Relational Model for a Construction Company

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A relational model for a construction company requires identifying the key entities, their attributes, and the relationships between them. Before designing the model, certain business-related questions must be considered to determine entity relationships and cardinalities.

Key Design Considerations

1. Can a single client request multiple projects simultaneously?
2. What is the relationship between employees and projects? How are managers assigned to projects?
3. How is contract payment decided—fixed cost, time-based, or milestone-based?
4. Are suppliers local or distributed across regions? Is transportation managed by the company?
5. How are closely related projects handled (same client, same location, or shared resources)?

These questions help define the entities, relationships, and constraints in the database. Based on the answers, appropriate relationship cardinalities such as one-to-one, one-to-many, or many-to-many can be determined.

Core Entities

The major entities involved in a construction company database include:

- Client
- Project
- Employee
- Manager
- Supplier
- Material
- Contract

ER Diagram

The ER diagram below represents the basic structure of the relational model. Apart from the **Supplier** and **Material** entities, this design can be applied to most contract-based organizations.

Conclusion

This relational model efficiently captures the operational structure of a construction company. It supports multiple projects per client, structured employee management, supplier coordination, and flexible contract handling. The model can be extended further based on additional business requirements.

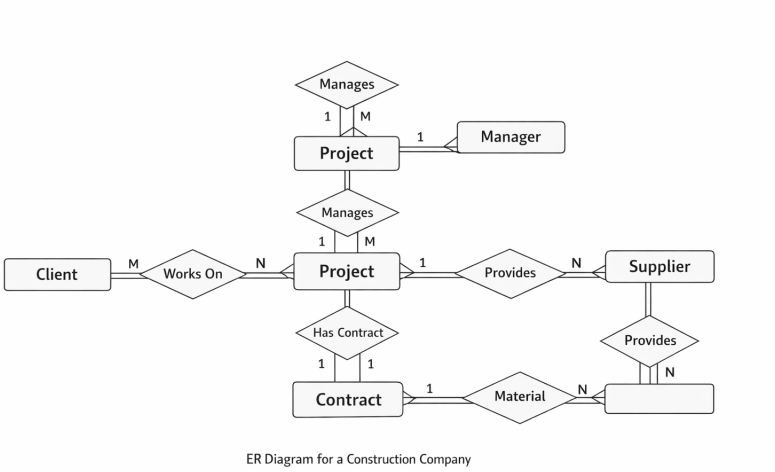

Figure 1: ER Diagram for the Construction Company