

CSC2141

Project Part 2

Designing and Building Your  
Database

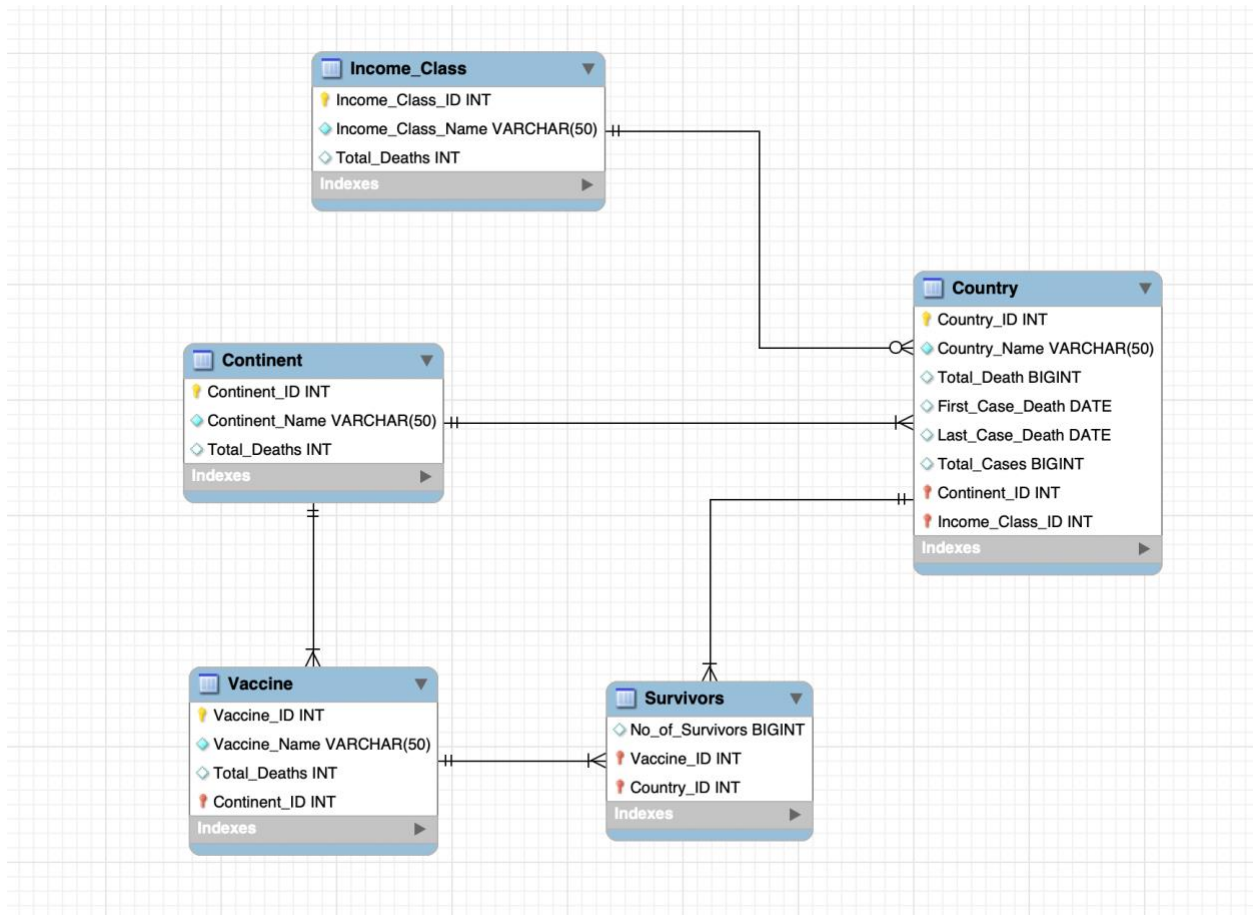
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Date: March 7, 2025

## Section 1:

### 1) Internal Schema:



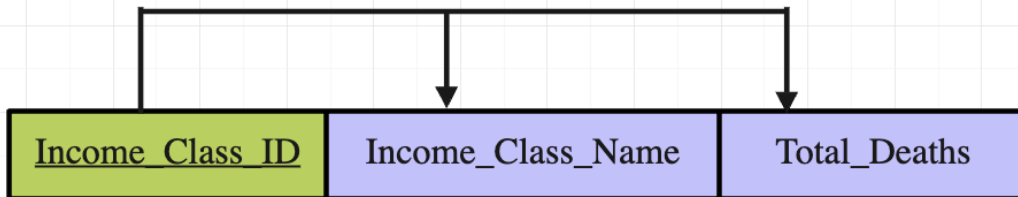
This internal schema is normalized to 3NF: (used points instead of paragraph looks good!!)

- Each table has a primary key.
- All non-key attributes are fully functionally dependent on the primary key.
- Foreign keys enforce relationships between tables (e.g., Country links to Continent and Income\_Class, and Survivors links to Vaccine and Country).
- The Country and Survivors tables have at least 100 rows, as required in the project guidelines.

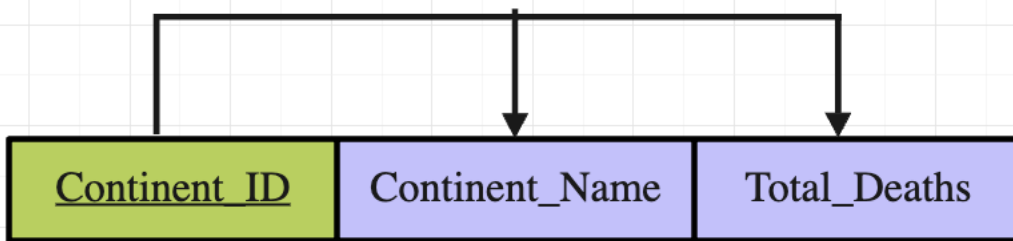
Note: This was already 3NF in part1 as well, and since no feedback was provided for the part 1, so how can I improve it!!

## 2) Dependency Diagrams of Tables:

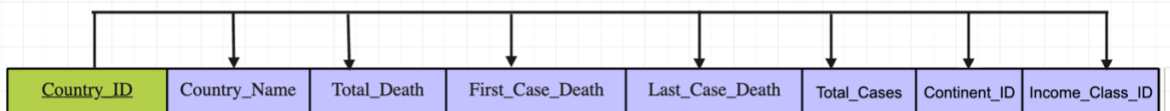
### a) Income\_Class



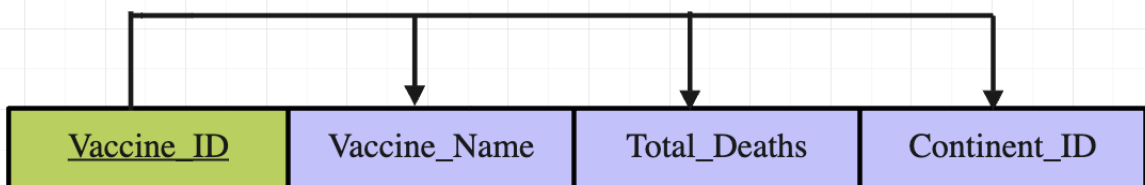
### b) Continent



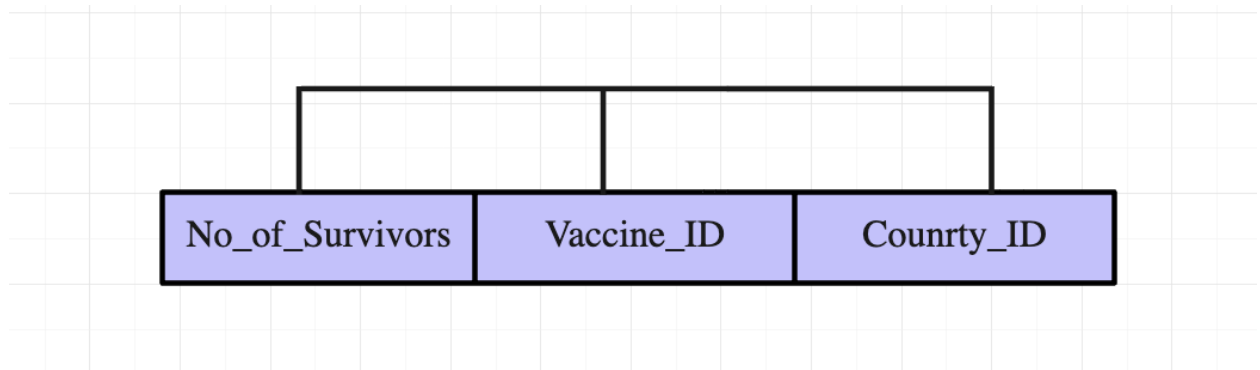
### c) Country



### d) Vaccine



e) Survivors



Explanation of Dependencies: (used points instead of paragraph looks good!!)

- Each table's primary key determines all other attributes in the table.
- Foreign keys (Continent\_ID, Income\_Class\_ID, Vaccine\_ID, Country\_ID) enforce relationships between tables. (Can be seen in the sql file where I created the tables)
- The **Survivors** table uses a composite key (Vaccine\_ID, Country\_ID) to link to the **Vaccine** and **Country** tables.

**Note:** Dependency Diagram made using : <https://www.edrawmax.com>

## Section 2:

**Note:** All the CREATE TABLE statements are in .sql file, please check over there.

## Section 3:

**Note:** All the no. of rows and columns are included in the .sql file!!, please check over there

a) Query 1: Total rows: 10, Columns: 4

	Country_Name	Total_Death	Total_Cases	Death_Rate	
	United States	1000000	50000000	2.00	
	India	500000	40000000	1.00	
	Brazil	300000	30000000	1.00	
	China	200000	20000000	1.00	
	Russia	150000	10000000	2.00	
	France	120000	9000000	1.00	
	United Kingdom	130000	8500000	2.00	
	Italy	140000	7000000	2.00	
	Spain	110000	7500000	1.00	
	Indonesia	120000	8000000	2.00	

b) Query 2: Total rows: 5, Columns: 3

	Country_Name	Total_Death	Continent_Na...	
	India	500000	Asia	
	China	200000	Asia	
	Japan	20000	Asia	
	South Korea	15000	Asia	
	Indonesia	120000	Asia	

c) Query 3: Total rows: 3, Columns: 2

	Vaccine_Name	Total_Survivors	
	Pfizer	8733940	
	Moderna	5858202	
	AstraZeneca	4790668	