

TD1

Questions:

1. Basic Concepts

Q1: What is a database?

Q2: What is a field in a table?

Q3: What is a record in a table?

2. Primary Keys

Q4: What is the purpose of a primary key in a table?

Q5: Can a table have multiple primary keys?

Q6: Give an example of when a composite primary key might be used.

3. Foreign Keys

Q7: What is the purpose of a foreign key?

Q8: Give an example of a foreign key relationship.

Q9: Can a table have more than one foreign key?

4. Practical Scenarios

Q10: Suppose you have two tables:

- Customers(CustomerID, Name, Email)
- Orders(OrderID, CustomerID, Amount)

What is the primary key and foreign key in the Orders table?

Q11: Why is it important to enforce foreign key constraints in a database?

Q12: What happens if you try to delete a row in a table that is referenced by a foreign key in another table?

5. Unique and Null Values

Q13: What is the difference between a Primary Key and a Unique constraint?

Q14: Can a primary key column have null values?

Q15: Can a foreign key column have null values?

6. Data Types

Q16: Why is it important to choose the correct data type for a column?

Q17: Give an example of a column and its appropriate data type.

7. Relationships

Q18: What are the types of relationships in databases?

Q19: Which type of relationship is established between Students and Courses if students can enroll in multiple courses, and each course can have multiple students?

Q20: How is a many-to-many relationship typically represented in a database?

8. Constraints

Q21: What are database constraints?

Q22: What does the Not Null constraint do?

Q23: What is the purpose of a Default constraint?

9. Practical Scenarios

Q24: Imagine a table Students with the following fields:

- StudentID
- Name
- Major
- GPA

What would be the primary key, and why?

Q25: Suppose we have two tables:

- Students(StudentID, Name, Major)
- Courses(CourseID, CourseName, Instructor)

How would you create a table to store the courses that each student is taking?

Q26: Which of the following can be used as a primary key in a Sales table?

- A) Customer Name
- B) Invoice Number
- C) Product Description
- D) Total Amount

Q27: In a database, which constraint ensures that a column cannot have duplicate values?

- A) Foreign Key
- B) Default
- C) Unique
- D) Not Null