

Database Logical Schema

AREA (geoname_id, name, ascii_name, country_code, country_name, latitude, longitude);

CENTER (center_id, name, city^{AREA}, street, house_number, postal_code, district);

MONITORS (center_id^{CENTER}, geoname_id^{AREA});

OPERATOR (user_id, ssid, surname, name, email, password, center_id^{CENTER});

CATEGORY (category_id, explanation);

PARAMETER (geoname_id^{MONITORS}, center_id^{MONITORS}, user_id^{OPERATOR}, category_id^{CATEGORY}, 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,  
  
    Center_id INT,  
  
    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 "",  
  
    FOREIGN KEY(Center_id, Geoname_id) REFERENCES Monitors  
        ON UPDATE CASCADE ON DELETE NO ACTION,  
  
    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)  
  
);
```