

Sample Scenarios for ERD

Draw ERD and transform the ERD into relation schema for the following questions:

Q. 1: A **person** is described by id, name as first name, middle name, last name, multiple **qualifications** and multiple **trainings**, **present address** (street no, street name, city) and **permanent address** (street no, street name, city).

Q. 2: There are many teachers in the university. **Teacher** has Id, name, salary. Among the teachers, **Head of the department** is appointed for a certain period of time (start date and end date). **A teacher may be appointed Head many times**. In different times, different teachers are appointed as Head.

Q3: **A club can have many players** and **a player can join only one club** for a period of time with a start date and end date. After completion of period, the player can join another club. A **club** has id, name and date of establishment. A **Player** has id, p-name and date of birth.

Q.4: **A teacher can teach many courses** and **a course is taught by exactly one teacher**. A **teacher** has id, name and degree. A **course** has course-id, title and credit.

Q.5: There are many football teams participated in world cup 2018. A **team** has id and country. A team plays with another team in a particular date and a title of the play e.g., round 1, semi-final etc.

Q6. Many to Many relationship with descriptive attributes:

A teacher can teach many courses and **a course can be taught by many teachers**. A **course** has course_id, title and credit_hour and a **teacher** has T_id, name, designation salary. You have to record the semester and year of teaching of these courses by the teachers.

Draw the ERD and transform the ERD into relation schema.

Q7: One to many or Many to one relationship

A mother can have many children and **a child must have only one mother**. A **mother** has NID, name, street, city. A **child** have birth registration number (BRN), date of birth, height and weight.

Draw the ERD and transform the ERD into relation schema.

Q8: One to one relationship

An apartment can be owned by exactly one person and a person can own maximum one apartment. There are many persons having no apartment. A person has NID, name, date of birth, street, city and income. An apartment has app_id, size, app_name, floor_number, location and price.

Draw the ERD and transform the ERD into relation schema.

Q9: Total and partial participation

An instructor can advise many students but a student must have exactly one adviser. An instructor has id, name, dept_name and salary. A student has id, name, street, city, CGPA and tot_credit.

Draw ERD showing total and partial participation and transform the ERD into relation schema.

Q10: ERD with complex constraints

A student can enroll a maximum of 45 courses and a minimum of 3 courses. A course can be enrolled by minimum 15 students and a maximum of 35 students. A student has id, name, street, city, CGPA and tot_credit. A course has course_id, title and credit_hour.

Draw the ERD and transform the ERD into relation schema.