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Final Project

Artists Database

I have design and created a database that stores artists and their attributes. The database can be used to search for artists by a variety of associations. The database would be applicable to an educational, business, or social environment. The database site functions by presenting the tables of the actual database tables. A simple interface is provided for changing the tables as desired. Changes made in the interface tables are reflected in the actual tables. I used Node.js for this web site along with helpful node packages.
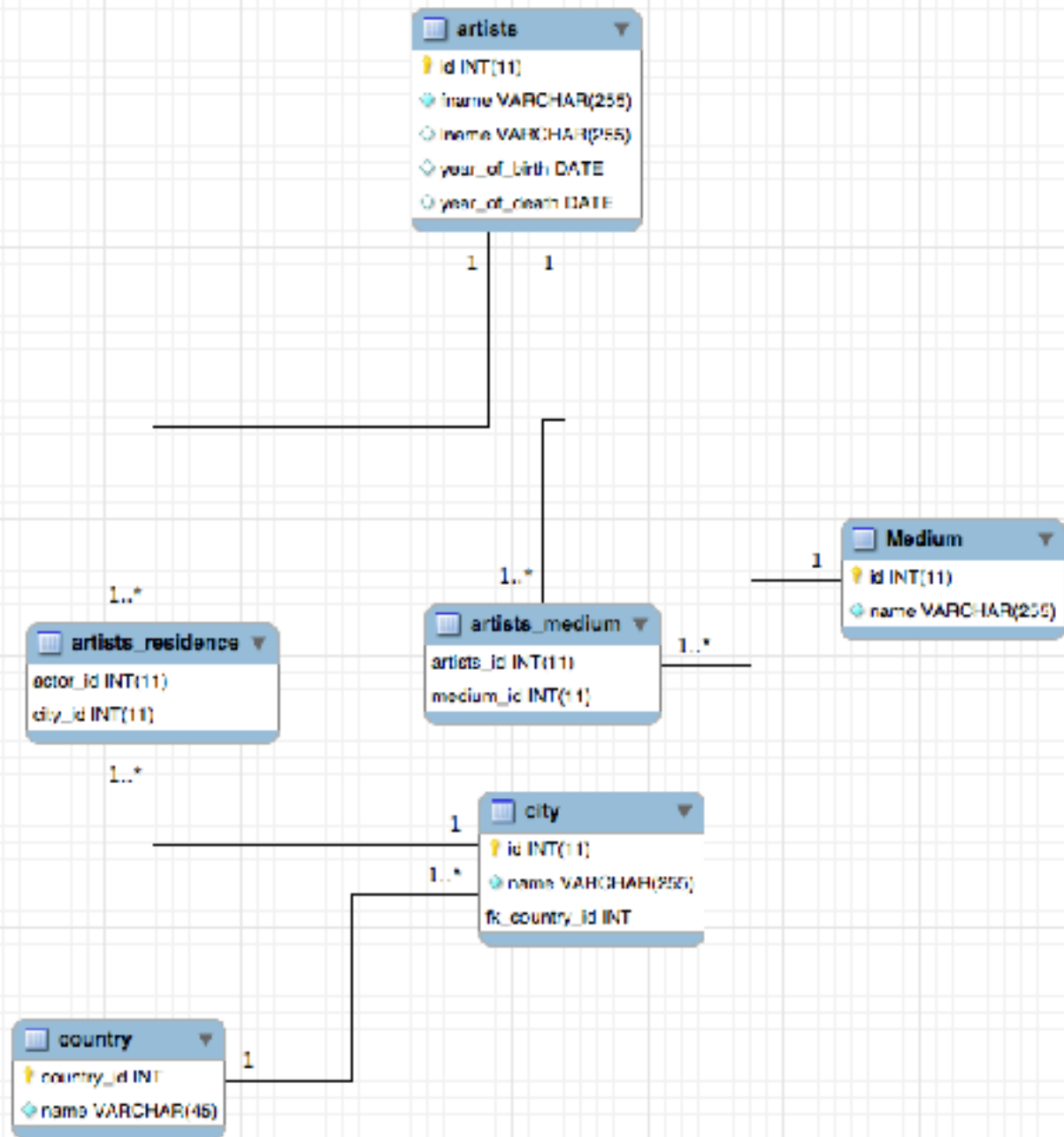
Entities in the Database are as follows:

- Artists - attributes include: <u>ID</u>, first name, last name, year of birth, year of death.
- Country - attributes include: <u>ID</u>, name.
- City - attributes include: <u>ID</u>, name, country id.
- Mediums - attributes include: <u>ID</u> , name.
- Artists by Medium - attributes include: medium ID, artist ID.
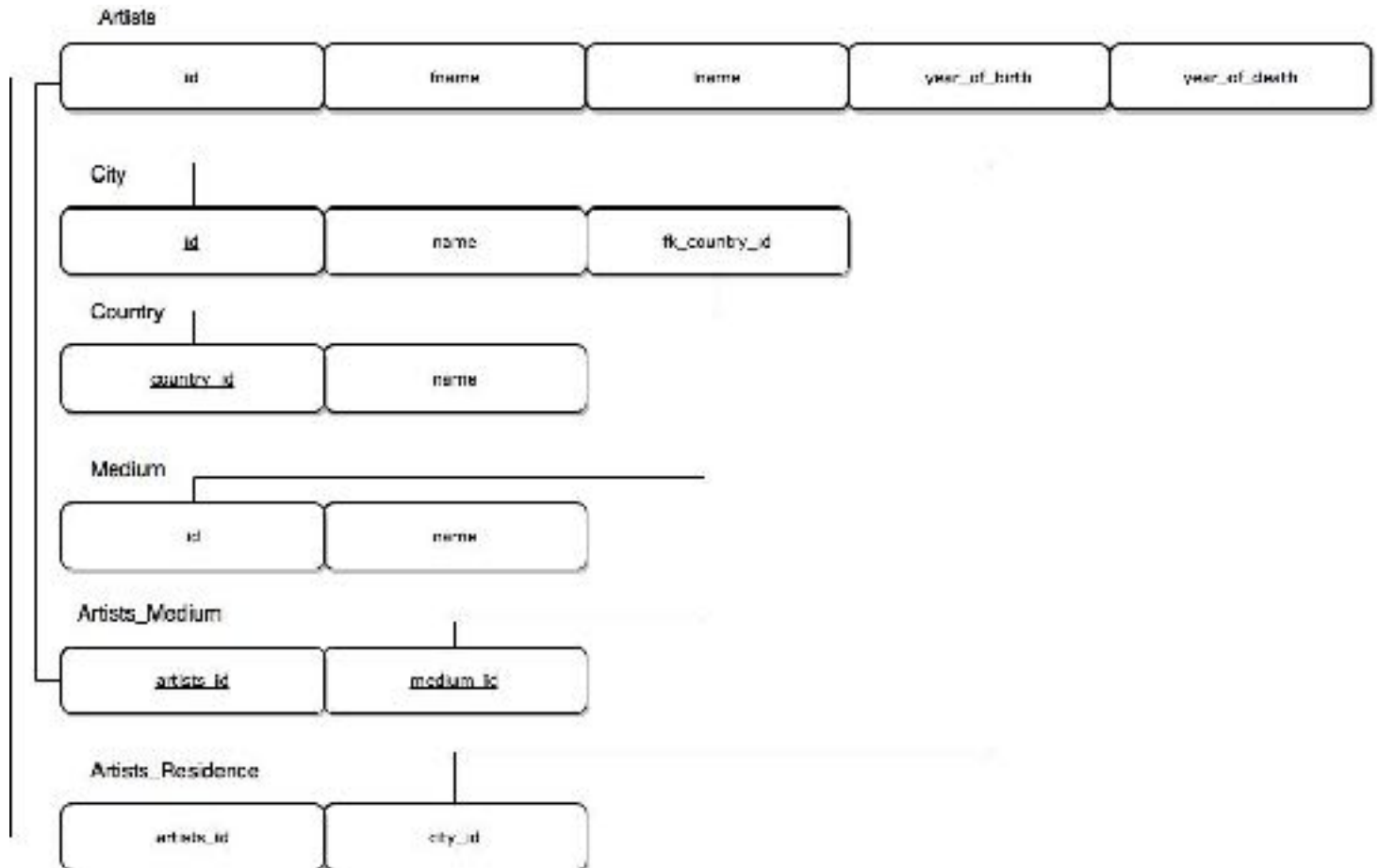- Artists by City - attributes include: artist ID, city ID.

Relationships in the Database are as follows:

- Artists are originally from a country - An artist may only have one country of origin.
- Artists currently reside in a place - An artist may reside in several places at once.
- A city is of a country - A city must be of only one country.
- Artists have at least one medium - An artist may practice more than one medium.
- Mediums have many artists - A medium may be practiced by many artists.
- Artists by medium entity - Each medium id will reference one medium entity.
- Artists by place entity - Country and city id's will reference country and city entities by id.

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ER Diagram:

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Schema:

Artists

id	fname	lname	year_of_birth	year_of_death

City

id	name	fk_country_id

Country

country_id	name

Medium

id	name

Artists_Medium

artists_id	medium_id

Artists_Residence

artists_id	city_id

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Create Tables:

```sql
DROP TABLE IF EXISTS `artists`;
CREATE TABLE IF NOT EXISTS `artists` (
 `id` INT(11) NOT NULL AUTO_INCREMENT,
 `fname` VARCHAR(255) NOT NULL,
 `lname` VARCHAR(255) DEFAULT NULL,
 `year_of_birth` INT NOT NULL,
 `year_of_death` INT,
 PRIMARY KEY (`id`))
ENGINE = innoDB;

DROP TABLE IF EXISTS `country`;
CREATE TABLE IF NOT EXISTS `country` (
 `country_id` INT NOT NULL AUTO_INCREMENT,
 `name` VARCHAR(45) UNIQUE NOT NULL,
 PRIMARY KEY (`country_id`))
ENGINE = innoDB;

DROP TABLE IF EXISTS `city`;
CREATE TABLE IF NOT EXISTS `city` (
 `id` INT(11) NOT NULL AUTO_INCREMENT,
 `name` VARCHAR(255) UNIQUE NOT NULL,
 `fk_country_id` INT NOT NULL,
 PRIMARY KEY (`id`, `fk_country_id`),
 INDEX `country_id_idx` (`fk_country_id` ASC),
 UNIQUE INDEX `id_UNIQUE` (`id` ASC),
 CONSTRAINT `country_id`
  FOREIGN KEY (`fk_country_id`)
  REFERENCES `country` (`country_id`)
  ON DELETE RESTRICT
  ON UPDATE RESTRICT)
ENGINE = innoDB;

DROP TABLE IF EXISTS `medium`;
CREATE TABLE IF NOT EXISTS `medium` (
 `id` INT(11) NULL DEFAULT NULL AUTO_INCREMENT,
```

```sql
  `name` VARCHAR(255) NOT NULL,
  PRIMARY KEY (`id`))
ENGINE = innoDB;


DROP TABLE IF EXISTS `artists_medium`;
CREATE TABLE IF NOT EXISTS `artists_medium` (
 `artists_id` INT(11) NOT NULL,
 `medium_id` INT(11) NOT NULL,
 PRIMARY KEY (`artists_id`, `medium_id`),
 INDEX (`medium_id` ASC),
 CONSTRAINT
  FOREIGN KEY (`artists_id`)
  REFERENCES `artists` (`id`)
  ON DELETE CASCADE
  ON UPDATE CASCADE,
 CONSTRAINT
  FOREIGN KEY (`medium_id`)
  REFERENCES `medium` (`id`)
  ON DELETE CASCADE
  ON UPDATE CASCADE)
ENGINE = innoDB;


DROP TABLE IF EXISTS  `artists_residence`;
CREATE TABLE IF NOT EXISTS `artists_residence` (
 `artists_id` INT(11) NOT NULL,
 `city_id` INT(11) NOT NULL,
 PRIMARY KEY (`artists_id`, `city_id`),
 INDEX (`city_id` ASC),
 CONSTRAINT
  FOREIGN KEY (`artists_id`)
  REFERENCES `artists` (`id`)
  ON DELETE CASCADE
  ON UPDATE CASCADE,
 CONSTRAINT
  FOREIGN KEY (`city_id`)
  REFERENCES `city` (`id`)
  ON DELETE CASCADE
  ON UPDATE CASCADE)
ENGINE = innoDB;
```

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Seed Table:

```
INSERT INTO country (name)
VALUES ("France"),
      ("Italy"),
      ("China"),
      ("Australia"),
      ("United States"),
      ("Brazil"),
      ("Argentina");

INSERT INTO medium (name)
VALUES ("Painting"),
      ("Ceramics"),
      ("Sculpture"),
      ("Printmaking"),
      ("Drawing"),
      ("Performance"),
      ("Photography"),
      ("Film");

INSERT INTO city (name,fk_country_id)
VALUES ("Lyon",(SELECT country_id FROM country WHERE name="France")),
      ("Rome",(SELECT country_id FROM country WHERE name="Italy")),
      ("Beijing",(SELECT country_id FROM country WHERE name="China")),
      ("Perth",(SELECT country_id FROM country WHERE name="Australia")),
      ("New York",(SELECT country_id FROM country WHERE name="United States")),
      ("Sao Paulo",(SELECT country_id FROM country WHERE name="Brazil")),
      ("Buenos Aires",(SELECT country_id FROM country WHERE name="Argentina"));

INSERT INTO artists (fname,lname,year_of_birth,year_of_death)
VALUES ("Andre","Vermare",1869,1949),
      ("Michaelangelo",null,1475,1564),
      ("Ai","Weiwei",1957,null),
      ("Micky","Allan",1944,null),
      ("Jeff","Koons",1955,null),
      ("Andy","Warhol",1928,1987),
      ("Humberto","Mauro",1897,1983),
      ("Marta","Minujin",1943,null);
```

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```
INSERT INTO artists_medium (artists_id,medium_id)
VALUES ((SELECT id FROM artists WHERE fname = "Andre" AND lname="Vermare"),
        (SELECT id FROM medium WHERE name ="Sculpture")),
    ((SELECT id FROM artists WHERE fname ="Michaelangelo"),
        (SELECT id FROM medium WHERE name="Painting")),
    ((SELECT id FROM artists WHERE fname ="Michaelangelo"),
        (SELECT id FROM medium WHERE name="Sculpture")),
    ((SELECT id FROM artists WHERE fname="Ai" AND lname="Weiwei"),
        (SELECT id FROM medium WHERE name="Performance")),
    ((SELECT id FROM artists WHERE fname="Ai" AND lname="Weiwei"),
        (SELECT id FROM medium WHERE name="Ceramics")),
    ((SELECT id FROM artists WHERE fname="Micky" AND lname="Allan"),
        (SELECT id FROM medium WHERE name="Photography")),
    ((SELECT id FROM artists WHERE fname="Jeff" AND lname="Koons"),
        (SELECT id FROM medium WHERE name="Sculpture")),
    ((SELECT id FROM artists WHERE fname="Jeff" AND lname="Koons"),
        (SELECT id FROM medium WHERE name="Painting")),
    ((SELECT id FROM artists WHERE fname="Andy" AND lname="Warhol"),
        (SELECT id FROM medium WHERE name="Printmaking")),
    ((SELECT id FROM artists WHERE fname="Humberto" AND lname="Mauro"),
        (SELECT id FROM medium WHERE name="Film")),
    ((SELECT id FROM artists WHERE fname="Marta" AND lname="Minujin"),
        (SELECT id FROM medium WHERE name="Drawing"));

INSERT INTO artists_residence (artists_id,city_id)
VALUES ((SELECT id FROM artists WHERE fname = "Andre" AND lname="Vermare"),
        (SELECT id FROM city WHERE name ="Lyon")),
    ((SELECT id FROM artists WHERE fname ="Michaelangelo"),
        (SELECT id FROM city WHERE name="Rome")),
    ((SELECT id FROM artists WHERE fname="Ai" AND lname="Weiwei"),
        (SELECT id FROM city WHERE name="Beijing")),
    ((SELECT id FROM artists WHERE fname="Micky" AND lname="Allan"),
        (SELECT id FROM city WHERE name="Perth")),
    ((SELECT id FROM artists WHERE fname="Jeff" AND lname="Koons"),
        (SELECT id FROM city WHERE name="New York")),
    ((SELECT id FROM artists WHERE fname="Andy" AND lname="Warhol"),
        (SELECT id FROM city WHERE name="New York")),
    ((SELECT id FROM artists WHERE fname="Humberto" AND lname="Mauro"),
        (SELECT id FROM city WHERE name="Sao Paulo")),
```

```
((SELECT id FROM artists WHERE fname="Marta" AND lname="Minujin"),
    (SELECT id FROM city WHERE name="Buenos Aires"));
```

Data Manipulation Queries:

Select from table:

```
SELECT * FROM [table];
```

Search for artist by country:

```
SELECT artists.fname, artists.lname FROM artists
INNER JOIN artists_residence ON artists.id = artists_residence.artists_id
INNER JOIN city ON artists_residence.city_id = city.id
INNER JOIN country ON city.fk_country_id = country.country_id
WHERE country.name = country.name > [name input];
```

Insert into [table]:

```
INSERT INTO [table] VALUES [(form values)];
```

Delete from table:

```
DELETE FROM [table] WHERE id=[id];
```

Delete from artists_residence table:

```
DELETE FROM artists_residence WHERE artists_residence =[artists_id]
AND city_id = [city_id];
```

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Delete from artists_medium table:

```
DELETE FROM artists_medium WHERE artists_id =[artists_id]
AND medium_id=[medium_id];
```