Код для создания таблиц:

CREATE TABLE City (

Name VARCHAR(40),

Population INT,

Area INT,

Country VARCHAR(40),

PRIMARY KEY(Name)

);

CREATE TABLE Country (

Name VARCHAR(40),

Population INT,

Area INT,

Capital VARCHAR(40),

PRIMARY KEY(Name)

);

CREATE TABLE Festival (

Name VARCHAR(40),

City VARCHAR(40),

Places INT,

Country VARCHAR(40),

Organizer VARCHAR(40),

PRIMARY KEY(Name)

);

CREATE TABLE FestivalOrganizer (

Name VARCHAR(40),

AccreditationCountry VARCHAR(40),

PRIMARY KEY(Name,AccreditationCountry)

);

Код для заполнения таблиц:

INSERT INTO Country VALUE ('Russia', 142200000, 17098242,'Moscow');

INSERT INTO Country VALUE ('Denmark', 5532531, 43094,'Copenhagen');

INSERT INTO Country VALUE ('Finland', 5502138, 338145,'Helsinki');

INSERT INTO Country VALUE ('Germany', 81757600, 357022,'Berlin');

INSERT INTO Country VALUE ('Iceland', 318452, 103000,'Reykjavik');

INSERT INTO Country VALUE ('Italy', 60200060, 301318,'Roma');

INSERT INTO Country VALUE ('Japan', 127387000, 377873,'Tokyo');

INSERT INTO Country VALUE ('France', 62793432, 551500,'Paris');

INSERT INTO Country VALUE ('Netherlands', 17110000, 41526,'Amsterdam');

INSERT INTO Country VALUE ('Canada', 33740000, 9984670,'Ottawa');

INSERT INTO City VALUE ('Moscow', 12108257, 1091,'Russia');

INSERT INTO City VALUE ('Copenhagen', 518574, 456,'Denmark');

INSERT INTO City VALUE ('Tokyo', 13051965, 2187,'Japan');

INSERT INTO City VALUE ('Helsinki', 588941, 715,'Finland');

INSERT INTO City VALUE ('Paris', 2233818, 105,'France');

INSERT INTO City VALUE ('Amsterdam', 790044, 219,'Netherlands');

INSERT INTO City VALUE ('Ottawa', 883391, 2790,'Canada');

INSERT INTO City VALUE ('Roma', 2870493, 1287,'Italy');

INSERT INTO City VALUE ('Reykjavik', 118814, 275,'Iceland');

INSERT INTO City VALUE ('Berlin', 3490800, 892,'Germany');

INSERT INTO City VALUE ('Kagoshima', 606153, 547,'Japan');

INSERT INTO City VALUE ('Samara', 1170910, 382,'Russia');

INSERT INTO City VALUE ('Munich', 1526149, 310,'Germany');

INSERT INTO Festival VALUE ('Ultra', 'Moscow', 2,'Russia','SuperOrg');

INSERT INTO Festival VALUE ('Tomorrowland', 'Roma', 2, 'Italy','MadBird');

INSERT INTO Festival VALUE ('ElectDaisy','Berlin',2,'Germany','MadBird');

INSERT INTO Festival VALUE ('JazzHeritage', 'Paris',2,'France','SamIzdat');

INSERT INTO Festival VALUE ('Essence', 'Paris', 2,'France','SamIzdat');

INSERT INTO Festival VALUE ('RockTokyo', 'Tokyo',2,'Japan','JapOrganize');

INSERT INTO Festival VALUE ('Summerfest', 'Ottawa',2,'Canada','SuperOrg');

INSERT INTO Festival VALUE ('Maazine','Helsinki',2,'Finland','YoungHome');

INSERT INTO Festival VALUE ('Donaunselfest','Roma',2,'Italy','YoungHome');

INSERT INTO Festival VALUE ('OknaOtkroi','Moscow',2,'Russia','SamIzdat');

INSERT INTO FestivalOrganizer VALUE ('SuperOrg','Russia');

INSERT INTO FestivalOrganizer VALUE ('SamIzdat','Russia');

INSERT INTO FestivalOrganizer VALUE ('MadBird','Italy');

INSERT INTO FestivalOrganizer VALUE ('MadBird','Germany');

INSERT INTO FestivalOrganizer VALUE ('SuperOrg','Canada');

INSERT INTO FestivalOrganizer VALUE ('YoungHome','Finland');

INSERT INTO FestivalOrganizer VALUE ('YoungHome','Italy');

INSERT INTO FestivalOrganizer VALUE ('JapOrganize','Japan');

INSERT INTO FestivalOrganizer VALUE ('MadBird','Iceland');

INSERT INTO FestivalOrganizer VALUE (‘SamIzdat','France');

Код для добавление внешних ключей:

ALTER TABLE City ADD CONSTRAINT FOREIGN KEY (Country)

REFERENCES Country(Name);

ALTER TABLE Country ADD CONSTRAINT FOREIGN KEY (Capital)

REFERENCES City(Name);

ALTER TABLE Festival ADD CONSTRAINT FOREIGN KEY (City)

REFERENCES City(Name);

ALTER TABLE Festival ADD CONSTRAINT FOREIGN KEY (Country)

REFERENCES Country(Name);

ALTER TABLE FestivalOrganizer ADD CONSTRAINT FOREIGN KEY (AccreditationCountry)

REFERENCES Country(Name);

ALTER TABLE Festival ADD CONSTRAINT FOREIGN KEY (Country,Organizer)

REFERENCES FestivalOrganizer(AccreditationCountry,Name);

Результаты:

1) SHOW CREATE TABLE <tableName>

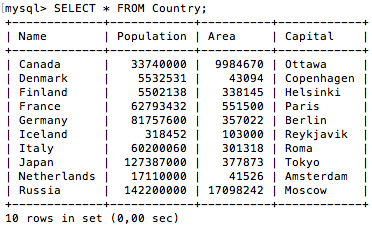








2) SELECT \* FROM <tableName>









Запросы:

1) Вывести информацию по стране, передаваемой в качестве параметра в where (Germany), включающую в себя все города для этой страны с их населением.

SELECT City.name,City.population

FROM Country JOIN City ON Country.name=City.Country

WHERE Country.name=‘Germany';



2) Вывести сумму площади по городам в рамках каждой страны.

SELECT Country.name,SUM(City.Area)

FROM Country JOIN City ON Country.name=City.Country

GROUP BY Country.name;



3) Вывести все фестивали, которые проводятся в стране с наибольшим населением.

SELECT Festival.name

FROM Country JOIN Festival ON Festival.Country=Country.name

WHERE Country.Population=

(SELECT MAX(Country.Population) FROM Country);



4) Вывести все фестивали, которые проводятся в городах с населением большим, чем N (N выбрать самостоятельно, в зависимости от ваших данных).

SELECT Festival.name

FROM Festival JOIN City ON City.name=Festival.City

WHERE City.Population>1000000;



5) Рассчитать среднее население городов в странах, в городах которых проходят 3 крупнейших фестиваля. Крупнейшим считается фестиваль в городе с населением большим, чем во всех остальных городах.

//Вспомогательные представления

CREATE VIEW FestCity AS

SELECT City.name,City.Population

FROM City JOIN Festival ON Festival.City=City.Name

WHERE City.Population<

(SELECT MAX(City.Population)

FROM City JOIN Festival ON Festival.City=City.Name);

CREATE VIEW FestCityless AS

SELECT \* FROM FestCity

WHERE FestCity.Population<

(SELECT MAX(FestCity.Population) FROM FestCity);

CREATE VIEW FestCitylessx2 AS

SELECT \* FROM FestCityless

WHERE FestCityless.Population<

(SELECT MAX(FestCityless.Population) FROM FestCityless);

//Сам запрос

SELECT Country.name, AVG(City.Population)

FROM Country JOIN City ON Country.name=City.Country

WHERE City.Name IN

(SELECT City.name

FROM City JOIN Festival ON Festival.City=City.Name

WHERE City.name NOT IN

(SELECT FestCitylessx2.name FROM FestCitylessx2))

GROUP BY Country.name;

//Удаляем вспомогательные представления

DROP VIEW FestCity;

DROP VIEW FestCityless;

DROP VIEW FestCitylessx2;

