

## Database Logical Schema

AREA (geoname\_id, name, ascii\_name, country\_code, country\_name, latitude, longitude);

CENTER (center\_id, name, city<sup>AREA</sup>, street, house\_number, postal\_code, district);

MONITORS (center\_id<sup>CENTER</sup>, geoname\_id<sup>AREA</sup>);

OPERATOR (user\_id, ssid, surname, name, email, password, center\_id<sup>CENTER</sup>);

CATEGORY (category\_id, explanation);

PARAMETER (geoname\_id<sup>AREA</sup>, center\_id<sup>CENTER</sup>, user\_id<sup>OPERATOR</sup>, category\_id<sup>CATEGORY</sup>, rec\_date, rec\_time, score, notes);

### SQL code

#### 1. Area

CREATE TABLE Area(

Geoname\_id INT PRIMARY KEY,

Name VARCHAR(100) NOT NULL,

Ascii\_name VARCHAR(100) NOT NULL,

Country\_code CHAR(2) NOT NULL,

Country\_name VARCHAR(100) NOT NULL,

Latitude DECIMAL(9, 5) NOT NULL,

Longitude DECIMAL(9, 5) NOT NULL

);

## 2. Center

```
CREATE TABLE Center(  
  
    Center_id INT PRIMARY KEY,  
    Name VARCHAR(100) NOT NULL,  
    City INT REFERENCES Area(Geoname_id)  
        ON UPDATE CASCADE  
        ON DELETE NO ACTION,  
    Street VARCHAR(100) NOT NULL,  
    House_number SMALLINT NOT NULL,  
    Postal_code INT NOT NULL,  
    District VARCHAR(100) NOT NULL,  
    CONSTRAINT Address UNIQUE(City, Street, House_number)  
);
```

## 3. Monitors

```
CREATE TABLE Monitors(  
  
    Center_id INT REFERENCES Center  
        ON UPDATE CASCADE  
        ON DELETE NO ACTION,  
    Geoname_id INT REFERENCES Area  
        ON UPDATE CASCADE  
        ON DELETE NO ACTION,  
    PRIMARY KEY(Center_id, Geoname_id)  
);
```

#### 4. Operator

CREATE TABLE Operator(

User\_id VARCHAR(50) PRIMARY KEY,

SSID CHAR(16) NOT NULL,

Surname VARCHAR(100) NOT NULL,

Name VARCHAR(100) NOT NULL,

Email VARCHAR(50) NOT NULL,

Password VARCHAR(50) NOT NULL,

Center\_id INT REFERENCES Center

ON UPDATE CASCADE

ON DELETE NO ACTION,

UNIQUE(SSID, Email),

CONSTRAINT SSID\_length\_16 CHECK(LENGTH(SSID) = 16)

);

#### 5. Category

CREATE TABLE Category(

Category\_id VARCHAR(20) PRIMARY KEY,

Explanation VARCHAR(256) NOT NULL,

CONSTRAINT Explanation\_less\_than\_256 CHECK(LENGTH(Explanation) <= 256)

);

## 6. Parameter

```
CREATE TABLE Parameter(  
  
    Geoname_id INT REFERENCES Area ON UPDATE CASCADE ON DELETE NO ACTION,  
    Center_id INT REFERENCES Center ON UPDATE CASCADE ON DELETE NO ACTION,  
    User_id VARCHAR(20) REFERENCES Operator  
        ON UPDATE CASCADE  
        ON DELETE NO ACTION,  
    Category_id VARCHAR(20) REFERENCES Category  
        ON UPDATE CASCADE  
        ON DELETE NO ACTION,  
    Rec_date DATE DEFAULT CURRENT_DATE,  
    Rec_time TIME DEFAULT CURRENT_TIME,  
    Score INT NOT NULL,  
    Notes VARCHAR(256) DEFAULT "",  
    PRIMARY KEY(Geoname_id, Center_id, User_id, Category_id, Rec_date, Rec_time),  
    CONSTRAINT Score_between_one_and_five CHECK(Score BETWEEN 1 AND 5),  
    CONSTRAINT Notes_less_than_256 CHECK(LENGTH(Notes) <= 256)  
);
```