CHAPTER 2

ER DIAGRAM AND RELATIONAL SCHEMA DIAGRAM

2.1 E R Diagram

An entity relationship diagram, usually referred to as an e-r diagram represents the attributes, entities and relationships in a relational schema design.

- Entity types like branches, companies, placement_departments, employee, on_campus, off_campus, annual_report are represented using rectangular boxes in the e-r diagram.
- The attributes which characterize the entities are represented in ovals, each attached to the entity type using a straight line. The attribute which is designated as the primary key is identified by underlining it within the oval.
- Relationships like has are represented in diamond boxes which are attached to the entity types participating in the relationship using straight lines.
- The total participation of the entities participating in the relationship represented inside the rhombus is identified by two straight lines from the entity type to the diamond. Whereas, the partial participation is identified by a single line.
- The cardinality ratios are as follows

1. Branch: Employee is of cardinality 1:N as each branch can have ‘n’ number of employees
2. Branch: Company is of cardinality N: 1 as a single company may have ‘n’ number of branches.
3. Company: Employee is of cardinality 1: N as each company can have single ‘n’ number of employees.
4. Placement_department: Employee is of cardinality 1: N as ‘n’ number of employees can be selected from single department.
5. Companies: Placement_department is of cardinality 1: N as single company can hire employees from various placement departments.
6. Companies: Annual_report is of cardinality 1: N as single company can have annual reports for various years.
7. Placement_department: On_campus is of cardinality 1:1
8. Placement_department: Off_campus is of cardinality 1:1

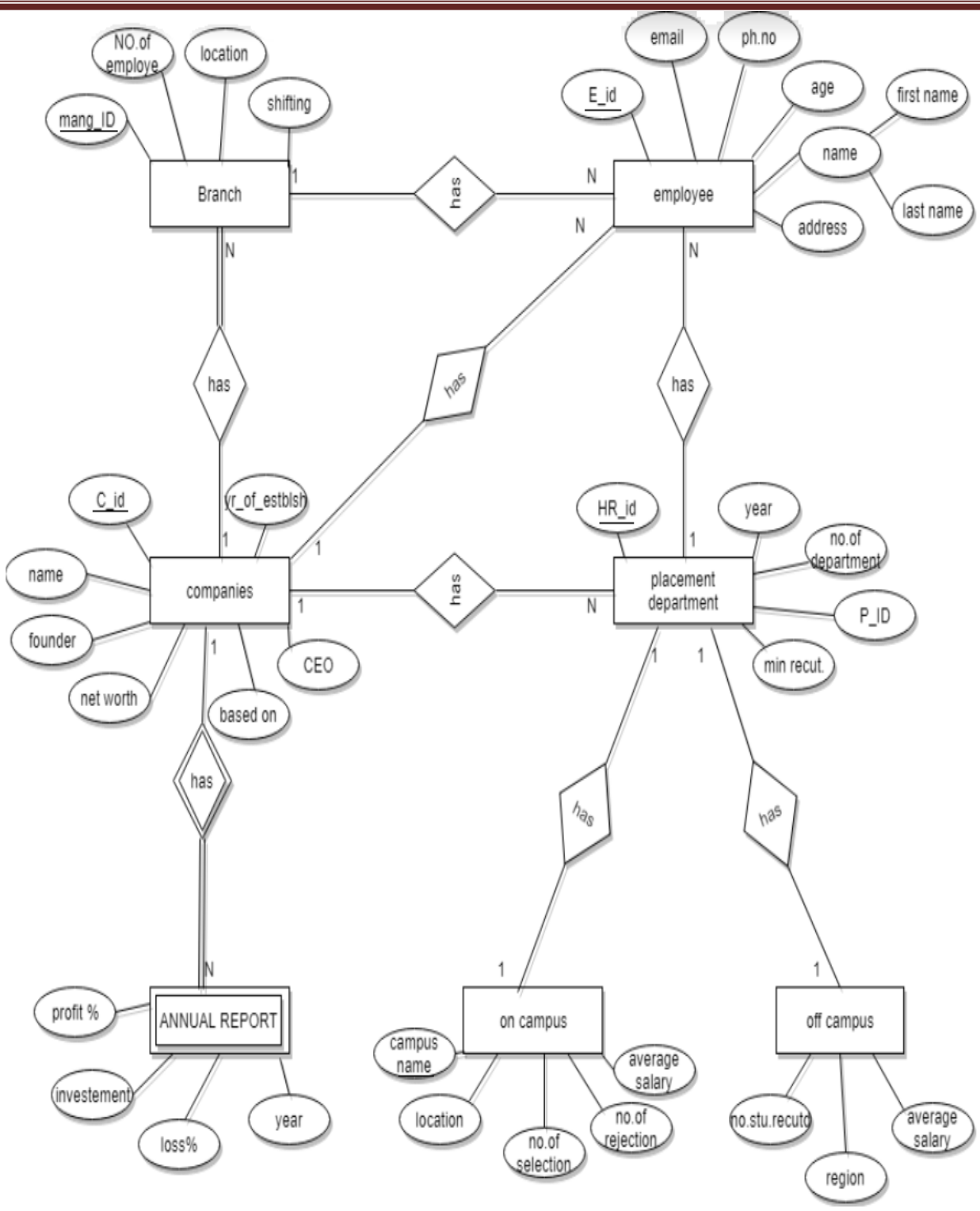

Fig2.1 ER Diagram

2.2 Relation schema diagram

The term database schema refers to the description of the database that includes the database structure and various constraints on the database.

The schema diagram is in turn an illustrative display of the database schema.

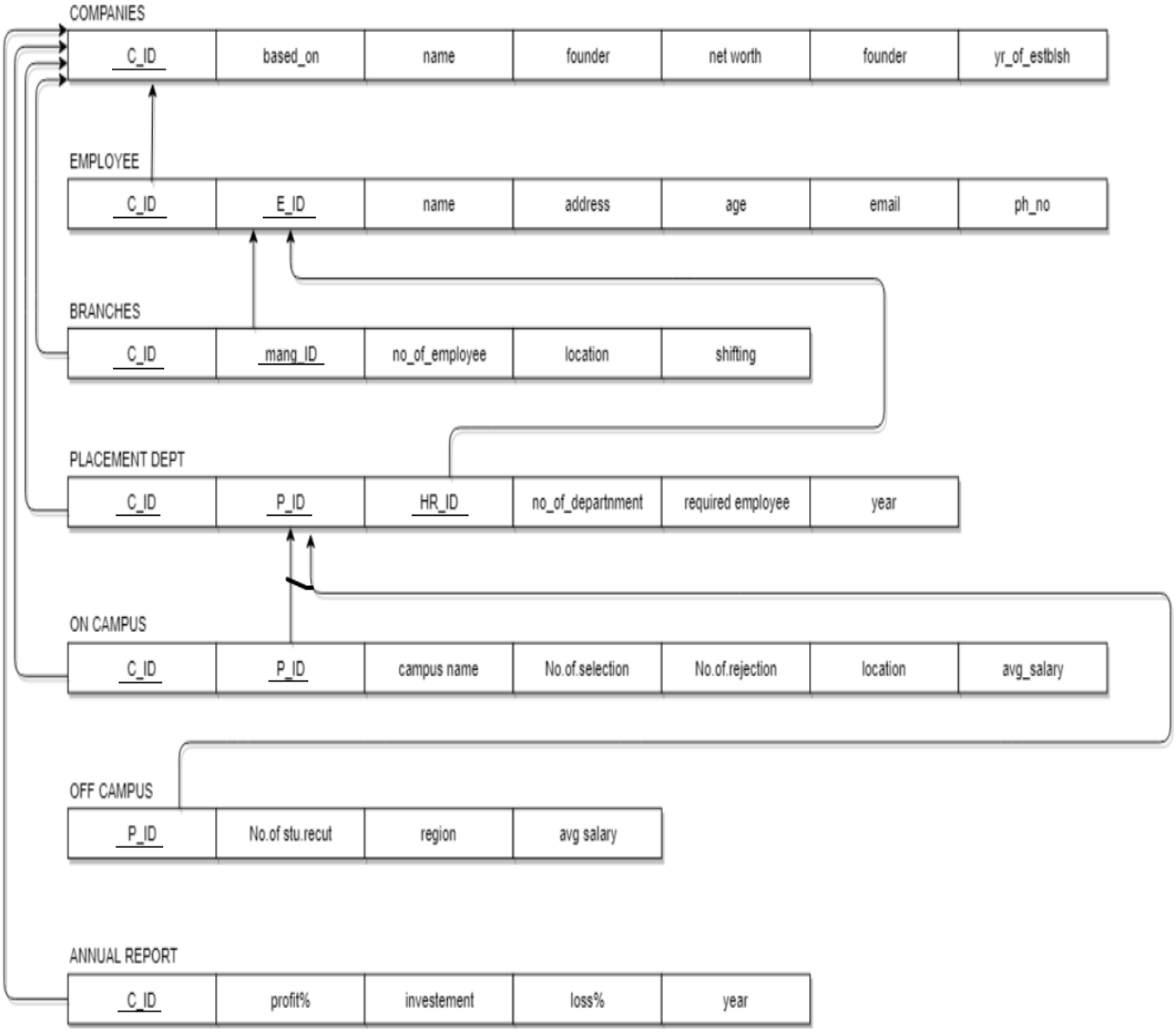

Fig 2.2 Schema diagram

The primary keys are underlined and the referential integrity constraints are depicted by arrows pointing to the keys they reference.

The list of tables are

- Companies: This table stores the information concerning the company id, name, founder and the year of establishment. The primary key is company_id
- Employee: This table stores the personal information concerning each Employee. Here company_id and employee_id are together considered as Primary key.
- Branches: This table stores the information regarding the branches of the company likemanager_id, number of employees, and the location. Here company_id and manager_idare together considered as a Primary key.
- Placement_department: This table stores the details about the placement details of the company.
- On_campus: This table stores the list of employees who are selected from the campus and their details
- Off_campus: This table stores the list of employees who are selected from other sources and their details.
- Annual_report: This table stores the annual reports of each company, the profits they had and losses they suffered.