Gym Member Analysis Report(SQL)

-- Create a View for Age Group Classification

```sql
CREATE VIEW fitness_data_with_age_group AS
SELECT
    *,
    CASE
        WHEN age <= 30 THEN 'Young'
        WHEN age BETWEEN 31 AND 45 THEN 'Mid-age'
        ELSE 'Old'
    END AS age_group
FROM fitness_data;
```

-- Analysis Queries

-- Average Age by Gender
```sql
SELECT
    gender AS "Gender",
    ROUND(AVG(age), 2) AS "Avg. Age"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg. Age
Male	38
Female	38

-- Age Group Distribution
```sql
SELECT
    age_group AS "Age Group",
    COUNT(age) AS "Total"
FROM fitness_data_with_age_group
GROUP BY age_group;
```

Age Group	Total
Old	330
Young	295
Mid-age	348

-- Male and Female Ratio
```sql
SELECT
    gender AS "Gender",
```

```
    COUNT(gender) AS "Total"
FROM fitness_data
GROUP BY gender;
```

Gender	Total
Male	511
Female	462

```
-- Average Weight and Height by Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(weight_kg), 2) AS "Avg. Weight",
    ROUND(AVG(height_m), 2) AS "Avg. Height"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg. Weight	Avg. Height
Male	85.53	1.79
Female	60.94	1.64

```
-- Average BPM by Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(avg_bpm), 2) AS "Avg. Avg. BPM"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg. Avg. BPM
Male	143
Female	143

```
-- Average Session Duration by Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(session_duration_hours), 2) AS "Avg. Session Hour"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg. Session Hour
Male	1.25
Female	1.26

```
-- Average Session Duration by experience
SELECT
        experience_Level AS "Experience Level",
    ROUND(AVG(session_duration_hours), 2) AS "Avg. Session Hour"
FROM fitness_data
```

```
GROUP BY experience_level;
```

Experience Level	Avg. Session Hour
2	1.25
3	1.76
1	1.01

-- Average Calories Burned per Hour

-- Overall
```
SELECT
    ROUND(AVG(calories_burned / session_duration_hours), 2) AS "Avg Calories Burned(1Hour)"
FROM fitness_data;
```

Avg Calories Burned(1Hour)
720.42

-- By Gender
```
SELECT
    gender AS "Gender",
    ROUND(AVG(calories_burned / session_duration_hours), 2) AS "Avg Calories Burned(1Hour)"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg Calories Burned(1Hour)
Male	753.07
Female	684.31

-- By Age Group
```
SELECT
    age_group AS "Age Group",
    ROUND(AVG(calories_burned / session_duration_hours), 2) AS "Avg Calories Burned(1Hour)"
FROM fitness_data_with_age_group
GROUP BY age_group;
```

Age Group	Avg Calories Burned(1Hour)
Old	683.48
Young	753.8
Mid-age	727.16

-- By Experience Level
```
SELECT
    experience_level AS "Experience Level",
    ROUND(AVG(calories_burned / session_duration_hours), 2) AS "Avg Calories Burned(1Hour)"
FROM fitness_data
GROUP BY experience_level;
```

Experience Level	Avg Calories Burned(1Hour)
2	722.42
3	719.4
1	718.79

```sql
-- By Workout Type
SELECT
    workout_type AS "Workout Type",
    ROUND(AVG(calories_burned / session_duration_hours), 2) AS "Avg Calories Burned(1Hour)"
FROM fitness_data
GROUP BY workout_type;
```

Workout Type	Avg Calories Burned(1Hour)
Yoga	716.52
Strength	724
HIIT	716.52
Cardio	723.85

```sql
-- Experience Level Distribution
SELECT
    experience_level AS "Experience Level",
    COUNT(experience_level) AS "Total"
FROM fitness_data
GROUP BY experience_level;
```

Experience Level	Total
2	406
3	191
1	376

```sql
-- Workout Type Distribution
SELECT
    workout_type AS "Workout Type",
    COUNT(workout_type) AS "Total"
FROM fitness_data
GROUP BY workout_type;
```

Workout Type	Total
Yoga	239
Strength	258
HIIT	221
Cardio	255

-- Average Fat Percentage

-- Overall

```sql
SELECT
    ROUND(AVG(fat_percentage), 2) AS "Avg. Fat Percentage"
FROM fitness_data;
```

Avg. Fat Percentage
24.98

```sql
-- By Age Group
SELECT
    age_group AS "Age Group",
    ROUND(AVG(fat_percentage), 2) AS "Avg. Fat Percentage"
FROM fitness_data_with_age_group
GROUP BY age_group;
```

Age Group	Avg. Fat Percentage
Old	24.98
Young	25.01
Mid-age	24.94

```sql
-- By Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(fat_percentage), 2) AS "Avg. Fat Percentage"
FROM fitness_data
GROUP BY gender;
```

Gender	Avg. Fat Percentage
Male	22.55
Female	27.66

```sql
-- By Experience Level
SELECT
    experience_level AS "Experience Level",
    ROUND(AVG(fat_percentage), 2) AS "Avg. Fat Percentage"
FROM fitness_data
GROUP BY experience_level;
```

Experience Level	Avg. Fat Percentage
2	27.31
3	14.79
1	27.63

-- Average Water Intake (Liters)

```sql
-- Overall
SELECT
```

```
    ROUND(AVG(water_intake_liters), 2) AS "Water Intake"
FROM fitness_data;
```

Water Intake
2.63

```
-- By Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(water_intake_liters), 2) AS "Water Intake"
FROM fitness_data
GROUP BY gender;
```

Gender	Water Intake
Male	3.01
Female	2.21

```
-- By Experience Level
SELECT
    experience_level AS "Experience Level",
    ROUND(AVG(water_intake_liters), 2) AS "Water Intake"
FROM fitness_data
GROUP BY experience_level;
```

Experience Level	Water Intake
2	2.48
3	3.12
1	2.53

```
-- By Age Group
SELECT
    age_group AS "Age Group",
    ROUND(AVG(water_intake_liters), 2) AS "Water Intake"
FROM fitness_data_with_age_group
GROUP BY age_group;
```

Age Group	Water Intake
Old	2.65
Young	2.59
Mid-age	2.64

-- Average BMI

```
-- Overall
SELECT
    ROUND(AVG(bmi), 2) AS "BMI"
FROM fitness_data;
```

BMI
24.91

```sql
-- By Gender
SELECT
    gender AS "Gender",
    ROUND(AVG(bmi), 2) AS "BMI"
FROM fitness_data
GROUP BY gender;
```

Gender	BMI
Male	26.89
Female	22.73

```sql
-- By Experience Level
SELECT
    experience_level AS "Experience Level",
    ROUND(AVG(bmi), 2) AS "BMI"
FROM fitness_data
GROUP BY experience_level;
```

Experience Level	BMI
2	25.26
3	24.75
1	24.62

```sql
-- By Age Group
SELECT
    age_group AS "Age Group",
    ROUND(AVG(bmi), 2) AS "BMI"
FROM fitness_data_with_age_group
GROUP BY age_group;
```

Age Group	BMI
Old	25.18
Young	25.42
Mid-age	24.22