**Step-1**: Identifying the Entities Required

I have to develop a Human Resource Management database for a company. It requires that you have to add some information of **departments,** **employees** and **projects** including company. As mentioned that every department has many employees and each employee work for a department and each department is leading by only one manager who is also an employee. Initially a new department need not have any employee. Here, though an employee belongs a department but they can work for different projects at the same time. Each employee can work for different job position like Developer, Programmer and front-end designer.

**Step-2:** Identifying the Attributes and Primary key for each Entity

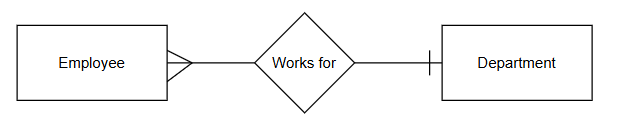
1. department (**id**, name, location, phone\_number)
2. employee (**id**, name, email, dob, address, gender, designation, salary, joining\_date, department\_id)
3. project (**id**, name, description)

**Step-3**: Identifying the Relationship needed

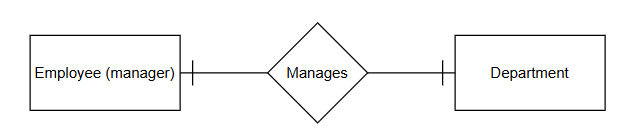
1. employee- works for- department
2. employee -manages- department
3. employee- works for-project
4. department -controls -project
5. Employee- develop- project
6. Employee-programming-project
7. Employee-design-project

**Step-4**: Identifying the Cardinality Ratio and Participation

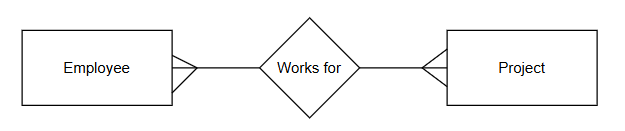
1. employee- work\_for- department



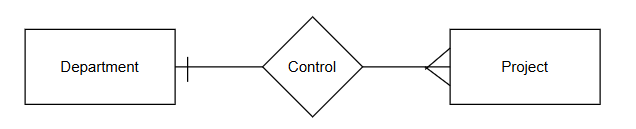
2.employee -manages- department



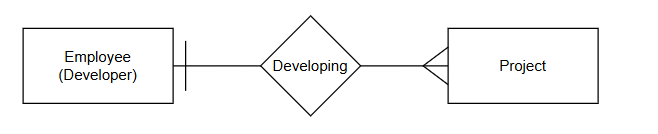
3.employee- work\_on -project



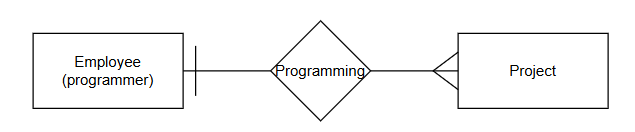
4.department -controls -project



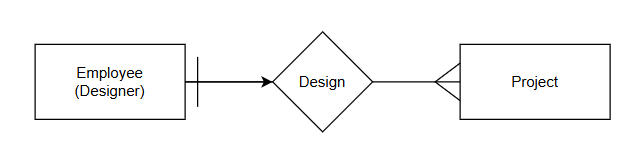
5. employee- develop- project



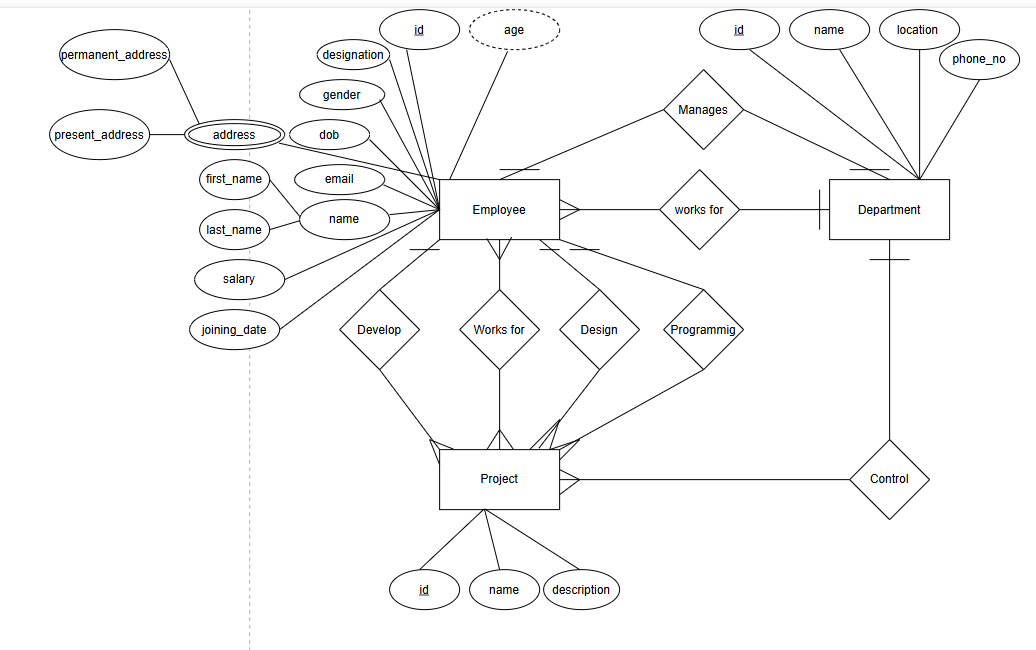
6. Employee-programming-project



8.Employee-design-project



Step-5: Draw the diagram



**Step-6**: Reduction to database schema:

1. department (**dept**\_**id**, name, location, phone\_number)
2. employee (**employee**\_**id**, name, email, dob, gender, designation, salary, joining\_date, department\_id)
3. project (**project\_id**, name, description, department\_id )
4. manager (**manager**\_**id**, employee\_id, department\_id, start\_date, end\_date)
5. developer (**developer\_id**, employee\_id, department\_id, start\_date, end\_date )
6. programmer (**programmer\_id**, employee\_id, department\_id, start\_date, end\_date)
7. designer (**designer\_id**, employee\_id, department\_id, start\_date, end\_date)
8. phone (**phone\_id**, phone\_number, employee\_id)
9. address (**address**\_**id**, employee\_id, present\_address, permanent\_address)
10. employee\_project (**project**\_**id**, project\_id, employee\_id)