SQL SCRIPTS

1. **Creating a new database and tables.**

```
CREATE DATABASE SDG;
USE sdg;

CREATE TABLE Households (
    HouseholdID INT PRIMARY KEY AUTO_INCREMENT,
    Region VARCHAR(255),
    NumberOfMembers INT,
    IncomeLevel DECIMAL(10, 2)
);

CREATE TABLE Crops (
    CropID INT PRIMARY KEY AUTO_INCREMENT,
    CropName VARCHAR(255),
    NutritionalValue VARCHAR(255)
);


CREATE TABLE Food_Distribution_Centers (
    CenterID INT PRIMARY KEY AUTO_INCREMENT,
    Location VARCHAR(255),
    Capacity INT
);

CREATE TABLE Food_Supplies (
    SupplyID INT PRIMARY KEY AUTO_INCREMENT,
    CropID INT,
    CenterID INT,
    Quantity INT,
    DistributionDate DATE,
    FOREIGN KEY (CropID) REFERENCES Crops(CropID),
    FOREIGN KEY (CenterID) REFERENCES Food_Distribution_Centers(CenterID)
);

CREATE TABLE Health_Records (
    RecordID INT PRIMARY KEY AUTO_INCREMENT,
    HouseholdID INT,
    HealthStatus VARCHAR(255),
    NutritionalDeficiencies VARCHAR(255),
    FOREIGN KEY (HouseholdID) REFERENCES Households(HouseholdID)
);


CREATE TABLE Food_Supplies (
    SupplyID INT PRIMARY KEY AUTO_INCREMENT,
    CropID INT,
```

```
    CenterID INT,
    Quantity INT,
    DistributionDate DATE,
    FOREIGN KEY (CropID) REFERENCES Crops(CropID),
    FOREIGN KEY (CenterID) REFERENCES Food_Distribution_Centers(CenterID)
);

CREATE TABLE Health_Records (
    RecordID INT PRIMARY KEY AUTO_INCREMENT,
    HouseholdID INT,
    HealthStatus VARCHAR(255),
    NutritionalDeficiencies VARCHAR(255),
    FOREIGN KEY (HouseholdID) REFERENCES Households(HouseholdID)
);
```

2. Inserting data into the tables

```
-- Inserting data into Households
INSERT INTO Households (Region, NumberOfMembers, IncomeLevel)
VALUES
('Rural Area 1', 5, 200.00),
('Rural Area 2', 4, 150.00),
('Rural Area 3', 6, 180.00);

-- Inserting data into Crops
INSERT INTO Crops (CropName, NutritionalValue)
VALUES
('Maize', 'High in Carbohydrates'),
('Beans', 'High in Protein'),
('Rice', 'Moderate Carbohydrates, Low Protein');

-- Inserting data into Food_Distribution_Centers
INSERT INTO Food_Distribution_Centers (Location, Capacity)
VALUES
('Distribution Center 1', 500),
('Distribution Center 2', 300);

-- Inserting data into Food_Supplies
INSERT INTO Food_Supplies (CropID, CenterID, Quantity, DistributionDate)
VALUES
(1, 1, 1000, '2024-08-01'),
(2, 1, 500, '2024-08-05'),
(3, 2, 800, '2024-08-10');

-- Inserting data into Health_Records
INSERT INTO Health_Records (HouseholdID, HealthStatus, NutritionalDeficiencies)
VALUES
(1, 'Moderate', 'Iron Deficiency'),
```

```
(2, 'Poor', 'Vitamin A Deficiency'),
(3, 'Good', 'None');
```

3. **Data retrieval.**

```
-- Households with poor health status
SELECT HouseholdID, HealthStatus, NutritionalDeficiencies
FROM Health_Records
WHERE HealthStatus = 'Poor';

-- Crops distributed in August
SELECT CropName, Quantity, DistributionDate
FROM Food_Supplies
INNER JOIN Crops ON Food_Supplies.CropID = Crops.CropID
WHERE DistributionDate BETWEEN '2024-08-01' AND '2024-08-31';

-- Households with more than 5 members
SELECT HouseholdID, Region, NumberOfMembers, IncomeLevel
FROM Households
WHERE NumberOfMembers > 5;

-- Food items distributed by Distribution Center 1
SELECT crops.CropName, Food_Supplies.Quantity, Food_Supplies.DistributionDate
FROM Food_Supplies
JOIN crops ON Food_Supplies.CropID = crops.CropID
JOIN Food_Distribution_Centers ON Food_Supplies.CenterID =
Food_Distribution_Centers.CenterID
WHERE Food_Distribution_Centers.Location = 'Distribution Center 1';

-- Health records for households in Rural Area 1
SELECT Households.Region, Health_Records.HealthStatus,
Health_Records.NutritionalDeficiencies
FROM Health_Records
JOIN Households ON Health_Records.HouseholdID = Households.HouseholdID
WHERE Households.Region = 'Rural Area 1';

-- Households with <$150 income level
SELECT HouseholdID, Region, NumberOfMembers, IncomeLevel
FROM Households
WHERE IncomeLevel < 150.00;
```

4. **Data analysis.**

```
-- Average income level by rural area
SELECT Region, AVG(IncomeLevel) AS AverageIncome
FROM Households
GROUP BY Region;
```

```
-- Nutritional deficiency by region
SELECT Households.Region, Health_Records.NutritionalDeficiencies, COUNT(*) AS
DeficiencyCount
FROM Health_Records
JOIN Households ON Health_Records.HouseholdID = Households.HouseholdID
GROUP BY Households.Region, Health_Records.NutritionalDeficiencies;

-- Correlation between income level and health status
SELECT Households.Region, AVG(Households.IncomeLevel) AS AverageIncome,
      COUNT(CASE WHEN Health_Records.HealthStatus = 'Poor' THEN 1 END) AS
PoorHealthCount
FROM Households
JOIN Health_Records ON Households.HouseholdID = Health_Records.HouseholdID
GROUP BY Households.Region
ORDER BY PoorHealthCount DESC;

-- Average number of household members in each region
SELECT Region, AVG(NumberOfMembers) as AvgMembers
FROM Households
GROUP BY Region;

-- Total quantity of food distributed by each centre
SELECT Location, SUM(Quantity) as TotalDistributed
FROM Food_Supplies
INNER JOIN Food_Distribution_Centers ON Food_Supplies.CenterID =
Food_Distribution_Centers.CenterID
GROUP BY Location;
```