LAB 4

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SQL Code:

```sql
CREATE TABLE fruits (
    fruit_id INT PRIMARY KEY,
    F_name VARCHAR(50),
    color VARCHAR(20),
    taste VARCHAR(50),
    season VARCHAR(20)
);


INSERT INTO fruits (fruit_id, F_name, color, taste, season)
VALUES (1, 'Apple', 'Red', 'Sweet', 'Autumn'),
       (2, 'Banana', 'Yellow', 'Sweet', 'All year round'),
       (3, 'Orange', 'Orange', 'Sweet', 'Winter'),
    (4, 'Strawberry', 'Red', 'Sweet', 'Spring'),
       (5, 'Blueberry', 'Blue', 'Sweet', 'Summer'),
       (6, 'Pineapple', 'Yellow', 'Sweet and tangy', 'All year round'),
       (7, 'Mango', 'Yellow', 'Sweet', 'Summer');

select * from fruits;

CREATE TABLE nutrients (
    nutrient_id INT PRIMARY KEY,
    N_name VARCHAR(50),
    unit VARCHAR(20)
);

INSERT INTO nutrients (nutrient_id, N_name, unit)
 VALUES (1, 'Vitamin C', 'mg'),
  (2, 'Potassium', 'mg'),
  (3, 'Fiber', 'g'),
  (4, 'Vitamin A', 'IU'),
       (5, 'Calcium', 'mg'),
       (6, 'Iron', 'mg');

select *from nutrients;
```

```sql
CREATE TABLE fruit_nutrients (
    fruit_id INT,
    nutrient_id INT,
    amount DECIMAL(10,2),
    FOREIGN KEY (fruit_id) REFERENCES fruits(fruit_id),
    FOREIGN KEY (nutrient_id) REFERENCES nutrients(nutrient_id)
);

INSERT INTO fruit_nutrients (fruit_id, nutrient_id, amount)
VALUES (1, 1, 12),
       (1, 2, 195),
       (1, 3, 4),
       (2, 1, 10),
       (2, 2, 420),
       (2, 3, 3),
       (3, 1, 60),
       (3, 2, 235),
 (3, 3, 4);

select *from fruit_nutrients;

-- Questions:
-- 1. Insert a new fruit, "Avocado," with a green color, sweet and creamy taste,
and available in the fall season. Assign it a unique fruit_id.
INSERT INTO fruits (fruit_id, F_name, color, taste, season) VALUES (8, 'Avocado',
'Green', 'Sweet and creamy', 'Fall');
SELECT * FROM fruits;

-- 2. Find all fruits from the fruits table whose names start with the letter
'A'.
SELECT * FROM fruits WHERE F_name LIKE 'A%';

-- 3. List all fruit's (name, amount and taste) with their corresponding vitamin
C.
SELECT f.F_name AS Fruit, fn.amount AS Amount, f.taste AS Taste FROM fruits f
JOIN fruit_nutrients fn ON f.fruit_id = fn.fruit_id
JOIN nutrients n ON fn.nutrient_id = n.nutrient_id
WHERE n.N_name = 'Vitamin C';


-- 4. Change the taste of the fruit with fruit_id 5 to "Tart."
UPDATE fruits SET taste = 'Tart' WHERE fruit_id = 5;


-- 5. Remove all records from the fruit_nutrients table where the fruit_id is 3.
```

```sql
DELETE FROM fruit_nutrients WHERE fruit_id = 3;

-- 6. What is the average vitamin C content among all fruits?
SELECT AVG(fn.amount) AS Avg_Vitamin_C_Content FROM fruit_nutrients fn
JOIN nutrients n ON fn.nutrient_id = n.nutrient_id WHERE n.N_name = 'Vitamin C';

-- 7. Find all fruits that are red in color and have a sweet taste, ordered by
their amount in descending order.
SELECT * FROM fruits f
JOIN fruit_nutrients fn ON f.fruit_id = fn.fruit_id
JOIN nutrients n ON fn.nutrient_id = n.nutrient_id
WHERE f.color = 'Red' AND f.taste = 'Sweet'
ORDER BY fn.amount DESC;
```

OUTPUTS:

fruit_id	F_name	color	taste	season
1	Apple	Red	Sweet	Autumn
2	Banana	Yellow	Sweet	All year round
3	Orange	Orange	Sweet	Winter
4	Strawberry	Red	Sweet	Spring
5	Blueberry	Blue	Sweet	Summer
6	Pineapple	Yellow	Sweet and tangy	All year round
7	Mango	Yellow	Sweet	Summer

nutrient_id	N_name	unit
1	Vitamin C	mg
2	Potassium	mg
3	Fiber	g
4	Vitamin A	IU
5	Calcium	mg
6	Iron	mg

fruit_id	nutrient_id	amount
1	1	12
1	2	195
1	3	4
2	1	10
2	2	420
2	3	3
3	1	60
3	2	235
3	3	4

[1]

fruit_id	F_name	color	taste	season
1	Apple	Red	Sweet	Autumn
2	Banana	Yellow	Sweet	All year round
3	Orange	Orange	Sweet	Winter
4	Strawberry	Red	Sweet	Spring
5	Blueberry	Blue	Sweet	Summer
6	Pineapple	Yellow	Sweet and tangy	All year round
7	Mango	Yellow	Sweet	Summer
8	Avocado	Green	Sweet and creamy	Fall

[2]

fruit_id	F_name	color	taste	season
1	Apple	Red	Sweet	Autumn
8	Avocado	Green	Sweet and creamy	Fall

[3]

Fruit	Amount	Taste
Apple	12	Sweet
Banana	10	Sweet
Orange	60	Sweet

[4]

fruit_id	F_name	color	taste	season
1	Apple	Red	Sweet	Autumn
2	Banana	Yellow	Sweet	All year round
3	Orange	Orange	Sweet	Winter
4	Strawberry	Red	Sweet	Spring
5	Blueberry	Blue	Tart	Summer
6	Pineapple	Yellow	Sweet and tangy	All year round
7	Mango	Yellow	Sweet	Summer
8	Avocado	Green	Sweet and creamy	Fall

[5]

fruit_id	nutrient_id	amount
1	1	12
1	2	195
1	3	4
2	1	10
2	2	420
2	3	3

[6]

Avg_Vitamin_C_Content
11

Since we removed fruit_id = 3 in Question 5, thus, the only remaining fruits with Vitamin C are Apple →10 and Banana → 12. Therefore Average is 11.

[7]

fruit_id	F_name	color	taste	season	fruit_id	nutrient_id	amount	nutrient_id	N_name	unit
1	Apple	Red	Sweet	Autumn	1	2	195	2	Potassium	mg
1	Apple	Red	Sweet	Autumn	1	1	12	1	Vitamin C	mg
1	Apple	Red	Sweet	Autumn	1	3	4	3	Fiber	g

Final TABLES:

Fruit_nutrients

fruit_id	nutrient_id	amount
1	1	12
1	2	195
1	3	4
2	1	10
2	2	420
2	3	3

Fruits

fruit_id	F_name	color	taste	season
1	Apple	Red	Sweet	Autumn
2	Banana	Yellow	Sweet	All year round
3	Orange	Orange	Sweet	Winter
4	Strawberry	Red	Sweet	Spring
5	Blueberry	Blue	Tart	Summer
6	Pineapple	Yellow	Sweet and tangy	All year round
7	Mango	Yellow	Sweet	Summer
8	Avocado	Green	Sweet and creamy	Fall

Nutrients

nutrient_id	N_name	unit
1	Vitamin C	mg
2	Potassium	mg
3	Fiber	g
4	Vitamin A	IU
5	Calcium	mg
6	Iron	mg