



# HABIB UNIVERSITY

## Database Systems

CS/CE 355/373 Fall 2023

Instructor: Maria Samad

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### E-R Diagram to Relation Schema

Student 1: \_\_\_\_\_

Student 2: \_\_\_\_\_

Following are the specifications of an E-R Diagram. Using these specifications, convert the ERD to Relation Schema

- **Strong Entity Sets:**
  - Employee: A strong entity with attributes EmployeeID (Primary Key), FirstName, LastName, and Birthdate.
    - Address: A composite attribute within the Employee entity, consisting of StreetAddress, City, State, and PostalCode.
    - Skill: A multivalued attribute within the Employee entity, representing the skills possessed by an employee. It can have multiple values, such as "Programming," "Project Management," and "Data Analysis."
  - Department: Another strong entity with attributes DepartmentID (Primary Key) and DepartmentName.
- **Weak Entity Sets:**
  - Dependent: A weak entity that depends on the Employee entity. It has attributes DependentName and Relationship (e.g., spouse, child) and a partial key EmployeeID (part of the primary key).
- **Relationship Sets:**
  - WorksIn: A relationship between the Employee and Department entities, indicating that an employee works in a department. The "WorksIn" relationship has an attribute called "StartDate."
  - HasDependent: A relationship that shows an employee having dependents. The "HasDependent" relationship connects the Employee entity to the Dependent entity.

Following are the specifications of an E-R Diagram. Using these specifications, convert the ERD to Relation Schema

- **Strong Entity Sets:**
  - Customer: A strong entity with attributes CustomerID (Primary Key), FirstName, LastName, and Email.
    - PhoneNumber: A multivalued attribute within the Customer entity, representing multiple phone numbers associated with a customer.
  - Order: Another strong entity with attributes OrderID (Primary Key), OrderDate, and TotalAmount.
    - ProductInfo: A composite attribute within the Order entity, consisting of ProductName and ProductDescription.
- **Weak Entity Sets:**
  - Address: A weak entity that depends on the Customer entity. It has attributes AddressID (Partial Key), StreetAddress, City, State, and PostalCode. The partial key is associated with CustomerID (from Customer).
- **Relationship Sets:**
  - PlacesOrder: A relationship between the Customer and Order entities, indicating that a customer places orders. The "PlacesOrder" relationship has an attribute called "OrderQuantity."
  - ShipsTo: A relationship between the Order entity and the Address entity, representing the shipping address for an order. It connects Order to Address via AddressID.

