Gym Membership Analysis

Mock Scenario

A local gym hired me to analyze a week's worth of membership data in order to get insight on membership demographics and behavior patterns. The purpose was to find trends about the current gym population and discover strategies for engaging potential new clients. The gym also wanted to learn about which amenities members utilize the most, such as group fitness classes and the sauna.

The client understands that an analysis of one week's worth of data may not find long-term comprehensive trends,but it can provide information to help with short-term decisions. In the future, the client hopes to implement a permanent member data collection and tracking system that will allow for more complete and in-depth data analysis.

Initial Data

-Imported a CSV dataset from Kaggle.com into MySQL WorkBench
(dataset can be found on my Source page)

-Inspected the dataset to see what cleaning needed to take place before analysis could occur.

-Removed several columns that weren't relevant to my specific questions
(ex. Removed the birthday and favorite drink columns)

-Renamed a column for better readability
(Renamed abonoment_type column to membership_type column)

-Checked for any Null Values

Overall: Not much data transformation was needed for this dataset

```sql
Create DATABASE gym;

USE gym;

SELECT * FROM membership;

-- Remove irrelevent data.
ALTER TABLE membership
DROP COLUMN birthday,
DROP COLUMN avg_time_check_in,
DROP COLUMN avg_time_check_out,
DROP COLUMN fav_drink,
DROP COLUMN personal_training,
DROP COLUMN attend_group_lesson,
Drop COLUMN fav_group_lesson,
DROP COLUMN name_personal_trainer,
DROP COLUMN days_per_week;

-- Rename Column for readability
ALTER TABLE membership
CHANGE abonoment_type membership_type text;

-- Looking to see if any columns allow Null values
DESCRIBE membership;

-- Discovered that all the columns allowed for Null values,so I needed to see if any Null Values existed in the data
SELECT *
FROM membership
WHERE id IS NULL
    OR gender IS NULL
    OR Age IS NULL
    OR membership_type IS NULL
    OR visit_per_week IS NULL
    OR attend_group_lesson IS NULL
    OR avg_time_in_gym IS NULL
    OR uses_sauna IS NULL;

-- Found no Null values & Data is ready to be analyzed
SELECT *
FROM membership;
```

id	gender	Age	membership_type	visit_per_week	attend_group_less...	avg_time_in...	uses_sauna
1	Female	27	Premium	4	True	116	True
2	Female	47	Standard	3	False	48	False
3	Male	41	Premium	1	True	123	False
4	Male	44	Premium	3	False	99	True

Q1: How many members visited the gym throughout the week?

```
1 •  SELECT COUNT(*) AS Total_Number_Of_Members
2    FROM membership;
```

100% 17:2

Result Grid | Filter Rows: Search | Export:

Total_Number_Of_Members
1000

A1: 1,000 members visited the gym during the week

Q2: What is the breakdown of gym attendance by membership type during the week?

```
1 •  SELECT membership_type,COUNT(*) AS Amount
2    FROM membership
3    GROUP BY membership_type;
```

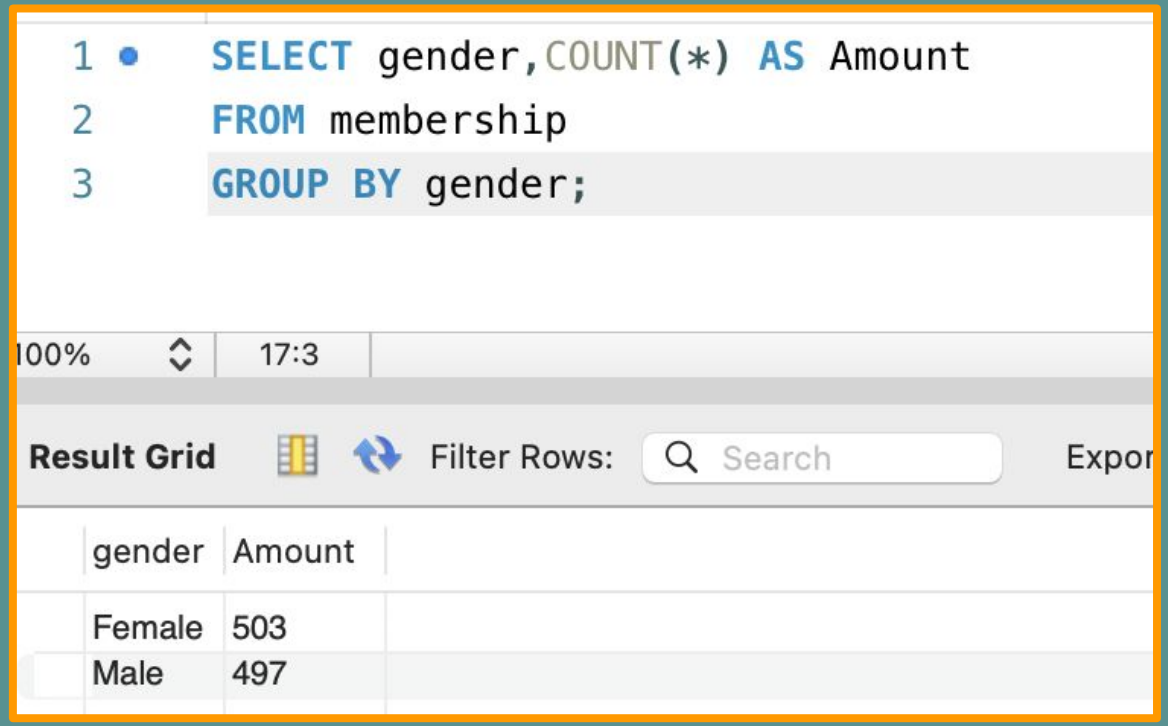
00% 26:3

Result Grid Filter Rows: Search Export:

membership_ty...	Amount
Premium	493
Standard	507

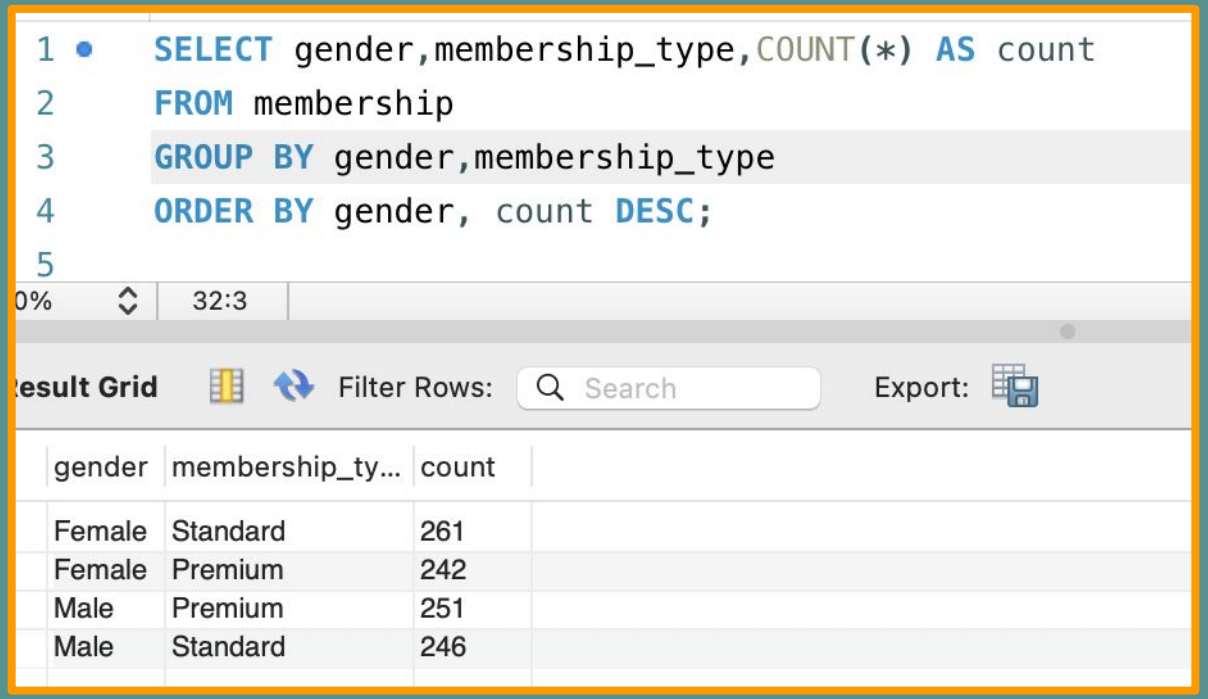
A2: The membership distribution for the week was almost equal, with slightly more Standard members holders visiting the gym than Premium members.

Q3: What is the breakdown of gym attendance by gender during the week?



A3: About the same number of female and male members visited the gym during the week.

Q4: Does gender affect membership type selection?



```
1  SELECT gender,membership_type,COUNT(*) AS count
2  FROM membership
3  GROUP BY gender,membership_type
4  ORDER BY gender, count DESC;
5
```

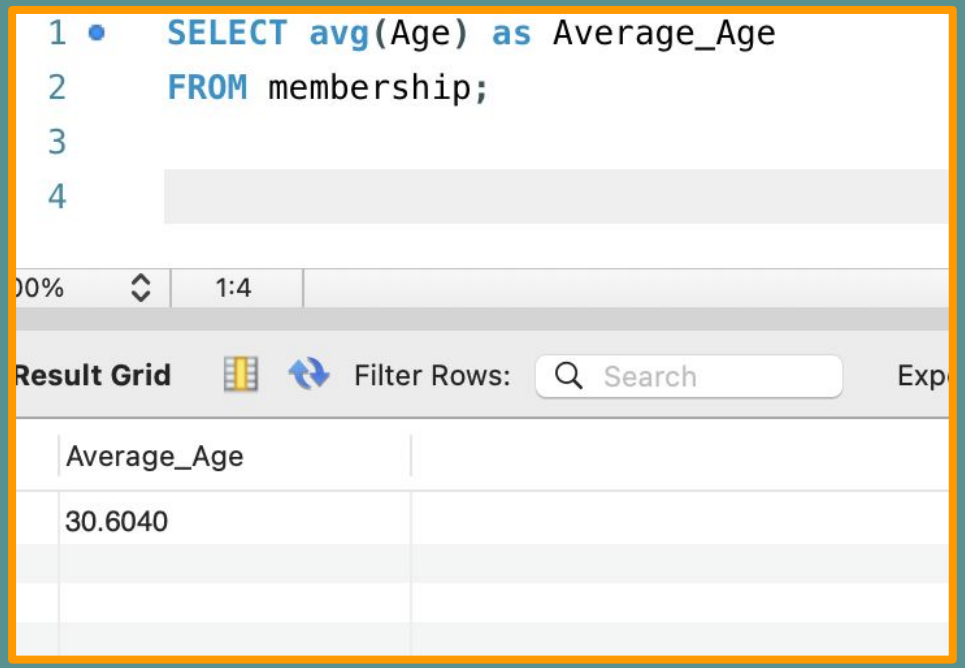
0% 32:3

esult Grid Filter Rows: Search Export:

gender	membership_ty...	count
Female	Standard	261
Female	Premium	242
Male	Premium	251
Male	Standard	246

A4: Based on the data, gender does not greatly affect membership type selection. Slightly more female members selected the Standard membership ,while slightly more male members picked the Premium membership.

Q5: What is the average age of gym members who visited during the week?



A5: During the week, the average age of gym members who visited was 30.6 years old.

Q6: What is the age distribution of gym members who visited during the week?

A6: The majority of members who visited during the week fall within the 20-29 age range. There are no members over 50 years old.

```sql
SELECT
    CASE
        WHEN age>=10 AND age<=19 THEN '10-19'
        WHEN age>=20 AND age<=29 THEN '20-29'
        WHEN age>=30 AND age<=39 THEN '30-39'
        WHEN age>=40 AND age<=49 THEN '40-49'
        WHEN age>=50 AND age<=59 THEN '50-59'
        ELSE '60+'
    END AS age_group,
    count(*) AS count
FROM membership
GROUP BY age_group
ORDER BY age_group;
```

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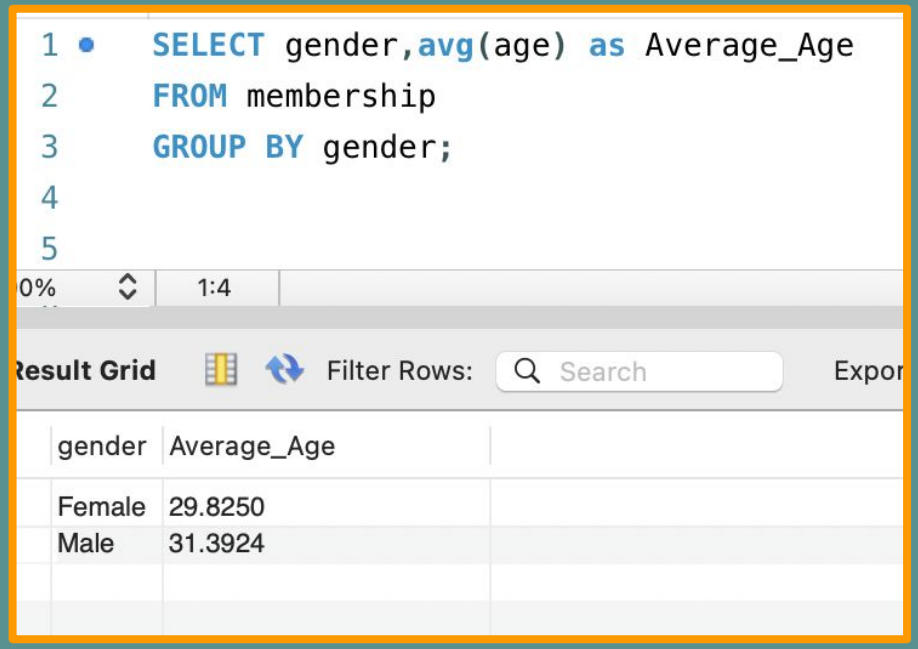
Result Grid Filter Rows: Search Export:

age_group	count
10-19	200
20-29	280
30-39	265
40-49	255

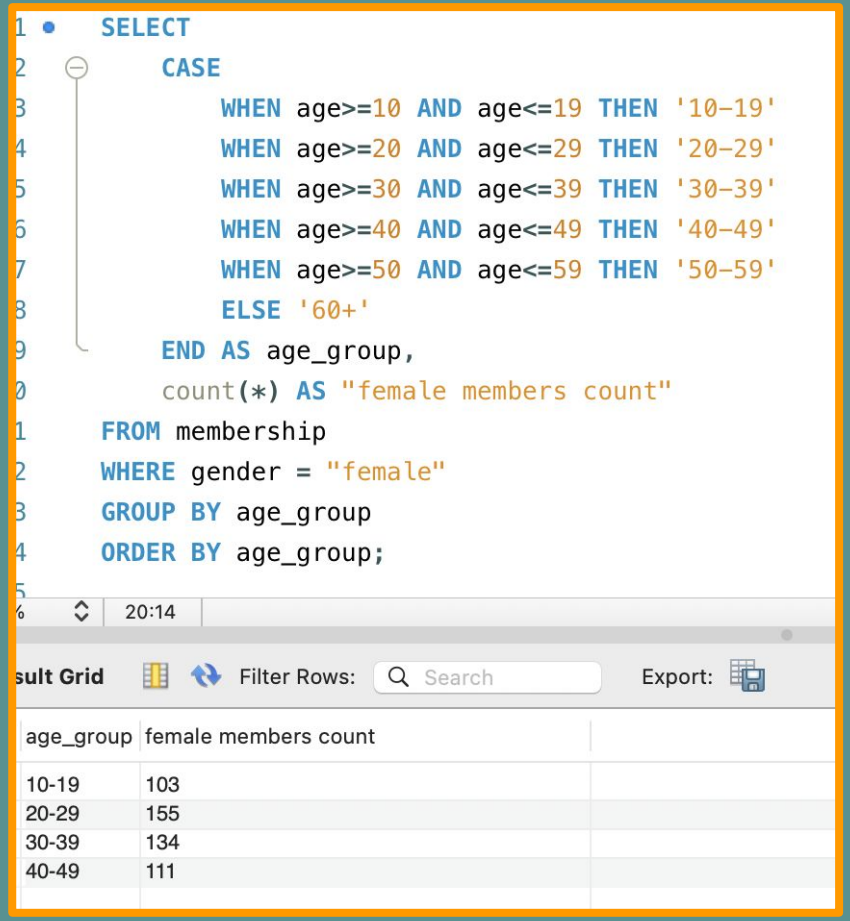
Q7: What is the average age of female gym members vs male gym members who attended during the week?



A7: During the week, the average age of female gym members was 29.8 years old, and the average age of male gym members was 31.4 years old.

Q8: What is the age distribution of female gym members who visited during the week?

A8: The majority of female gym members who visited during the week were in the 20-29 age group.



```
SELECT
    CASE
        WHEN age>=10 AND age<=19 THEN '10-19'
        WHEN age>=20 AND age<=29 THEN '20-29'
        WHEN age>=30 AND age<=39 THEN '30-39'
        WHEN age>=40 AND age<=49 THEN '40-49'
        WHEN age>=50 AND age<=59 THEN '50-59'
        ELSE '60+'
    END AS age_group,
    count(*) AS "female members count"
FROM membership
WHERE gender = "female"
GROUP BY age_group
ORDER BY age_group;
```

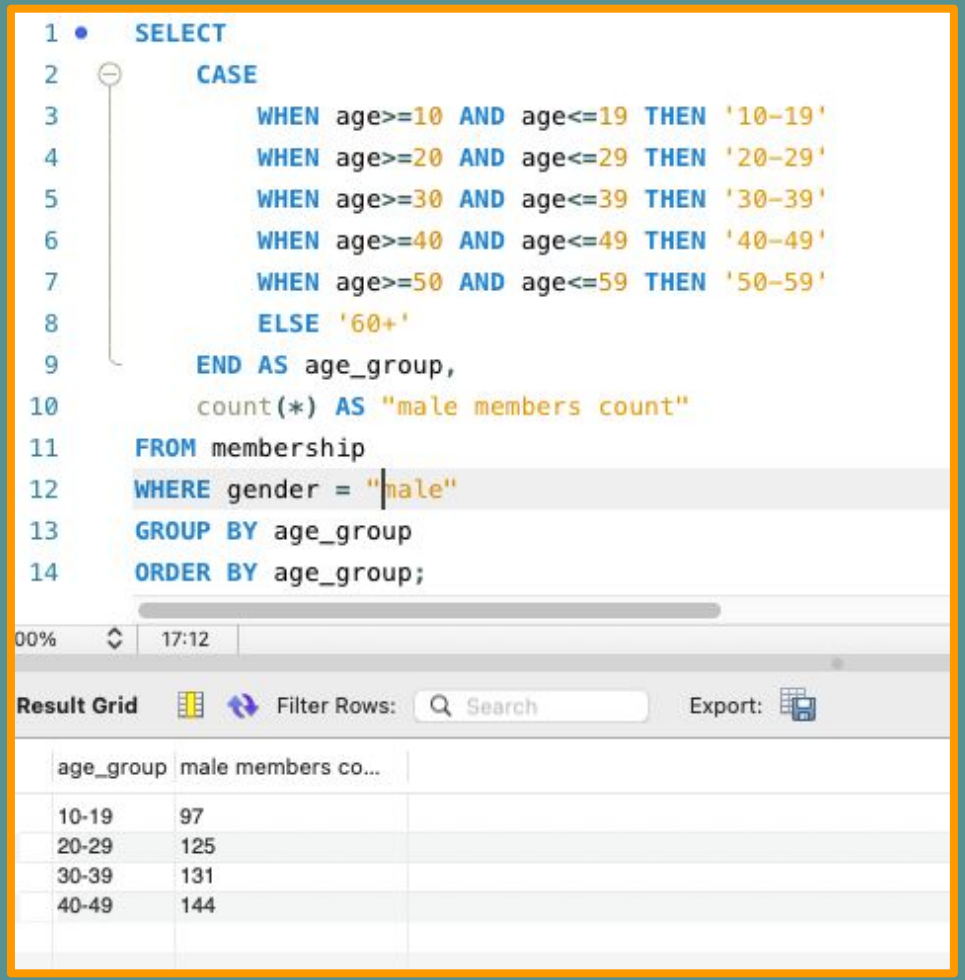
20:14

sult Grid Filter Rows: Search Export:

age_group	female members count
10-19	103
20-29	155
30-39	134
40-49	111

Q9: What is the age distribution of male gym members who visited during the week?

A9: The majority of male gym members who visited during the week were in the 40-49 age group.



```sql
SELECT
    CASE
        WHEN age>=10 AND age<=19 THEN '10-19'
        WHEN age>=20 AND age<=29 THEN '20-29'
        WHEN age>=30 AND age<=39 THEN '30-39'
        WHEN age>=40 AND age<=49 THEN '40-49'
        WHEN age>=50 AND age<=59 THEN '50-59'
        ELSE '60+'
    END AS age_group,
    count(*) AS "male members count"
FROM membership
WHERE gender = "male"
GROUP BY age_group
ORDER BY age_group;
```

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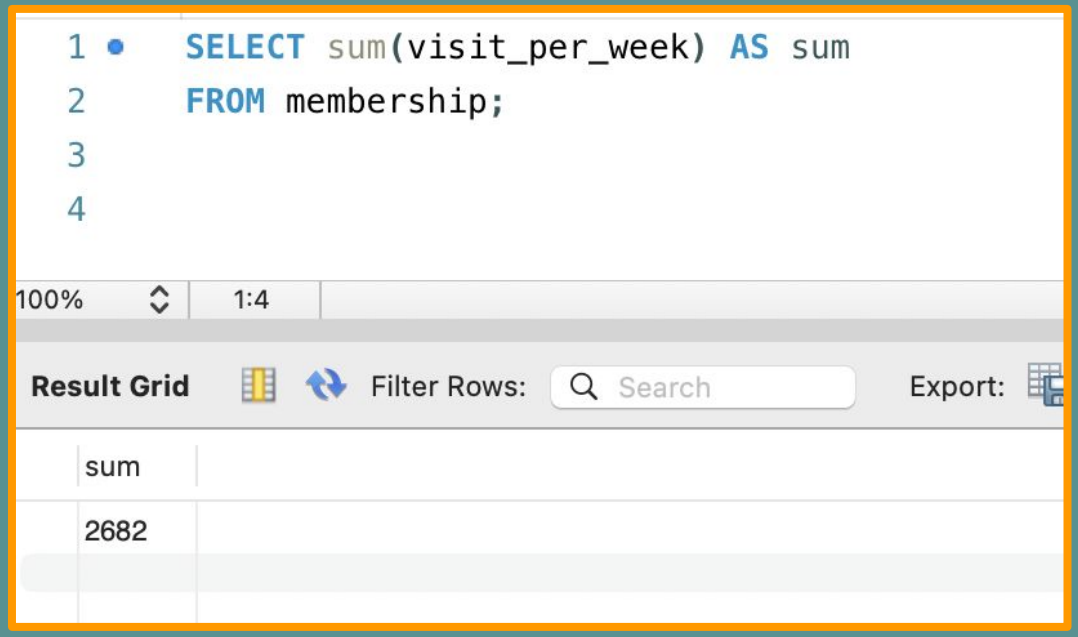
Result Grid Filter Rows: Search Export:

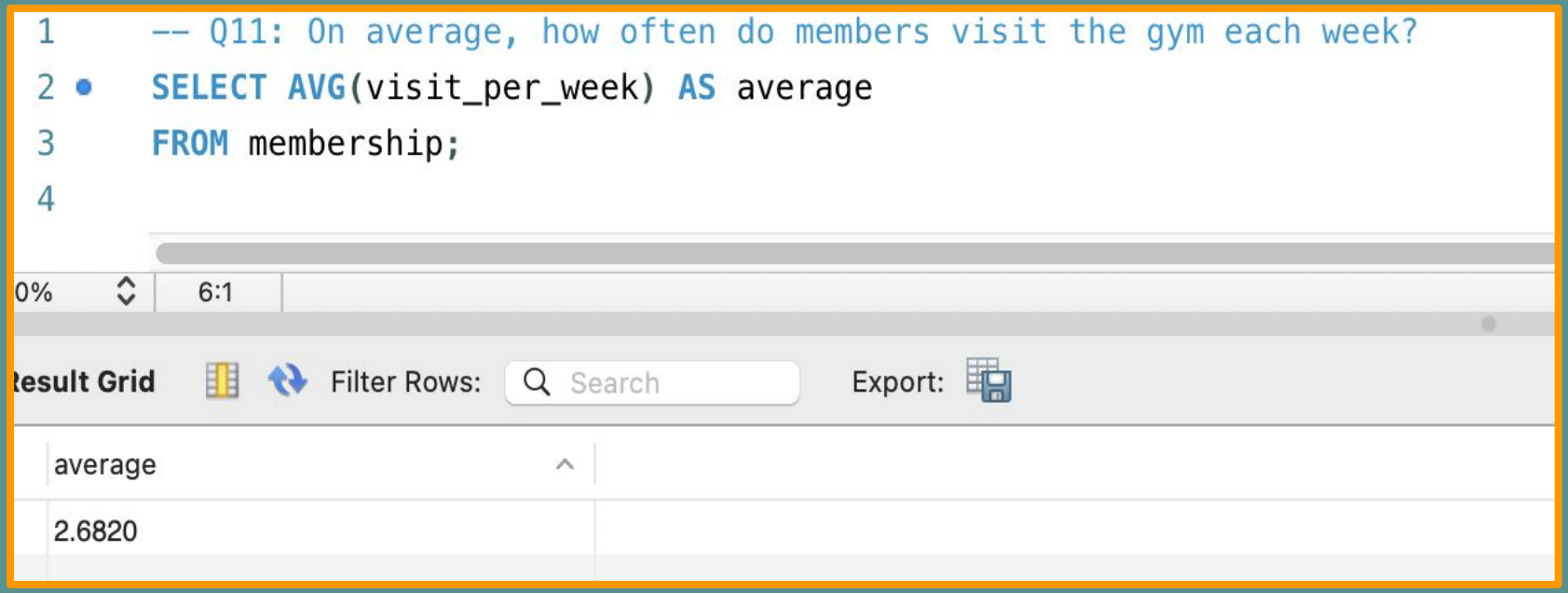
age_group	male members co...
10-19	97
20-29	125
30-39	131
40-49	144

Q10: How many visits to the gym occurred during the week?



A10: The gym got 2,682 visits during the week.

Q11: On average, how often do members visit the gym each week?



A11: On average, each member made 2.7 gym visits during the week

Q12: How does the average number of gym visits during the week vary by membership type?

```
1  -- Q12:How does the average number of gym visits during the week vary by membership type?
2  SELECT membership_type,avg(visit_per_week) AS average
3  FROM membership
4  GROUP BY membership_type;
5
```

100% 1:5

Result Grid Filter Rows: Search Export:

membership_type	average
Premium	2.6836
Standard	2.6805

A12: Membership type did not impact the average number of visits during the week.

Q13: How does the average number of gym visits during the week vary by membership type and gender?

```
1   -- Q13:How does the average number of gym visits during the week vary by membership type and gender?
2   SELECT gender,membership_type,avg(visit_per_week) AS average
3   FROM membership
4   GROUP BY gender,membership_type;
5
```

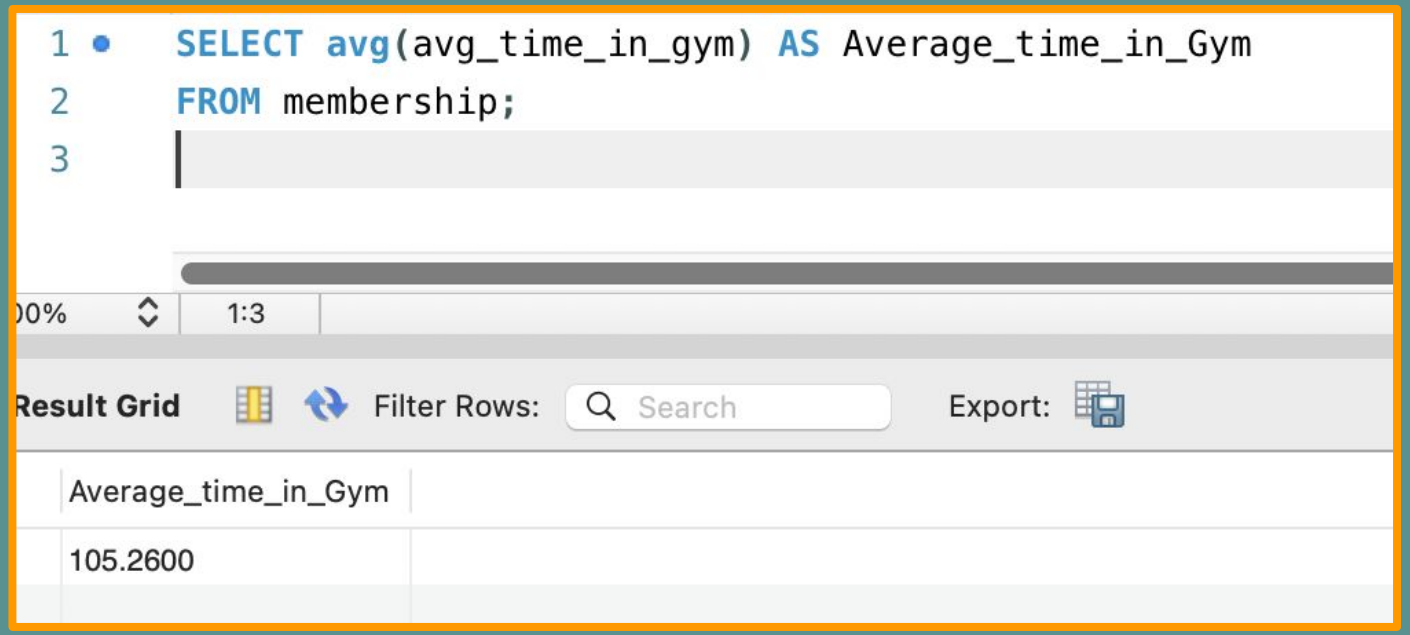
0% 1:5

Result Grid Filter Rows: Search Export:

gender	membership_type	average
Female	Premium	2.6777
Female	Standard	2.7548
Male	Premium	2.6892
Male	Standard	2.6016

A13: Average gym attendance during the week remained consistent regardless of membership type or gender.

Q14: What is the average amount of time a member spends in the gym during the week?



A14: On average, members spent 1 hour and 45 minutes in the gym during the week.

Q15: Does gender affect the average amount of time a member spends in the gym during the week?

```
1 •  SELECT gender,avg(avg_time_in_gym) AS Average_time_in_Gym
2    FROM membership
3    GROUP BY gender;
4
```

00% 1:4

Result Grid | Filter Rows: Search | Export:

gender	Average_time_in_Gym
Female	106.2863
Male	104.2213

A15: On average, men and women spent approximately the same amount of time in the gym during the week.

Q16: Does gender and membership type affect the average amount of time a member spends in the gym during the week?

```
1 •  SELECT gender,membership_type,avg(avg_time_in_gym) AS average_amount_of_time
2    FROM membership
3    GROUP BY gender,membership_type;
```

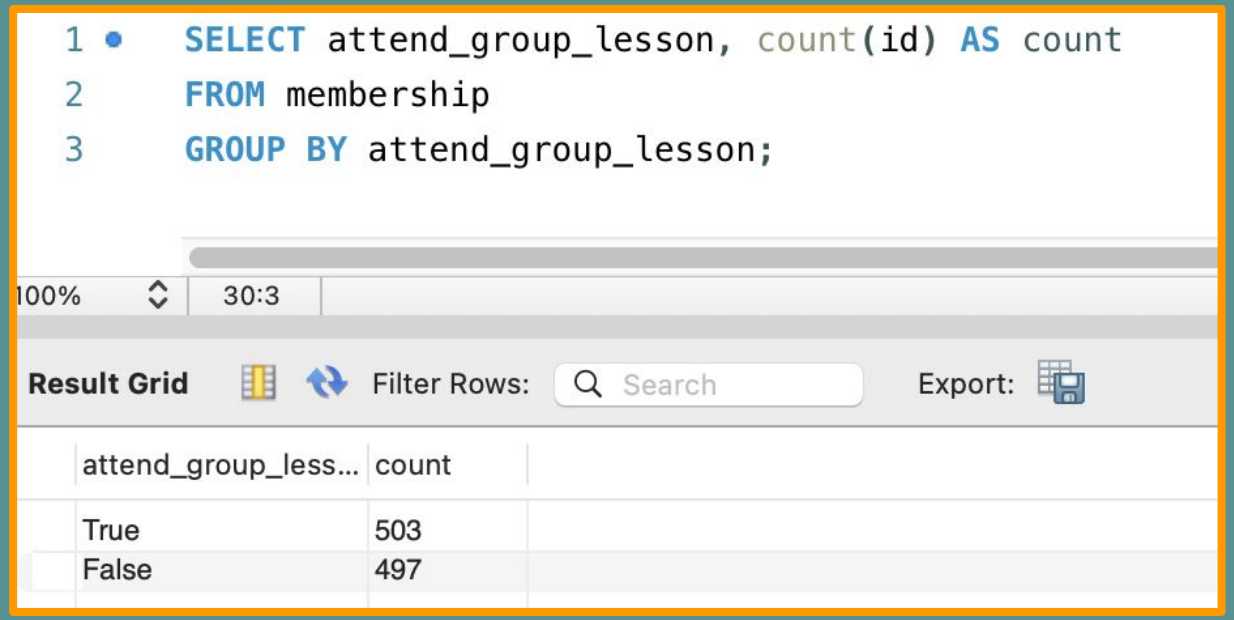
0% 33:3

esult Grid Filter Rows: Search Export:

gender	membership_type	average_amount_of_ti...
Female	Premium	104.8719
Female	Standard	107.5977
Male	Premium	104.9442
Male	Standard	103.4837

A16: Members spend approximately the same amount of time in the gym during the week regardless of their gender or membership type. Women with a Standard membership averaged slightly more time in the gym during the week.

Q17: How many members attend group fitness classes during the week?



A17: Around 50% of weekly gym members attended a group fitness class during the week

Q18: Does gender impact group class attendance during the week?

```
1 •  SELECT gender,attend_group_lesson, count(gender) AS count
2    FROM membership
3    GROUP BY attend_group_lesson,gender;
```

0% 37:3

esult Grid Filter Rows: Search Export:

gender	attend_group_less...	count
Female	True	248
Female	False	255
Male	True	255
Male	False	242

A18: Gender slightly affected group fitness attendance during the week. Nearly half of weekly male and female members attended a group fitness class. Men attended group fitness classes slightly more than woman.

Q19: Does membership type impact group class attendance during the week?

```
1 •  SELECT membership_type,attend_group_lesson, count(membership_type) AS count
2    FROM membership
3    GROUP BY membership_type, attend_group_lesson
4    ORDER BY membership_type;
```

00% 26:4

Result Grid | Filter Rows: Search | Export:

membership_type	attend_group_less...	count
Premium	False	246
Premium	True	247
Standard	False	251
Standard	True	256

A19: There was no significant difference in group fitness class attendance between membership types during the week.

Q20: Does gender and membership type affect weekly group fitness class attendance during the week?

```
1  SELECT gender,membership_type,attend_group_lesson,count(gender) AS count
2  FROM membership
3  GROUP BY gender,membership_type,attend_group_lesson
4  ORDER BY gender,membership_type,count DESC;
```

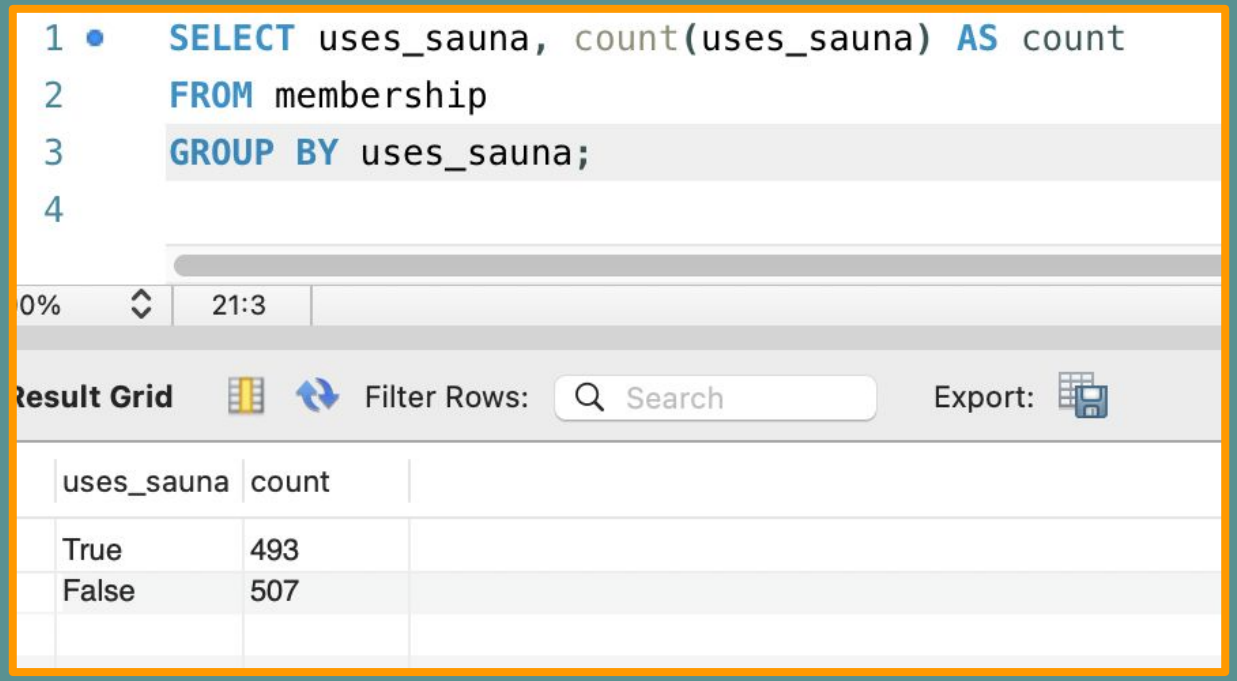
00% 44:4

Result Grid Filter Rows: Search Export:

gender	membership_type	attend_group_less...	count
Female	Premium	False	122
Female	Premium	True	120
Female	Standard	False	133
Female	Standard	True	128
Male	Premium	True	127
Male	Premium	False	124
Male	Standard	True	128
Male	Standard	False	118

A20: Neither gender nor membership type had a strong effect on group fitness class attendance during the week. Members who are male and have a standard membership attended the fewest amount of group fitness class during the week.

Q21: How many members use the sauna during the week?



```
1  SELECT uses_sauna, count(uses_sauna) AS count
2  FROM membership
3  GROUP BY uses_sauna;
4
```

0% 21:3

Result Grid Filter Rows: Search Export:

uses_sauna	count
True	493
False	507

A21: Throughout the week, nearly 50% of members utilized the sauna amenity.

Q22: Does gender affect sauna usage during the week?

```
1  SELECT gender,uses_sauna, count(uses_sauna) AS count
2  FROM membership
3  GROUP BY gender,uses_sauna
4  ORDER BY gender;
```

00% 16:4

Result Grid Filter Rows: Search Export:

gender	uses_sauna	count
Female	False	262
Female	True	241
Male	False	245
Male	True	252

A22: Gender did not significantly affect sauna usage during the week. About 50% of male and female members used the sauna during the week. Male members used the sauna slightly more than female members.

Q23: Does membership type affect sauna usage during the week?

```sql
SELECT membership_type,uses_sauna, count(uses_sauna) AS count
FROM membership
GROUP BY membership_type,uses_sauna
ORDER BY membership_type;
```

100% 16:2

Result Grid Filter Rows: Search Export:

membership_type	uses_sauna	count
Premium	False	236
Premium	True	257
Standard	False	271
Standard	True	236

A23: Membership type didn’t significantly impact sauna usage during the week. Premium members were slightly more likely to use the sauna during the week than Standard members.

Q24: Does membership type and gender affect sauna usage during the week?

```
1 •  SELECT gender,membership_type,uses_sauna, count(uses_sauna) AS count
2    FROM membership
3    GROUP BY gender,membership_type,uses_sauna
4    ORDER BY gender,membership_type, count DESC;
```

0% 45:4

esult Grid Filter Rows: Search Export:

g...	membership_type	uses_sauna	count
Female	Premium	False	124
Female	Premium	True	118
Female	Standard	False	138
Female	Standard	True	123
Male	Premium	True	139
Male	Premium	False	112
Male	Standard	False	133
Male	Standard	True	113

A24: Male premium members used the sauna at a slightly higher rate than other groups during the week. However, overall sauna usage did not vary significantly across gender and membership type during the week.

Brief Summary of Findings

Based on my data analysis, the gym had **1000 unique visitors** during this week, The gym's attendance was relatively evenly distributed among gender and membership type.

The average **member's age was 30.6 years old**. The average female member was 29.8 years old, and the average male member was 31.4 years old. The age distribution among members shows a mostly young to middle age client base. There were no members over 50 years old.

The gym had **2,682 total visits** during the week. On average, members **visited the gym 2.5 times week,** and this pattern stayed the same across gender and membership type. The average time spent in the gym during the week was **105.3 mins**, and this also remained relatively the same across gender and membership type.

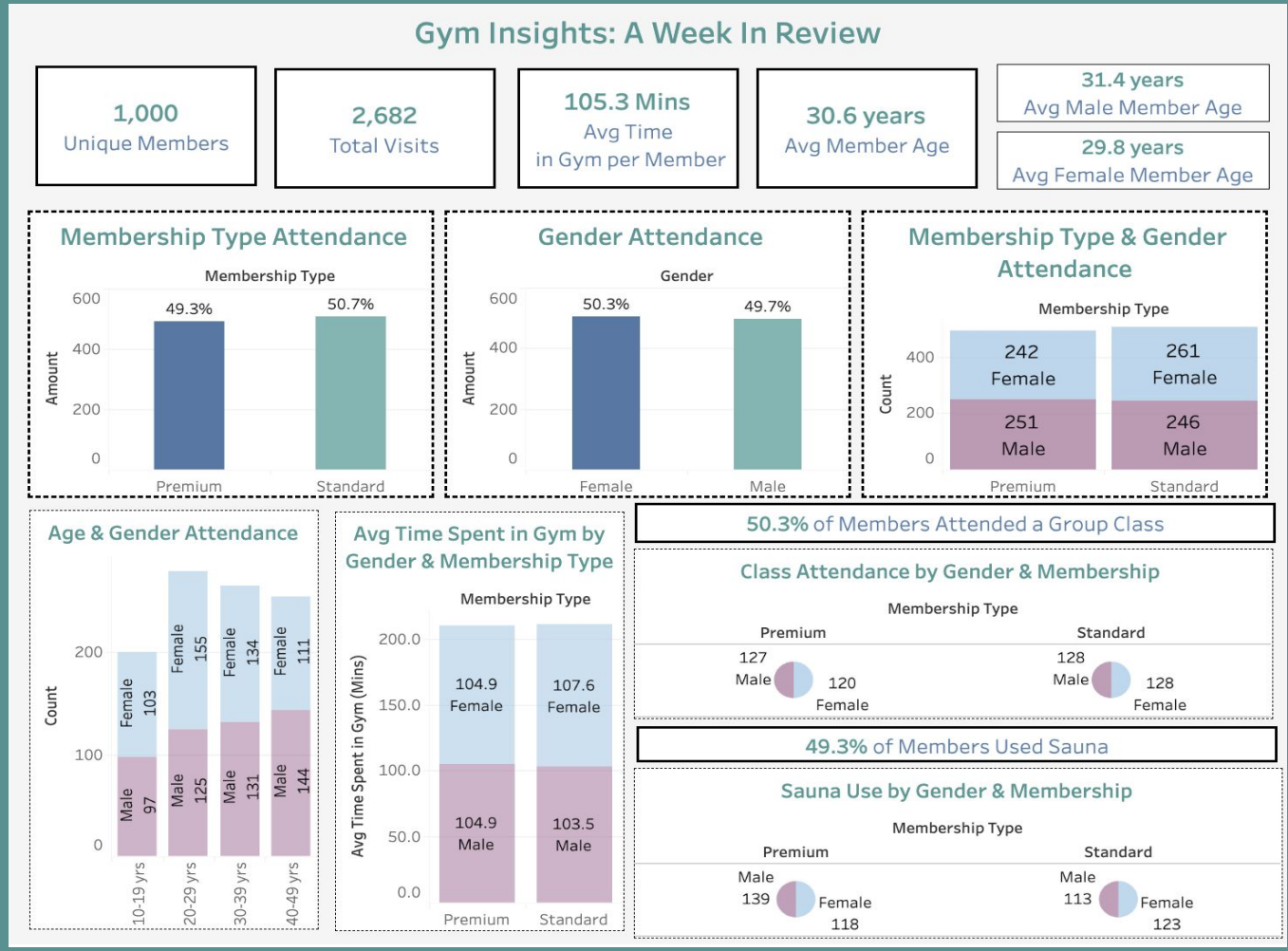
50.3 % of members attended a group fitness class while at the gym. Gender or membership type did not appear to affect group fitness class attendance.

49.3% of members used the sauna amenity while at the gym. Gender or membership type did not appear to affect sauna usage.

Tableau Dashboard

I created a dashboard via Tableau to highlight the findings from the data analysis

Link to the worksheet: https://public.tableau.com/shared/7NT2PRMXB?:display_count=n&:origin=viz_share_link



Next Steps:

Depending on the gym owner's business plans, the analysis could be used to inform future decisions. Here are a few examples:

- The owner could work on marketing campaigns to bring in older clients or do further research into why the gym does not seem to attract older members.

- If planning to built another gym, the owner might want to include a sauna and group fitness class rooms,because they were popular amenities among the members.

- If the owner wants to increase the percentage of premium membership holders, research such as membership surveys and interviews could be used to find out what factors influence membership type selection.

Sources

My gym membership dataset:

https://www.kaggle.com/datasets/ka66ledata/gym-membership-dataset