# Ex. No: 08

Date: 07/01/2025

## Title: EER-to-ODB Mapping

## Aim:

To implement the mapping of EER to ODB using database design.

## Procedure:

### 1. Represent all entity types as object tables:

Example:  
Class: Book  
Attributes:  
 isbn : String {id}  
 title : String  
 year : Integer  
  
Mapped Table:  
 «object table» Book  
 «pkey» isbn : VARCHAR(20)  
 title : VARCHAR(250)  
 year : INTEGER

### 2. Eliminate enumeration attributes:

Use a separate enum table and link it with a foreign key.  
  
Option A: With Enum Table  
Before:  
 Person  
 personID : Integer {id}  
 name : String  
 gender : GenderEL  
  
 GenderEL = {MALE, FEMALE}  
  
After:  
 «object table» Person  
 «pkey» personID : INTEGER  
 name : VARCHAR(250)  
 gender : VARCHAR(6) ← foreign key to GenderEL  
  
 «enum table» GenderEL  
 «pkey» genderEL : VARCHAR(6)  
  
Option B: MySQL enum syntax  
gender : enum('FEMALE', 'MALE')

### 3. Eliminate multi-valued attributes:

Example:  
Before:  
 Company  
 name : String {id}  
 address : String  
 phoneNumbers[] : String  
  
After:  
 «object table» Company  
 «pkey» name : VARCHAR(20)  
 address : VARCHAR(250)  
  
 «object table» PhoneNumber  
 phoneNumber : VARCHAR(20)

### 4. Eliminate functional associations:

Replace associations with foreign keys.  
  
Example:  
Book → Publisher (1:1 relationship)  
  
Mapped:  
 «object table» Book  
 «pkey» isbn : VARCHAR(20)  
 title : VARCHAR(250)  
 year : INTEGER  
 publisher : VARCHAR(20) ← foreign key  
  
 «object table» Publisher  
 «pkey» name : VARCHAR(20)  
 address : VARCHAR(250)

### 5. Eliminate many-to-many associations:

Use an association table with two foreign keys.  
  
Example:  
Book \* ←→ \* Person (authoredBooks, authors)  
  
Mapped:  
 «object table» Book  
 «pkey» isbn : VARCHAR(20)  
 title : VARCHAR(250)  
 year : INTEGER  
 publisher : VARCHAR(20)  
  
 «object table» Person  
 «pkey» personID : INTEGER  
 name : VARCHAR(250)  
 gender : VARCHAR(6)  
  
 «association table» Authorship  
 authoredBook : VARCHAR(20) ← foreign key to Book  
 author : INTEGER ← foreign key to Person

### 6. Eliminate generalization/inheritance:

Example:  
TextBook IS-A Book  
  
Mapped:  
 «object table» Book  
 «pkey» isbn : VARCHAR(20)  
 title : VARCHAR(250)  
 year : INTEGER  
 publisher : VARCHAR(20)  
  
 «object table» TextBook  
 «pkey» isbn : VARCHAR(20) ← foreign key to Book  
 subjectArea : VARCHAR(250)

## Result:

Thus, the mapping of EER to ODB using database design has been implemented successfully.

## Marks Table:

|  |  |  |
| --- | --- | --- |
| Component | Marks | Awarded |
| Aim | 05 | 05 |
| Procedure / Algorithm | 15 | 15 |
| Execution / Output | 30 | 30 |
| Viva Voce | 10 | 07 |
| TOTAL | 60 | 57 |