Cloud Console Connection:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to nutrichoice-429617.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
nynikabadam@cloudshell:~ (nutrichoice-429617)$ gcloud sql connect nutrichoicefinal --user=root
Allowlisting your IP for incoming connection for 5 minutes...done.
Connecting to database with SQL user [root].Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.31-google (Google)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql> show tables;
+----------------------------+
| Tables_in_nutrichoicefinal |
+----------------------------+
| ConsistsOf                 |
| Contains                   |
| Factors                    |
| FoodGoalList               |
| FoodGroup                  |
| FoodItems                  |
| Macros                     |
| UserInfo                   |
| Vitamins                   |
+----------------------------+
9 rows in set (0.03 sec)
```

DDL Commands::

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

**starts empty

CREATE TABLE Factors (
    ProgressID INT PRIMARY KEY,
    Goal_Intake DECIMAL,

```
    Current_Intake DECIMAL,
    UserID INT,
    FOREIGN KEY (UserId) REFERENCES UserInfo(UserId)
);
```

**starts empty

```
CREATE TABLE FoodItems (
    FoodId INT PRIMARY KEY,
    ServingSize INT,
    FoodName VARCHAR (100)
);
```

```
mysql> SELECT COUNT(*) FROM FoodItems;
+----------+
| COUNT(*) |
+----------+
|    10633 |
+----------+
1 row in set (0.03 sec)
```

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

```
mysql> SELECT COUNT(*) FROM Vitamins;
+----------+
| COUNT(*) |
+----------+
|       30 |
+----------+
1 row in set (0.03 sec)
```

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

```
mysql> SELECT COUNT(*) FROM Macros;
+----------+
| COUNT(*) |
+----------+
|       13 |
+----------+
1 row in set (0.04 sec)
```

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

```
mysql> SELECT COUNT(*) FROM FoodGroup;
+----------+
| COUNT(*) |
+----------+
|       16 |
+----------+
1 row in set (0.04 sec)
```

CREATE TABLE FoodGoalList (
ServingSize INT,
FoodName VARCHAR (100),
UserID INT,
ProgressID INT,
PRIMARY KEY(UserID, ProgressID),
FOREIGN KEY (ProgressID) REFERENCES Factors(ProgressID),
FOREIGN KEY (UserID) REFERENCES UserInfo(UserID)
);

**starts empty

CREATE TABLE Contains(
FoodID INT,
VitaminID INT,
PRIMARY KEY(FoodID, VitaminID),
VitAmount DECIMAL,
FOREIGN KEY (FoodID) REFERENCES FoodItems(FoodID),
FOREIGN KEY (VitaminID) REFERENCES Vitamins(VitaminID),
);

```
mysql> select count( *) from Contains;
+-----------+
| count( *) |
+-----------+
|     10632 |
+-----------+
1 row in set (0.04 sec)
```

```
CREATE TABLE ConsistsOf(
        FoodID INT,
        MacroID INT,
        PRIMARY KEY(FoodID, MacroID),
        MacAmount DECIMAL,
        FOREIGN KEY (FoodID) REFERENCES FoodItems(FoodID),
        FOREIGN KEY (MacroID) REFERENCES Macros(MacroID)
);
```

```
mysql> select count( *) from ConsistsOf;
+-----------+
| count( *) |
+-----------+
|     10633 |
+-----------+
1 row in set (0.04 sec)
```

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 = 20
WHERE UserID = 1
        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 like “%zinc_mg%”
        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 like ‘%protein_g%’
    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