https://console.cloud.google.com/sql/instances?cloudshell=true&project=nutrichoice-429617

Entities:

```
CREATE TABLE UserInfo (
        UserId INT PRIMARY KEY,
        Customer_Name VARCHAR(100),
        Height DECIMAL,
        Weight DECIMAL,
        Age INT
);

CREATE TABLE Factors (
        ProgressID INT PRIMARY KEY,
        Goal_Intake DECIMAL,
        Current_Intake DECIMAL,
        UserID INT,
        FOREIGN KEY (UserId) REFERENCES UserInfo(UserId)
);

CREATE TABLE FoodItems (
        FoodId INT PRIMARY KEY,
        ServingSize INT,
        FoodName VARCHAR (100),
        GroupID INT,
        FOREIGN KEY (GroupID) REFERENCES FoodGroup(GroupID)
);

CREATE TABLE Vitamins (
        VitaminID INT PRIMARY KEY,
        VitaminName VARCHAR(100),
        VitAmount DECIMAL
);

CREATE TABLE Macros(
        MacroID INT,
        MacroName VARCHAR(100),
        MacAmount DECIMAL
);
```

```
CREATE TABLE FoodGroup(
        GroupID INT PRIMARY KEY,
        GroupName VARCHAR(100)
);
```

Advanced SQL Queries

1. Generate table of all food items corresponding to user indicated vitamin - join and groupby

```
SELECT f.FoodName, v.VitaminName
FROM Contains c
        JOIN Vitamins v ON c.VitaminID = v.VitaminID
        JOIN FoodItems f on c.FoodID = f.FoodID
        JOIN Ate a ON f.FoodID = a.FoodID
        JOIN Factors fac ON fac.UserID = a.UserID
WHERE fac.UserID = '[user_id]' AND  v.VitaminName = '[vitamin_name]'
GROUP BY fac.UserID, v.VitaminName
```

2. Setting current intake for vitamin - set and join

```
UPDATE Factors
SET GoalIntake = [goal_intake_value]
WHERE UserID = [specific_userId]
        AND EXISTS (
                SELECT 1
                FROM Contains c
                JOIN Vitamins v ON c.VitaminID = v.VitamindID
                JOIN FoodItems f on c.FoodID = f.FoodID
                WHERE v.VitaminName = '[vitamin_name]'
                AND f.FoodID = Factors.FoodID
);
```

3. Tracking current intake for macro- JOIN and GROUP BY

```
SELECT u.UserID, u.Customer_Name, m.MacroName, SUM(c.MacAmount) AS CurrentIntake
FROM UserInfo u
        JOIN Factors f ON u.UserID = f.UserID
        JOIN Consumed cu ON f.ProgressID = cu.ProgressID
```

```
JOIN Macros m ON m.MacroID = cu.MacroID

JOIN ConsistsOf c ON m.MacroID = c.MacroID
 WHERE m.MacroName = '[specific_macro]'
GROUP BY u.UserID, u.Customer_Name, m.MacroName;
```

4. Add up ingredient nutrient amounts and make sure that it meets goal intake - aggregation and join