

# ASSIGNMENT-1

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Course code : CSE00593

Course Name : Database Management system for  
transaction Management

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## E-learning Platform with Course Recommendations

→ create a database for an e-learning Platform to manage users, courses, quizzes

### Requirements:

Design tables for users, courses, modules, quizzes and completion tracking between courses and quizzes

Write relation between courses and quizzes

write stored procedure to calculate user progress and recommend new courses on completion history

### A) Conceptual E-R-D Model:

→ Correctly identify entities and relationships

→ Consider adding an entity for category to further normalise data

### Logical E-R-D Model:

well-defined attributes for each entity

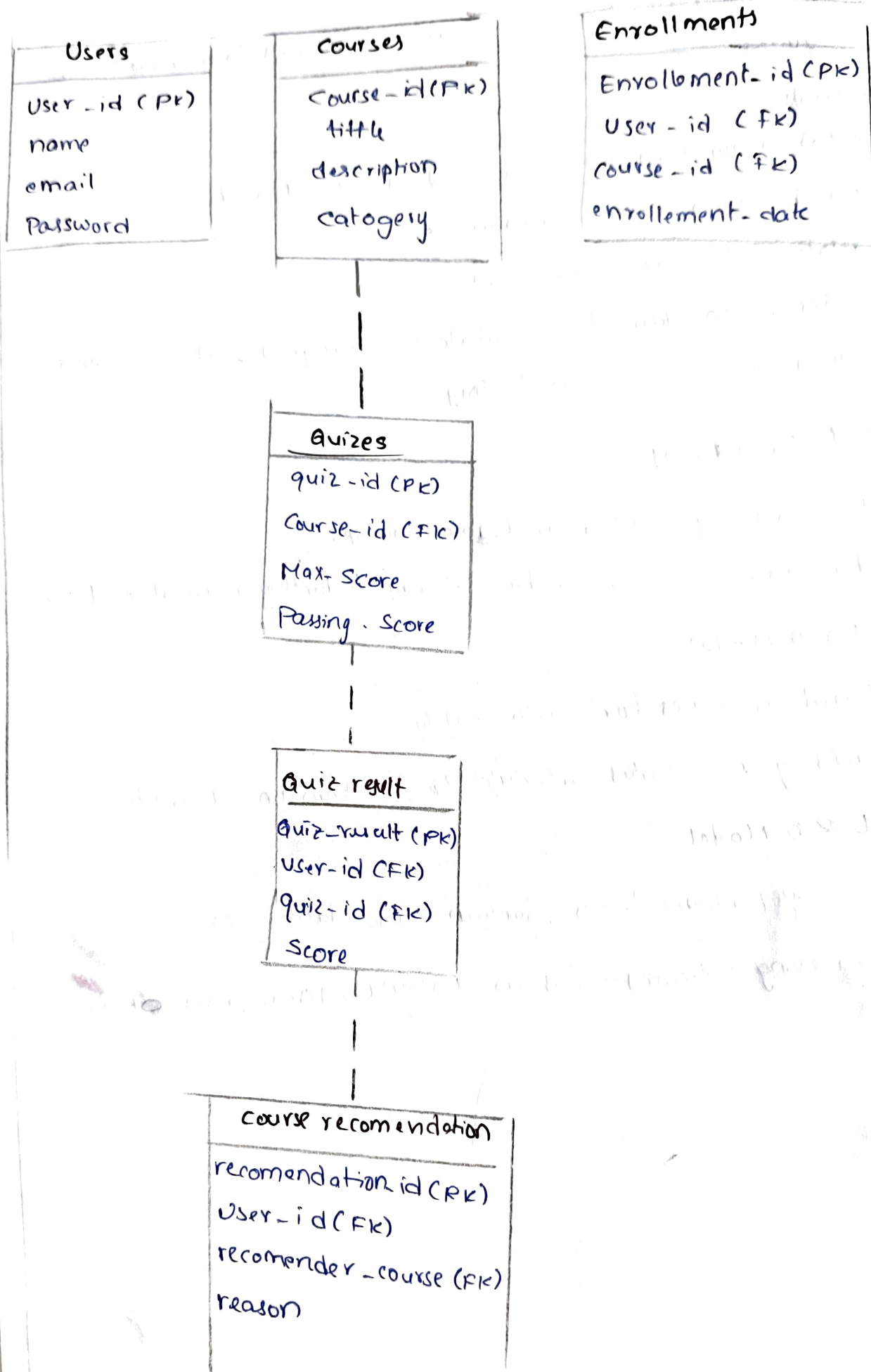
Consider adding a "status" attribute to the enrollment entity

### Physical E-R-D Model:

→ Proper use of Primary Keys, foreign keys, data types

→ Consider indexing columns used in WHERE, JOIN and ORDER BY

# Conceptual E-R Diagram:



# ER Diagram:

## Users

user-id (PK)  
name  
email  
password  
registration-date

## Courses

course-id (PK)  
title  
description  
created-at  
category

## Enrollments

enrollments-id (PK)  
user-id (FK)  
course-id (FK)  
enrollment-date

## Quizzes

quiz-id (PK)  
course-id (FK)  
question-count  
Max-Score  
passing-Score

## Quiz result

Results-id (PK)  
user-id (FK)  
quiz-id (FK)  
score  
completion-date

## course Recommendation

Recommendation-id (PK)  
user-id  
course-id (FK)  
Reason  
Recommendation-date

# Physical E-R Diagram:

Users
User-id (INT, PK)
Name (Varchar(100))
Email (Varchar(100))
Password (Varchar)

Courses
courseid (INT, PK)
Title (Varchar(100))
Description (Text)
Created-at (Date)

Enrollement
Enrollement-id (INT, PK)
User-id (INT, FK)
Course-id (INT, FK)
Enrollement-date (Date)

Quizzes
Quiz id (INT, PK)
Courseid (INT, FK)
Question count (INT)
Max. score (INT)
Passing-score (INT)

Quiz result
Quiz-result id (INT, PK)
User-id (INT, FK)
Quiz-id (INT, FK)
Score (INT)
Completion-date (Date)

Course Recommendations
Recommendation-id (INT, PK)
User-id (INT, FK)
Course-id (INT, FK)
Reason (Text)
Recommendation-date (Date)



## SQL Statements:

### Create Table Statements:

```
CREATE TABLE Users (  
  USER-ID INT PRIMARY KEY,  
  Username VARCHAR(50),  
  Email VARCHAR(100)  
  Interests TEXT  
);
```

```
Create Table Modules (  
  Module-ID INT PRIMARY KEY,  
  Course-ID INT  
  Title VARCHAR(100),  
  Content TEXT,  
  Category VARCHAR(10)  
);
```

```
CREATE TABLE Enrollments (  
  Enrollment-ID INT PRIMARY KEY,  
  USER-ID INT, Course-ID INT  
  FOREIGN KEY (USER-ID)  
  REFERENCES Users (USER-ID)  
  FOREIGN KEY (Course-ID)  
  REFERENCES Courses (Course-ID)
```

```
create table Courses (  
  course-ID (INT, Primary key)  
  Title VARCHAR(100)  
  Content TEXT,  
  Foreign key (course-ID  
  );
```

```
Create Table Quizzes (  
  Quiz-ID (INT PRIMARY KEY),  
  Course-ID INT,  
  Module-ID INT,  
  Questions TEXT  
  FOREIGN KEY (Course-ID)  
  REFERENCES Courses (Course-ID)  
  );
```

```
Create Table Completion (  
  completion ID INT PRIMARY  
  USER-ID INT, Course-ID INT  
  Module-ID INT, Quiz-ID INT  
  Completion-Date DATETIME,  
  FOREIGN KEY (USER-ID),  
  FOREIGN KEY (Course-ID)  
  FOREIGN KEY (Module-ID)  
  FOREIGN KEY (Quiz-ID)
```

## Conclusion:

∴ These SQL statements create the database for Data Analytics System for E-Commerce recommendations. By this, can improve the personalized shopping experience of every customer and also increases sales and conversion rates for merchants