requirements:

The Partnership Management System must support at least the following requirements:

1. Partners:
- Each partner has a unique ID, name, type (person or organization), status (prospect, active, inactive) and basic information such as website or tax code (for organizations).
- A partner may have optional descriptive attributes such as industry / sector or notes.

2. Organizational Units and Affiliations:
- The university structure includes different scopes such as school/university, faculty, and lab or center.
- A partner can be affiliated with one or more organizational units (e.g., a company that is a partner of the university and also of a specific faculty or lab).
- The system must store since-when the affiliation started and may store remarks about the relationship.

3. Contact Points:
- Each partner can have one or more contact points (persons) with name, email, phone, position/title.
- One contact point can be marked as the primary contact for that partner.
- The system must support both organization-level contacts (e.g., Partnership Manager at a company) and contacts for individual partners (e.g., an independent expert).

4. Agreements and Documents:
- The system manages formal documents such as Memoranda of Understanding (MoUs), contracts, and letters of intent (LoI).
- Each agreement is related to exactly one partner, and has attributes such as title, type, start date, end date, status (draft, signed, expired, terminated), and a reference to a file location or link.

5. Collaboration Events:
- Partners may participate in multiple collaboration events such as seminars, workshops, competitions, hackathons, guest lectures, and joint research activities.
- Each collaboration event has a title, type, location, time window (start and end), and should be linked to exactly one primary partner (additional partners can be considered in an extended model).
- The system must record the number of students or staff involved, or a short description of the scope (e.g., number of participants).

6. Contributions and Sponsorship:

- Partners may provide contributions that can be either cash (money) or in-kind (equipment, services, prizes).
- Each contribution is related to exactly one partner and may optionally be linked to a specific collaboration event.
- For each contribution, the system stores its type, description, estimated monetary value, date, and any relevant notes.

7. Billing and Invoicing:
- For certain collaboration events or services, the university may issue invoices to partners (e.g., participation fees or service charges).
- Each invoice is related to exactly one collaboration event, has an issue date, amount, status (unpaid, paid, cancelled) and reference number.
- Payments are recorded against invoices, with date, payment method (cash, bank transfer, e-wallet), amount and payment reference.

8. Feedback and Evaluation:
- After each collaboration event, internal units (e.g., faculty or lab) may provide qualitative feedback and a numerical rating about how well the collaboration went.
- Each feedback entry is linked to exactly one collaboration event and stores the rater (e.g., name of unit), rating (e.g., 1–5), comments, and date.
- The final rating for a partner over time can be derived by aggregating feedback across events.

Task:

You are required to design an ER diagram that meets the above requirements. Your design should include
entities for partners, organizational units/affiliations, contact points, agreements, collaboration events, contributions, invoices, payments, and feedback.
You must clearly show:
- Entities and their key attributes (including keys, types, and important descriptive attributes).
- Relationships representing how partners are affiliated with different units, how contact points connect to partners, how agreements and events are linked, and how contributions, invoices, payments, and feedback relate to partners and events.
- Cardinalities specifying how many instances of each entity can relate to others
(for example: one partner can be linked to many collaboration events, one event can generate many invoices).
You may introduce additional entities or attributes if needed, as long as they are consistent with the description.

Deliverables:

You must submit the following items for your team project:

• A complete ER diagram illustrating the partnership management system structure, including partners, affiliations, agreements, collaboration events, contributions, invoices/payments, and feedback.

• A brief explanation (1–2 pages) of the design decisions made for entities, attributes, relationships, and cardinalities.

• A DDL file to create the database in MySQL.

• A SQL file to insert test data into MySQL. There should be at least:
- 10 partners (including both persons and organizations),
- 5 organizational units (e.g., different faculties or labs),
- 10 collaboration events,
- 10 contributions,
- 10 invoices with related payments,
- and multiple feedback records for different events.

• ALL FILES MUST BE NAMED AS FOLLOWS: TEAM#_FILE_TYPE.SQL (and similar for other formats)
For example:
- Team 5: 5_DDL.SQL ; 5_INSERT.SQL ; 5_DIAGRAM.PNG ; 5_EXPLAIN.PDF
• Prepare to explain (all members) your design and answer SQL queries based on your team project during the project presentation or demo session.