

## 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.