

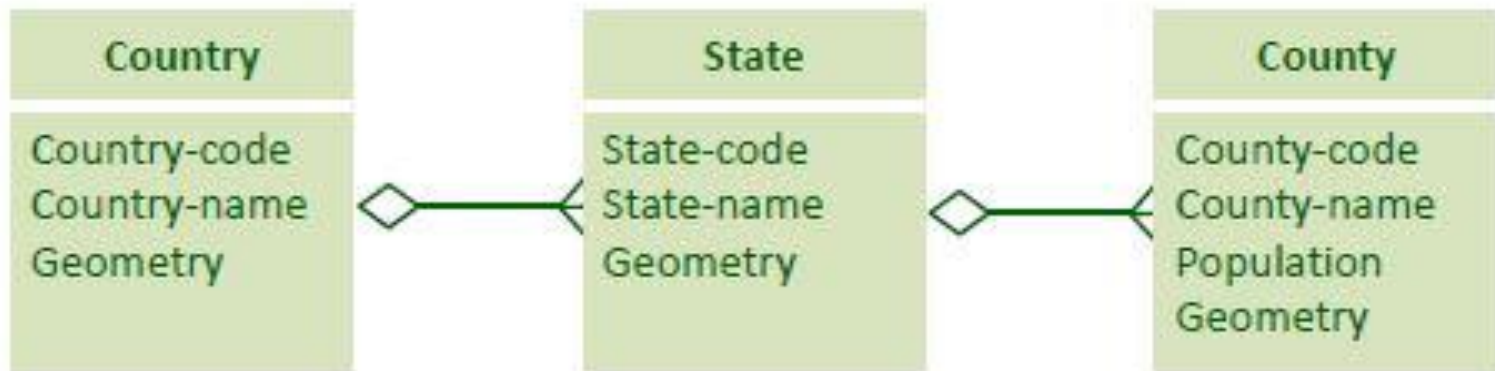


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

REPRESENTATION AND QUERYING
GEOGRAPHIC
OBJECTS USING AN EXTENDED
RELATIONAL
MODEL

Schema 1: Administrative units

- Themes:
 - Country: polygon
 - States: polygon
 - County: polygon



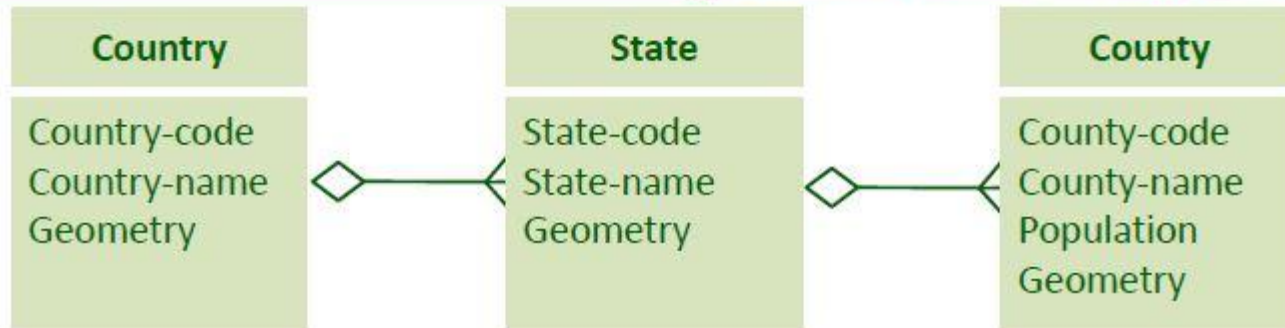
◇ : Aggregation

(Schema 1: Administrative units)

1 Create Table *Country*
(*country_code* **integer**,
country_name **varchar (30)**,
geometry **region**,
Primary Key (*country_code*))

2 Create Table *State*
(*state_code* **integer**,
state_name **varchar (30)**,
country_code **integer**,
geometry **region**,
Primary Key (*state_code*),
Foreign Key (*country_code*) **References** *Country*)

3 Create Table *County*
(*county_code* **integer**,
county_name **varchar (30)**,
state_code **integer**,
population **integer**,
geometry **region**,
Primary Key (*county_code*),
Foreign Key (*state_code*) **References** *State*)



ALPHA-ADM1: Number of inhabitants in the County of San Francisco

```
select  population
from    County
where   county_name = 'San Francisco'
```

```
Create Table County
(county_code integer
county_name varchar (30),
state_code integer,
population integer,
geometry region,
Primary Key (county_code),
Foreign Key (state_code) References State)
```

ALPHA-ADM2: List of the names of the counties in the State of California

```
select  county_name
from    County, State
where   State.state_code = County.state_code
and     state_name = 'California'
```

Create Table State

```
(state_code integer,
state_name varchar (30),
country_code integer,
geometry region,
Primary Key (state_code),
Foreign Key (country_code) References Country)
```

Create Table County

```
(county_code integer
county_name varchar (30),
state_code integer,
population integer,
geometry region,
Primary Key (county_code),
Foreign Key (state_code) References State)
```