Exercise #1) Province & Cities

Step 1: Describe Each Table and Attributes

Province Table

• **province_code** (CHAR(2), Primary Key): Unique identifier for each province.

This field serves as the primary key, operating on the CHAR data type. It uniquely identifies each province entry within the table.

• province_name (VARCHAR(100), Unique, Not Null):

Represented as a VARCHAR data type, this attribute stores the name of the province, accommodating strings of variable lengths.

City Table

• **city_id** (INT, Primary Key, Auto Increment): Unique identifier for each city.

Operating as the primary key, this field utilizes the INT data type. It ensures unique identification for each city record in the table.

• city_name (VARCHAR(100), Not Null): Name of the city.

Employing the VARCHAR data type, this attribute captures the name of the city, allowing for variable-length strings.

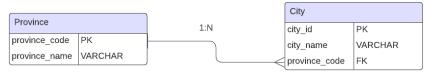
• province_code (CHAR(2), Foreign Key): References province_code in the Province table.

This attribute establishes a foreign key relationship with the province_code field in the Provinces table. It indicates the province to which each city belongs.

Step 2: Draw Database Schema with Relationship

One-to-Many Relationship: Each province can have multiple cities, but each city belongs to one province.

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Step 3: Describe Each Association

Association from Province to City

• One-to-Many Relationship: Each province can have multiple cities. This is represented by the province_code in the City table that references the province_code in the Province table.

Association from City to Province

• Many-to-One Relationship: Each city belongs to one province. This is represented by the foreign key province_code in the City table that links to the province_code in the Province table.