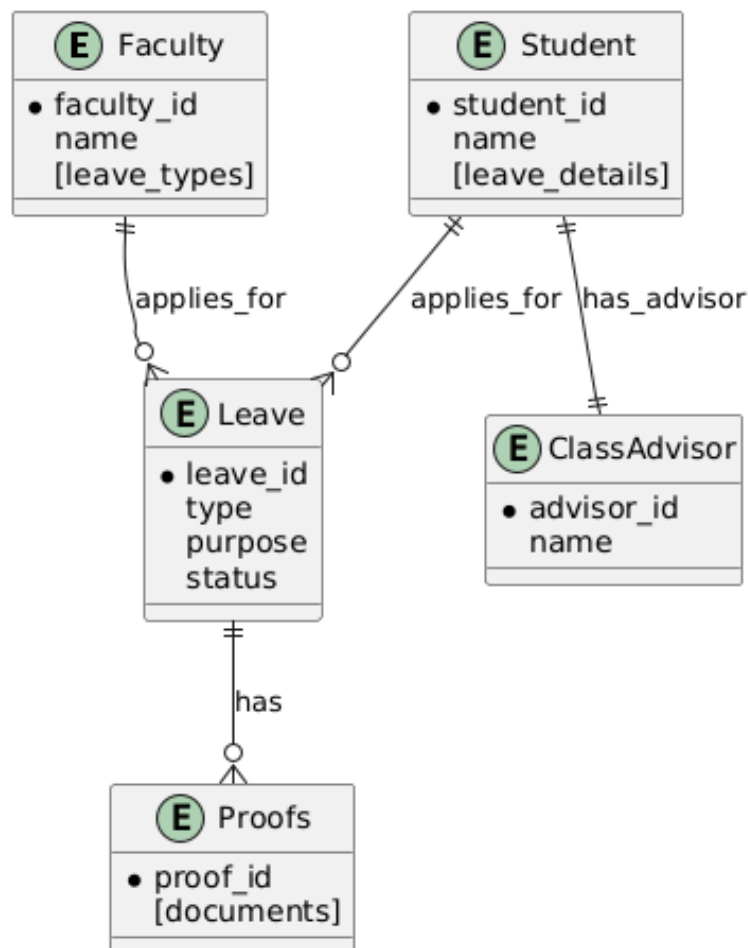


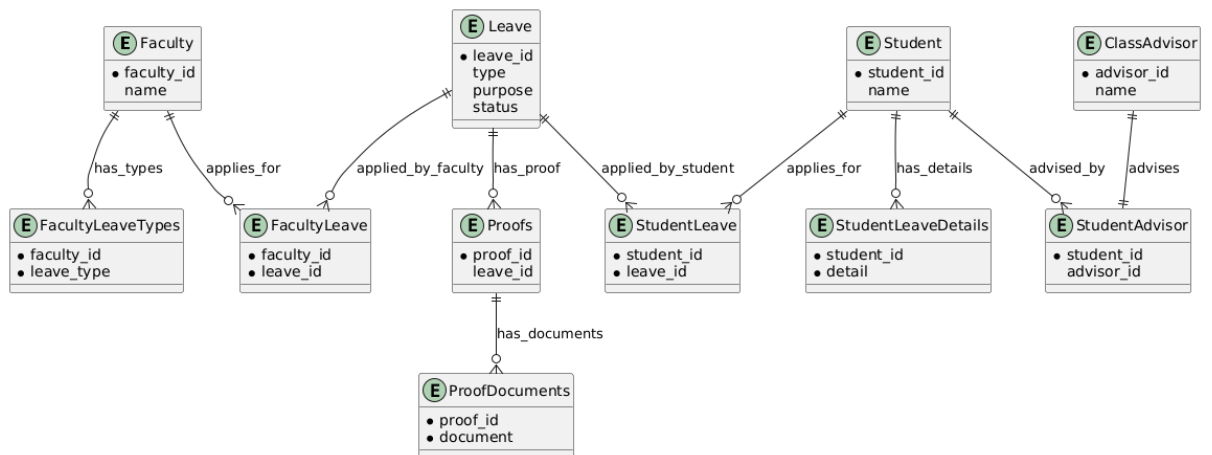
Sample ER and Relational mappings

1. The leave details (considering different types of leave) of the faculty must be available. The faculty must be able to take any type of leave (casual, medical, sabbatical, maternity) as per the rules and this must be updated in the leave records. Students can also apply for leave (including duty leave), enter leave details and forwarded to class advisor for approval. The leave can also be extended on special request. The application for a type of leave can include the purpose of taking leave like official (attending the conferences/workshops etc) or personal (marriages). This application can be approved on the basis of different criteria including uploading proofs like conference brochure, certificates etc

ER diagram

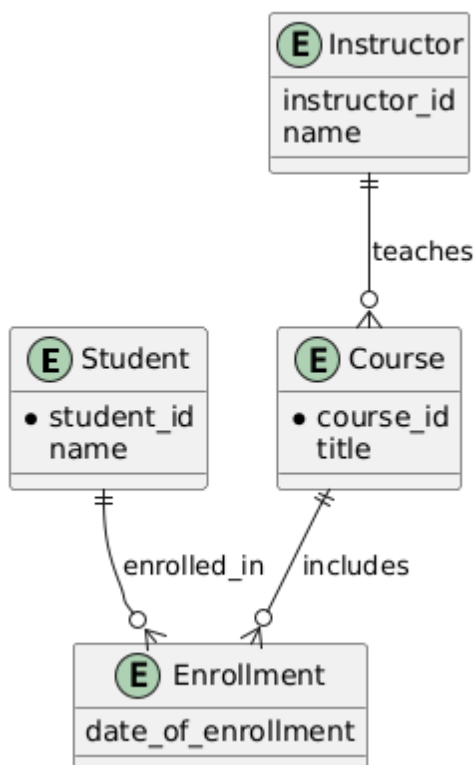


Relational Schema

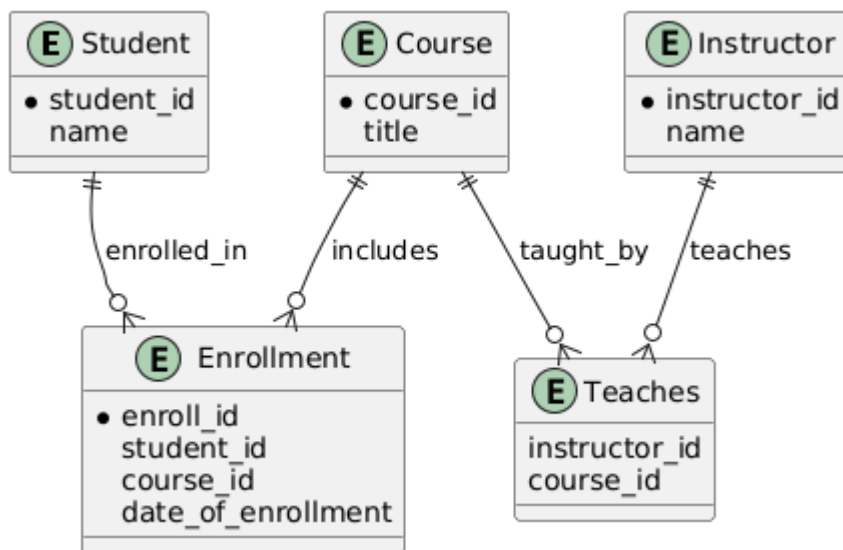


2. A college tracks details of students, courses, and instructors. Each student has a student ID, name, and batch. Each course has a course ID, title, and credits. Instructors are identified by instructor ID and name. Each instructor can teach multiple courses. Each student can enroll in multiple courses, and the date of enrollment is recorded. The instructor assigned to a course is also recorded.

ER diagram

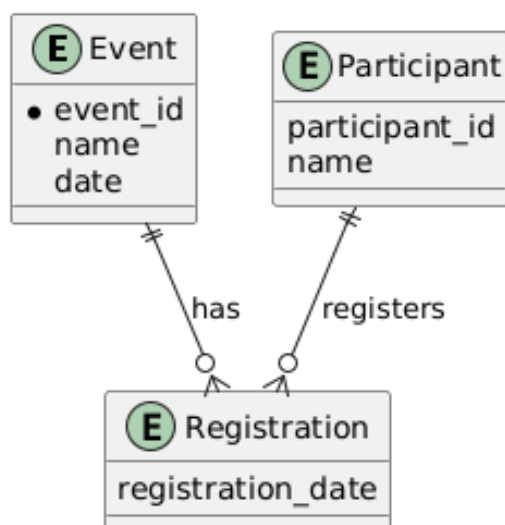


Relational Schema

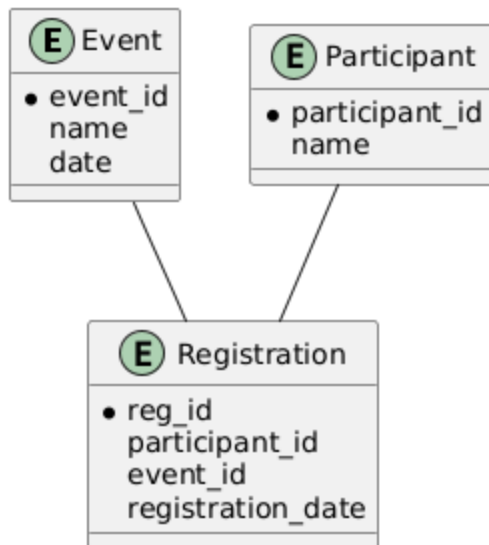


3. An event management system maintains information about events and the participants. Each event has a unique event ID, name, date, and location. Participants have a participant ID, name, and contact number. A participant can register for multiple events, and the registration date is recorded.

ER diagram

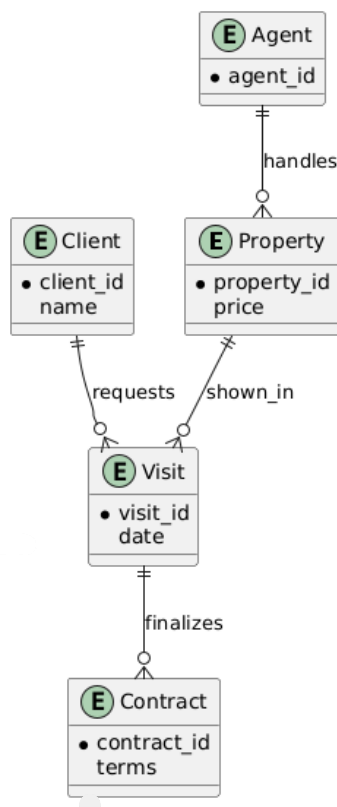


Relational Schema

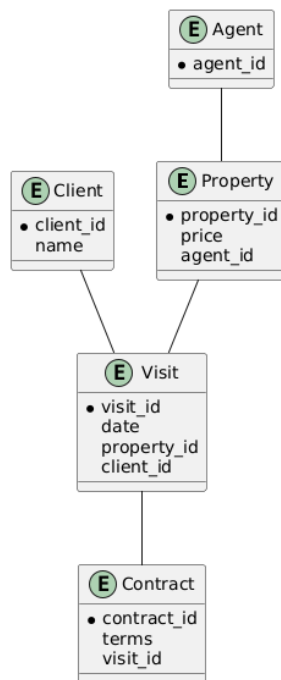


4. A real estate system keeps track of properties, agents, clients, visits, and contracts. Properties have ID, address (street, city), and price. Agents have ID and [languages_spoken]. Clients have ID and name. Visits include date and purpose. Contracts have terms and signing date.

ER diagram

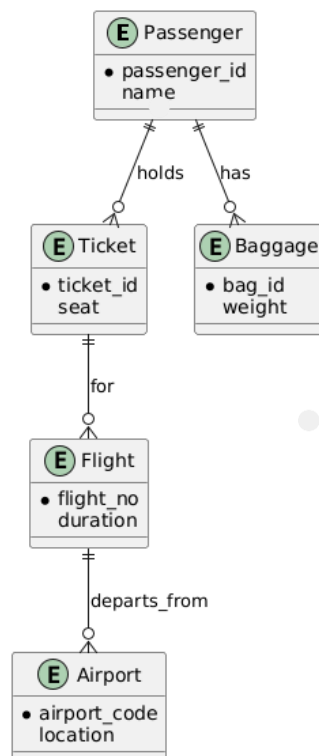


Relational Schema

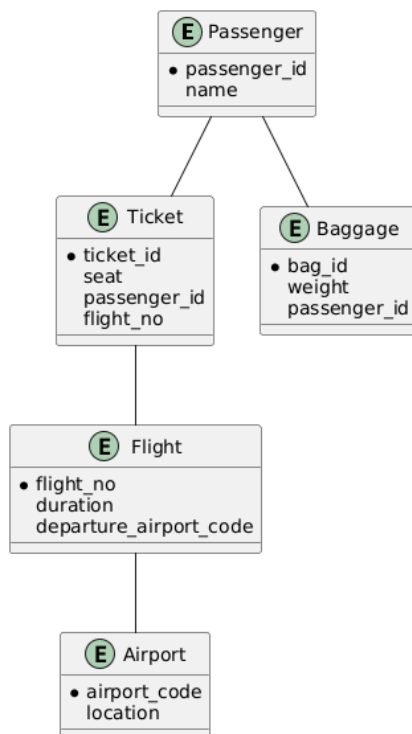


5. An airline maintains data about passengers, flights, tickets, airports, and baggage. Passengers have ID, name, and [contacts]. Flights include flight number and duration. Tickets include seat and class. Airports have code and location. Baggage is weak under passenger.

ER diagram

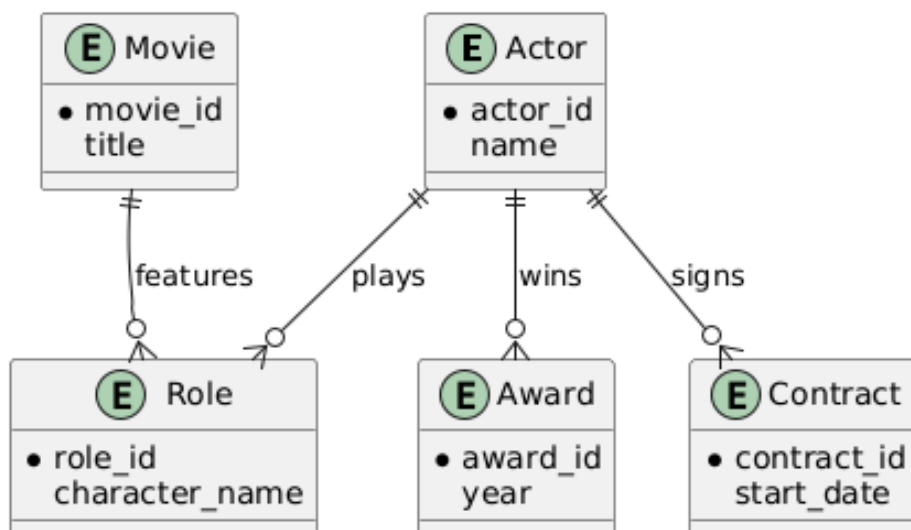


Relational Schema

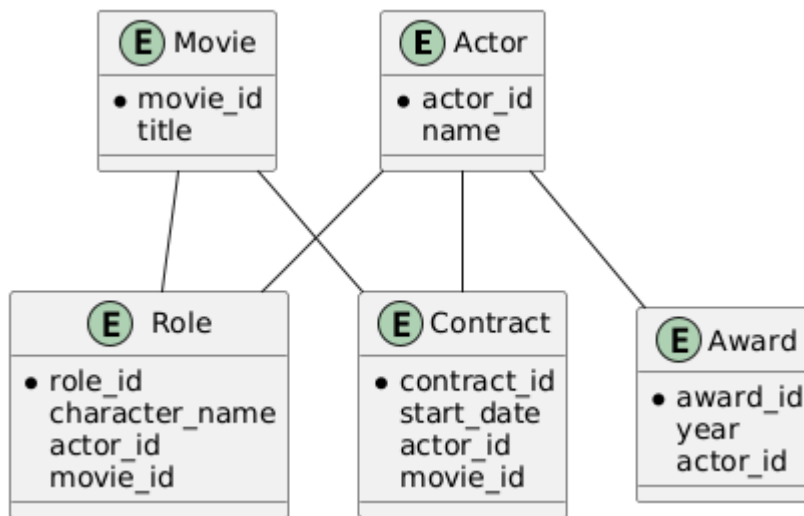


6. A talent agency manages actors, movies, contracts, roles, and awards. Each actor has ID, name, and [languages_known]. Movies have title and genre. Contracts have start and end dates. Roles include character name. Awards have name and year.

ER diagram

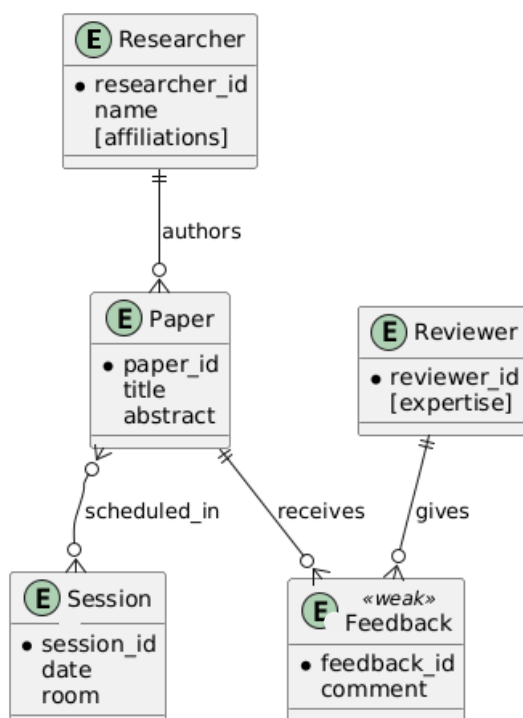


Relational Schema

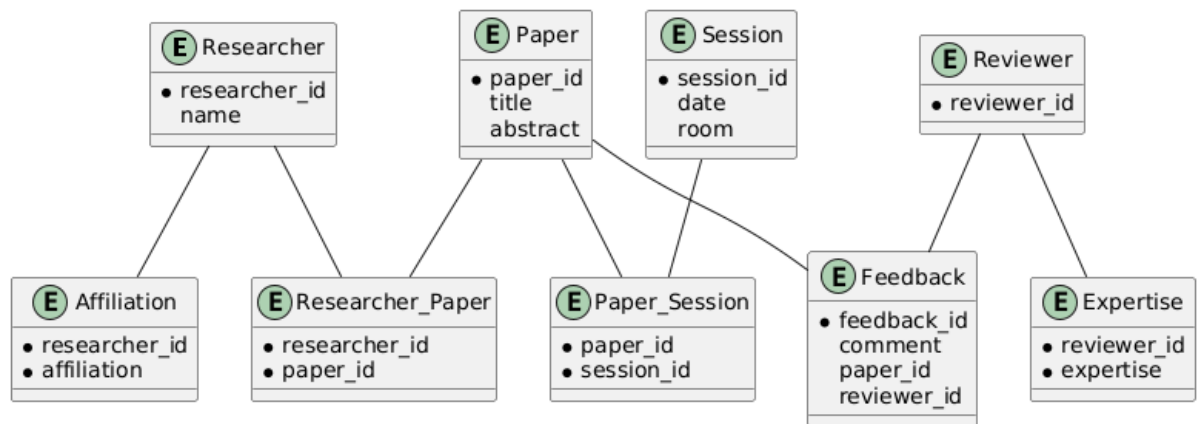


7. In a Conference Management System, Each Researcher has a unique researcher_id, name, and multiple affiliations (e.g., universities or research institutes). Papers are identified by paper_id, and have a title and an abstract. Each paper can be authored by multiple researchers, and each researcher can author multiple papers. Reviewers have a unique reviewer_id and multiple areas of expertise. A Session is scheduled with a unique session_id, and includes a date and a room. Each session may feature multiple papers, and each paper may be scheduled in multiple sessions (e.g., in different tracks). Feedback is identified by feedback_id, with a comment, and is provided by a reviewer.

ER diagram

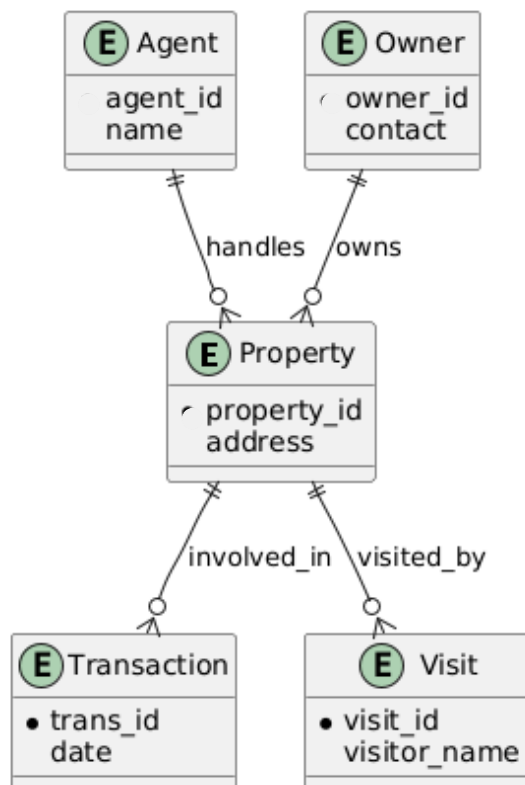


Relational Schema

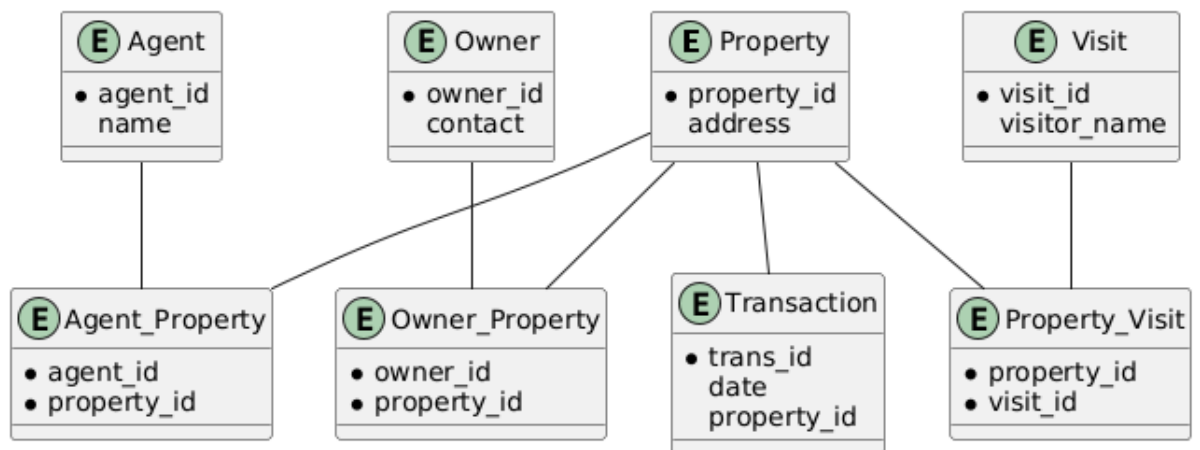


8. A real estate company manages properties, agents, owners, transactions, and visits. Each property has ID, address, and [features]. Agents have ID and name. Owners have ID and contact. Transactions include date and price. Visits are weak under property.

ER diagram

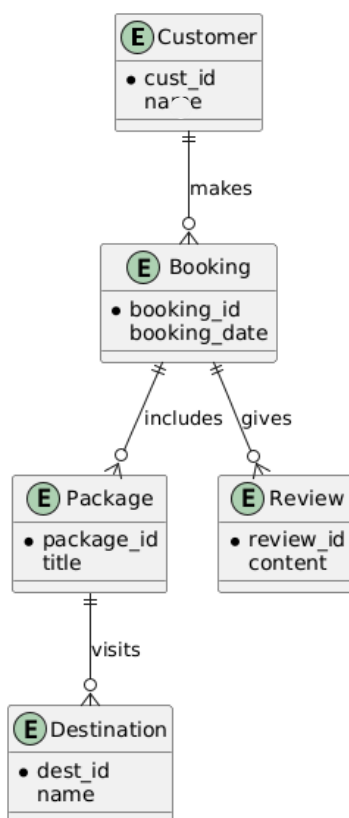


Relational Schema

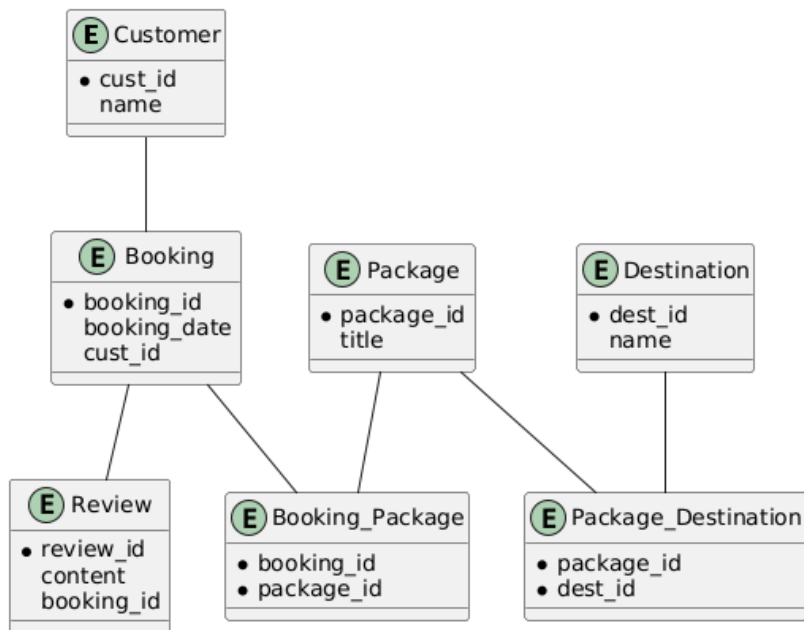


9. A travel agency records customers, bookings, packages, destinations, and reviews. Customers have ID, name, and contact_info. Bookings have booking date and amount. Packages include title and duration. Destinations have name and highlights. Reviews are weak entities under bookings.

ER diagram

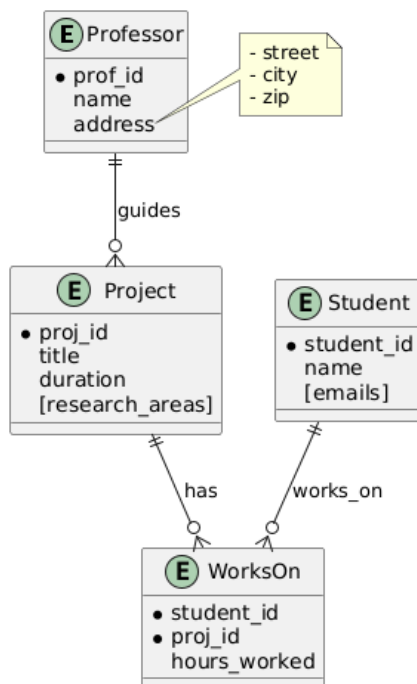


Relational Schema



10. A university department manages research projects and keeps track of professors, projects, and their students involved in those projects. Each professor has a `prof_id`, name, and a composite attribute: address (with street, city, and zip). A project has a `proj_id`, title, and duration, and can have multiple areas of focus (\rightarrow multivalued attribute `research_areas`). A professor can guide multiple projects, but each project is guided by one professor. Each student has `student_id`, name, and multiple emails (\rightarrow multivalued attribute). A student can work on multiple projects, and a project can have multiple students. Their contribution to a project is tracked with hours worked.

ER diagram



Relational mapping

