

Experiment No: 1

Aim: Identify the case study and detail statement of problem. Design an Entity-Relationship (ER) / Extended Entity-Relationship (EER) Model.

Objective:

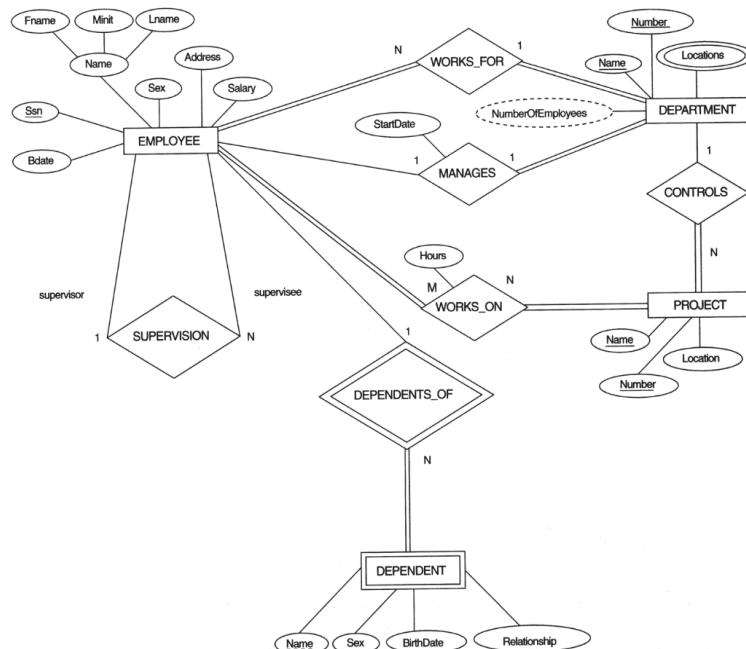
- To understand, analyze and design selected ER/EER diagram.
- Learn and practice data modeling using the entity-relationship

Theory: Case study : - Company database

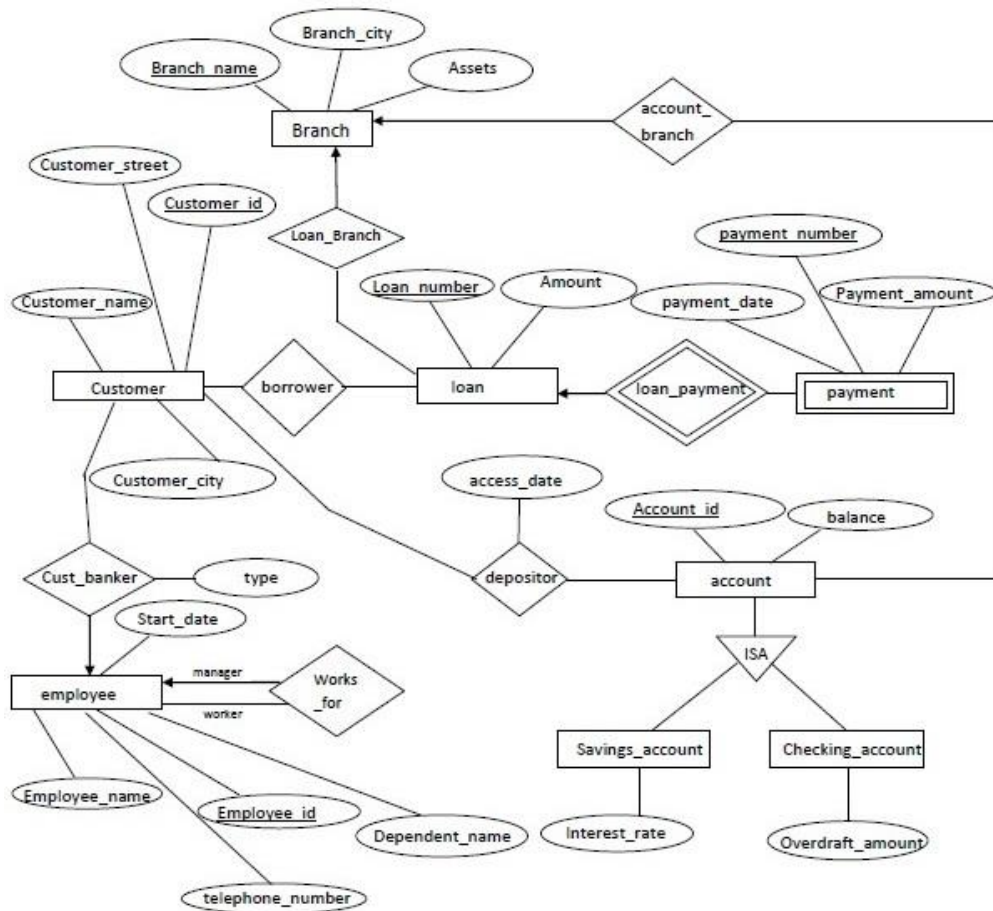
Problem Statement:-

- The company is organized into DEPARTMENTS. Each department has a name, number and an employee who *manages* the department. We keep track of the start date of the department manager.
- Each department *controls* a number of PROJECTS. Each project has a name, number and is located at a single location.
- We store each EMPLOYEE's social security number, address, salary, sex, and birthdate. Each employee *works for* one department but may *work on* several projects. We keep track of the number of hours per week that an employee currently works on each project. We also keep track of the *direct supervisor* of each employee.
- Each employee may *have* a number of DEPENDENTS. For each dependent, we keep track of their name, sex, birthdate, and relationship to employee.

ER DIAGRAM :



EER model for Banking system:-



For Students ----- Write problem statement of your case study

1. Construct ER model from the problem definition.
2. Construct EER model from the problem definition.

Conclusion:

Outcome:

Oral Questions:

1. Define DBMS and RDBMS
2. What are the applications of DBMS ?
3. What is the difference between File system and Database system ?

4. What are the notations use in ER and EER diagram ?
5. What do you mean by entity?
6. What are the different types attributes ?
7. Define strong and weak entity?
8. Specify steps to draw ER diagram
9. Define Cardinality .

Experiment No: 2

Aim: To draw ER-EER model and relational model for a given case study.

Objective :

- Learn and practice data modelling using the entity-relationship and developing database designs.
- Understand the concept of mapping of ER and EER model to relational model .

Theory:

Relational Database Design by ER- and ERR-to- Relational Mapping

ER-to-Relational Mapping Algorithm

- Step 1: Mapping of Regular Entity Types
- Step 2: Mapping of Weak Entity Types
- Step 3: Mapping of Binary 1:1 Relation Types
- Step 4: Mapping of Binary 1:N Relationship Types.
- Step 5: Mapping of Binary M:N Relationship Types.
- Step 6: Mapping of Multivalued attributes.
- Step 7: Mapping of N-ary Relationship Types.

Mapping EER Model Constructs to Relations

- Step 8: Options for Mapping Specialization or Generalization.
- Step 9: Mapping of Union Types (Categories).

Students will not write the below steps in their theory part instead they will read these 9-steps carefully and write in your own words in terms of steps how you have converted your ER/EER diagram of exp-1 into relational schema.