**Step 2: Database Design & Implementation**

**1. Define Database Entities and Attributes**

Below are the **main tables** and their attributes for the database:

**Countries Table**

* country\_id
* country\_name
* country\_code
* region
* income\_level

**Countries → Economic Indicators (One-to-Many)**

* **One country** can have **multiple economic indicators** for different years.
* Connected via **country\_code**.
* **Foreign Key:** economic\_indicators.country\_code → countries.country\_code

**Economic Indicators Table (from WDI)**

* id
* country\_code
* year
* gdp
* inflation\_rate
* trade\_balance
* foreign\_direct\_investment
* government\_spending

**Countries → Social Indicators (One-to-Many)**

* **One country can have multiple social indicators over time.**
* **Connected via country\_code.**
* **Foreign Key: social\_indicators.country\_code → countries.country\_code**

**Social Indicators Table (from WDI)**

* id
* country\_code
* year
* life\_expectancy
* literacy\_rate
* poverty\_rate
* unemployment\_rate
* access\_to\_clean\_water

**Countries → Public Debt Indicators (One-to-Many)**

* **One country has multiple debt records across different years.**
* **Connected via country\_code.**
* **Foreign Key: public\_debt\_indicators.country\_code → countries.country\_code**
* id
* country\_code
* year
* total\_government\_debt
* debt\_to\_gdp\_ratio
* interest\_payments
* external\_debt\_stocks

**Countries → Environmental Indicators (One-to-Many)**

* **One country has multiple environmental data records.**
* **Connected via country\_code.**
* **Foreign Key: environmental\_indicators.country\_code → countries.country\_code**
* id
* country\_code
* year
* co2\_emissions
* renewable\_energy\_consumption
* access\_to\_electricity
* forest\_area

**Countries → Statistical Indicators (One-to-Many)**

* **One country has multiple statistical records over time.**
* **Connected via country\_code.**
* **Foreign Key: statistical\_indicators.country\_code → countries.country\_code**

**Statistical Indicators Table (from Statistical Indicators)**

* id
* country\_code
* year
* money\_supply\_m2
* exchange\_rate