

## Section 11 Design

# INTRODUCTION TO RELATIONAL DATABASE CONCEPTS

Column integrity refers to

Columns always containing values consistent with the defined data format

One or more columns in a primary key can be null. True or False?

False

The explanation below is an example of what constraint type:

If the value in the balance column of the ACCOUNTS table is below 100, we must send a letter to the account owner which will require extra programming to enforce.

User-defined integrity

Identify all of the correct statements that complete this sentence: A primary key is ...

A single column that uniquely identifies each row in a table

A set of columns that uniquely identifies each row in a table

A set of columns and keys in a single table that uniquely identifies each row in a single table

The explanation below defines which constraint type:

A primary key must be unique, and no part of the primary key can be null.

Entity integrity

A foreign key always refers to a primary key in the same table. True or False?

False

The explanation below defines which constraint type:

A column must contain only values consistent with the defined data format of the column

Column integrity

Foreign keys cannot be null when

It is part of a primary key

The explanation below is an example of what constraint type:

The value in the dept\_no column of the EMPLOYEES table must match a value in the dept\_no column in the DEPARTMENTS table.

Referential integrity

A table does not have to have a primary key. True or False?

True

# BASIC MAPPING: THE TRANSFORMATION PROCESS

In an Oracle database, why would the following table name not be allowed 'EMPLOYEE JOBS'?  
You cannot have spaces between words in a table name

In a physical data model, an entity becomes a \_\_\_\_\_.  
Table

The transformation from an ER diagram to a physical design involves changing terminology. Entities in the ER diagram become \_\_\_\_\_, and attributes become \_\_\_\_\_.  
Tables, Columns

In a physical data model, a relationship is represented as a:  
Foreign Key

Attributes become columns in a database table. True or False?  
True

The transformation from an ER diagram to a physical design involves changing terminology. Relationships in the ER diagram become \_\_\_\_\_, and primary unique identifiers become \_\_\_\_\_.  
Foreign keys, primary keys

Why would this table name NOT work in an Oracle database?  
2007\_EMPLOYEEES  
Table names must start with an alphabetic character

## RELATIONSHIP MAPPING

Relationships on an ERD can only be transformed into UIDs in the physical model?  
False

One-to-One relationships are transformed into Foreign Keys in the tables created at either end of that relationship?  
False

One-to-Many Optional to Mandatory becomes a \_\_\_\_\_ on the Master table.  
Nothing (There are no new columns created on the Master table)

What do you create when you transform a many to many relationship from your ER diagram into a physical design?  
Intersection table

A barred Relationship will result in a Foreign Key column that also is part of:  
**The Primary Key**

Two entities A and B have an optional (A) to Mandatory (B) One-to-One relationship. When they are transformed, the Foreign Key(s) is placed on:  
**The table B**

## **SUBTYPE MAPPING**

When mapping supertypes, relationships at the supertype level transform as usual. Relationships at subtype level are implemented as foreign keys, but the foreign key columns all become optional. True or False?  
**True**

When translating an arc relationship to a physical design, you must turn the arc relationships into foreign keys. What additional step must you take with the created foreign keys to ensure the exclusivity principle of arc relationships? (Assume that you are implementing an Exclusive Design)  
**Make all relationships optional**  
**Create an additional check constraint to verify that one foreign key is populated and the others are not**

Which of the following are reasons you should consider when using a Subtype Implementation?  
**When the common access paths for the subtypes are different.**  
**Most of the relationships are at the subtype level**

The "Arc Implementation" is a synonym for what type of implementation?  
**Supertype and Subtype Implementation**