Cyclistic riders: **casual riders** and **annual members**

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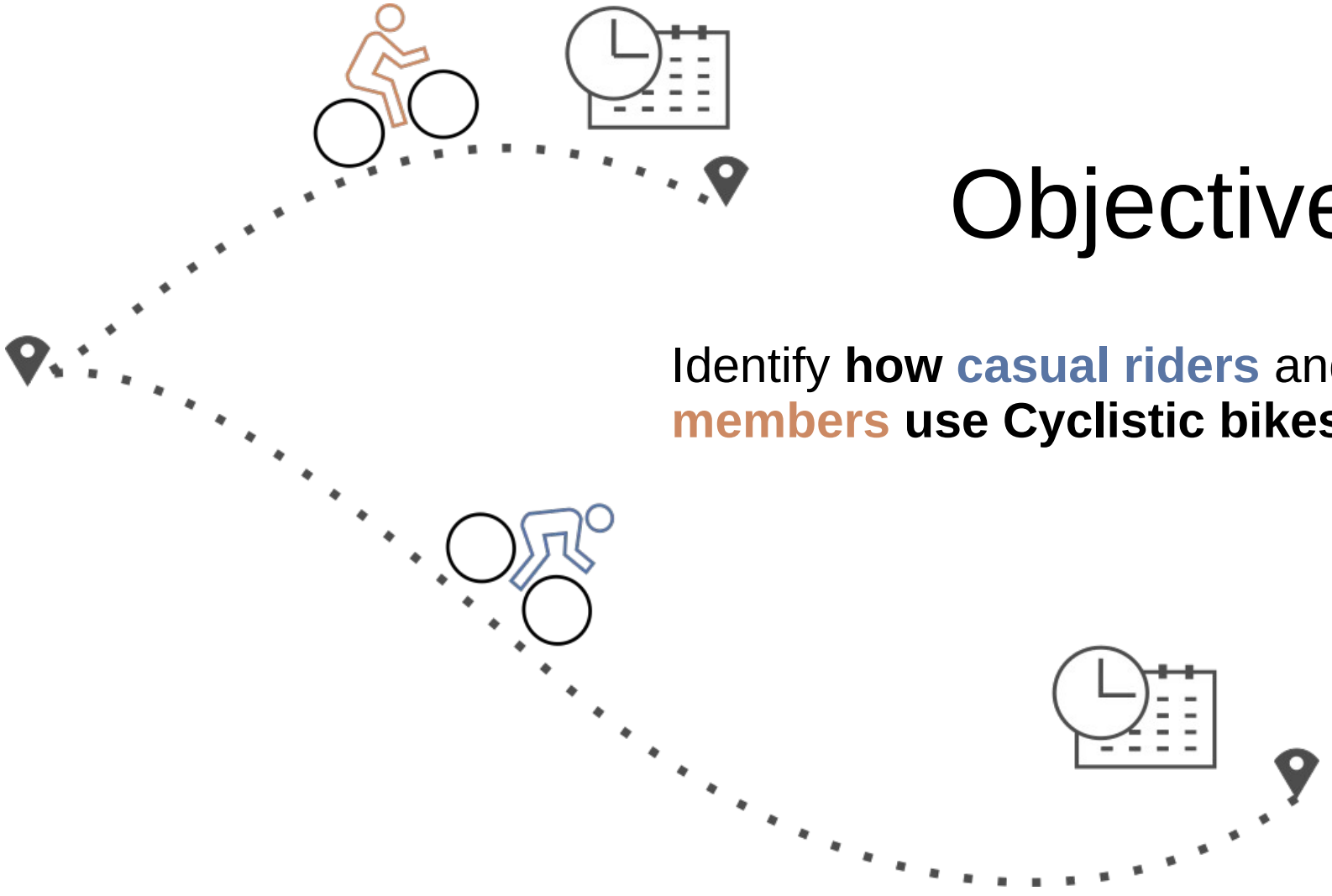
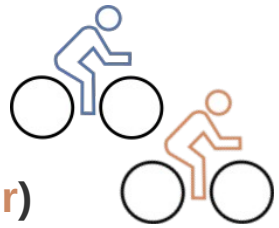


Objective

Identify **how casual riders** and **annual members** **use Cyclistic bikes differently**.

Data used

For every cyclistic trip:



Rider type
(casual / member)

Start station, date and time

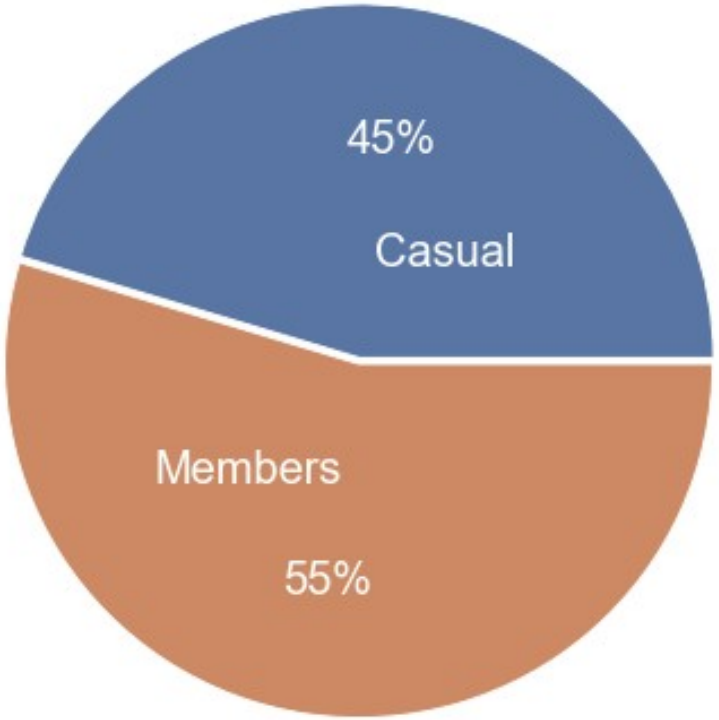
End station, date and time

Data for **one year:**
09/2020 - Jul/2021

Total rides*:
4.831.096

*After data cleaning

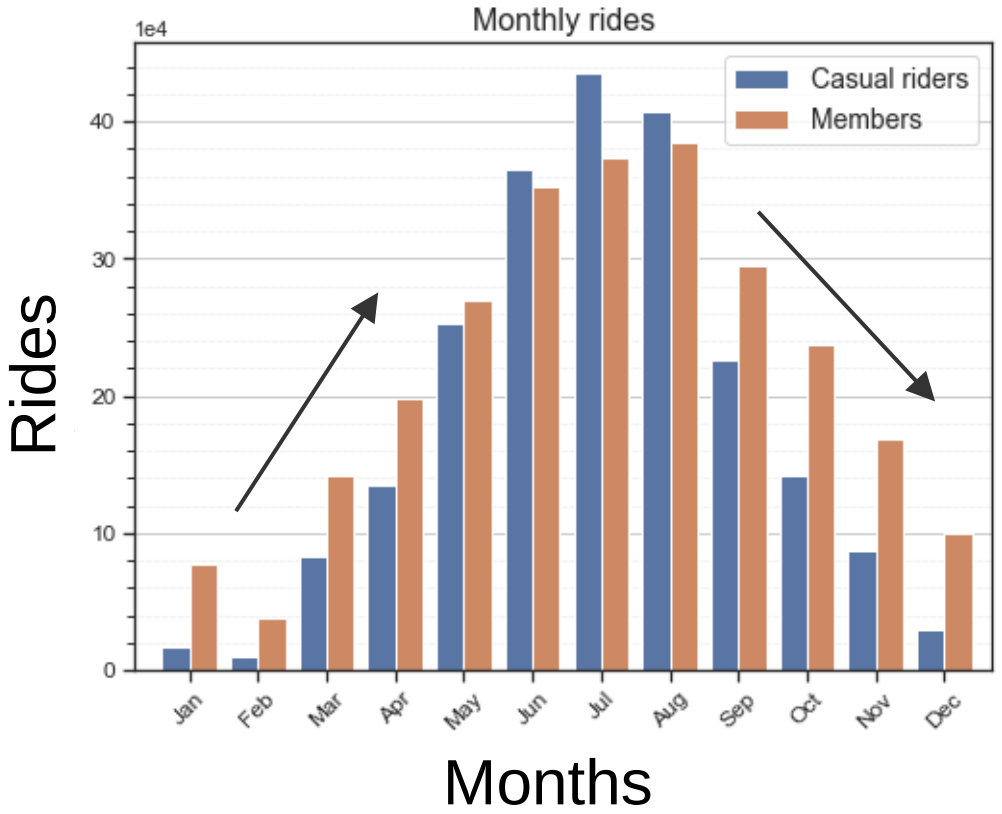
Cyclistic rides per rider type



For a period of **12 months**, **casual riders** make **45%** of all rides

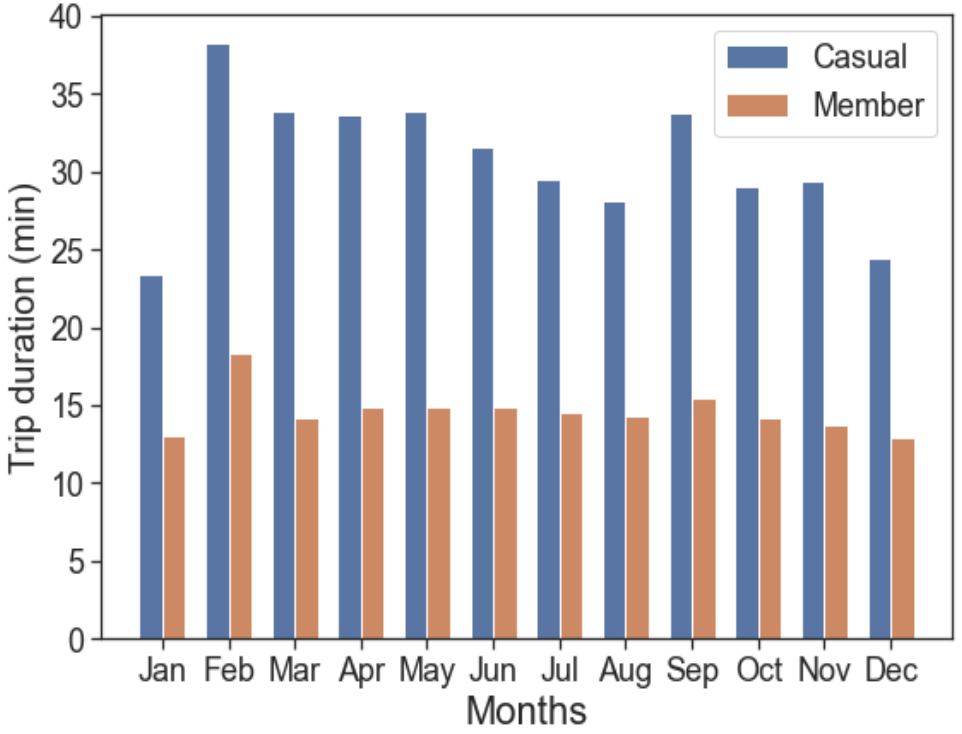
Casual riders	Members	Total
2.2M	**2.6M**	**4.8M**

Monthly analysis



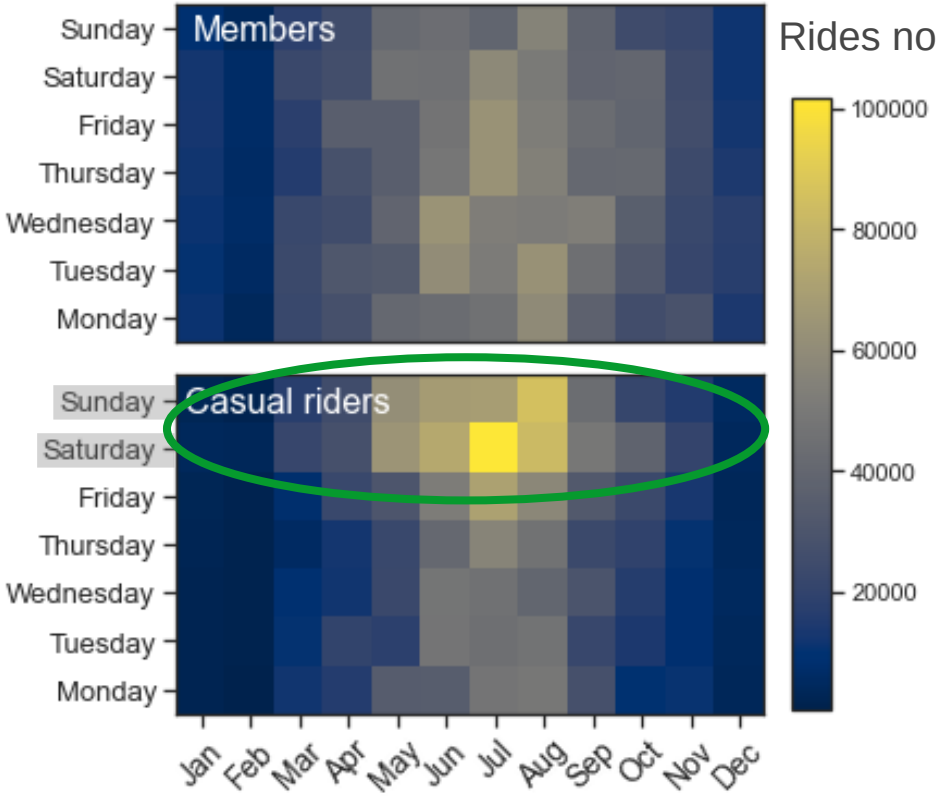
- Rides:
  - ➔ Increase from **March**
  - ➔ Decrease from **September**
- Peak during **summer months**
  Preferred month:
  - ➔ **July** for **casual riders**
  - ➔ **August** for **members**

Monthly analysis: trip duration



- **Casual riders** trip duration is **more** than **members** throught the year.

Day-of-the-week analysis per month



- **Casual riders** use cyclistic more on **weekends**.

- **Members** don’t have a strong preference.

Prefered day per month

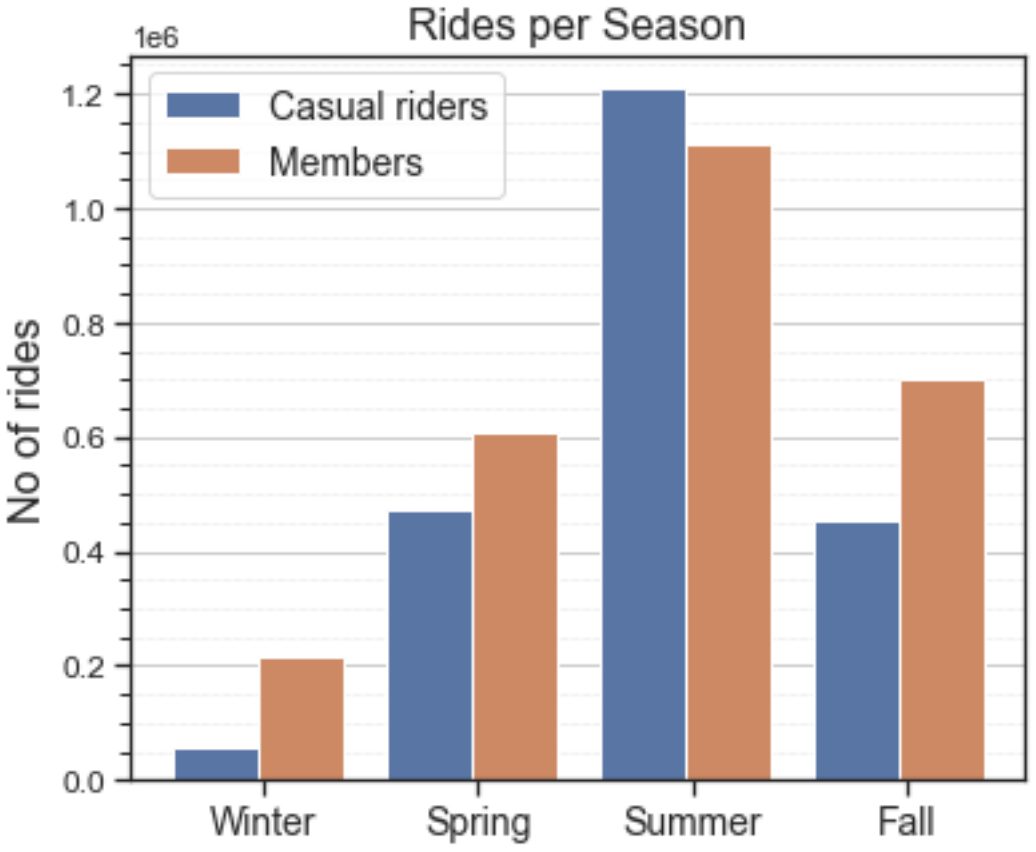
Month	Prefered day (Percent of month*)	
	Casual	Members
January	Sat. (22%)	Frid. (16%)
February	Sat. (34%)	Wed. (17%)
March	Sat. (26%)	Tues. (16%)
April	Sat. (20%)	Frid. (18%)
May	Sat. (25%)	Sat. (17%)
June	Sat. (20%)	Thur. (18%)
July	Sat. (23%)	Wed. (17%)
August	Sun. (21%)	Tue. (16%)
September	Sat. (22%)	Wed. (18%)
October	Sat. (27%)	Thur. (17%)
November	Sat. (24%)	Mon. (17%)
December	Sun. (17%)	Wed. (17%)

*Percent is of rides per month per member/casual.

- **Casual riders** prefer **Saturdays** (**20-26%**) (Except Aug. and Dec.).

- **Member** riders don't have a strong preference, but prefer weekdays (except May)

Seasonal analysis



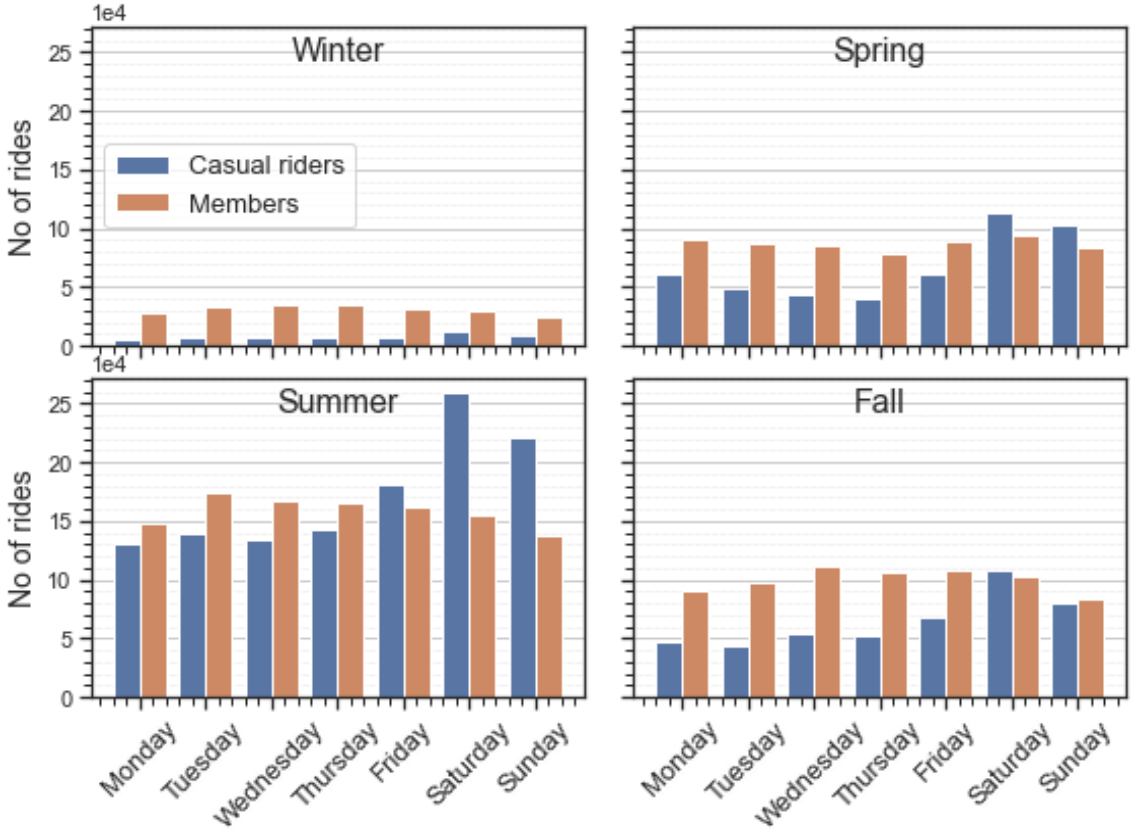
- Rides **peak** during **summer**.

- **Casual rides** are **more** than **member rides** during **peak season**.

- **Winter** has the **less** no of rides (for both casual riders and members)**.**

*Winter: 01Dec-28Feb, Spring: 01Mar-31May, Summer: 01Jun-31Aug, Fall: 01Sep-31Nov

Days of the week (per season)



- **Casual** rides are more during **weekends**. During summer, Fridays are also preferered.

- **Member** rides are more uniformly distributed between days.

Seasonal round trips

- **Casual riders** prefer round trips **more** than **Members**.
  - **~11 %** of all casuals
  - **3 %** of members

- **More round trips** during the **weekdays**,
  - **Except spring** for **casuals** were they are the same during the weekday and for the weekend.

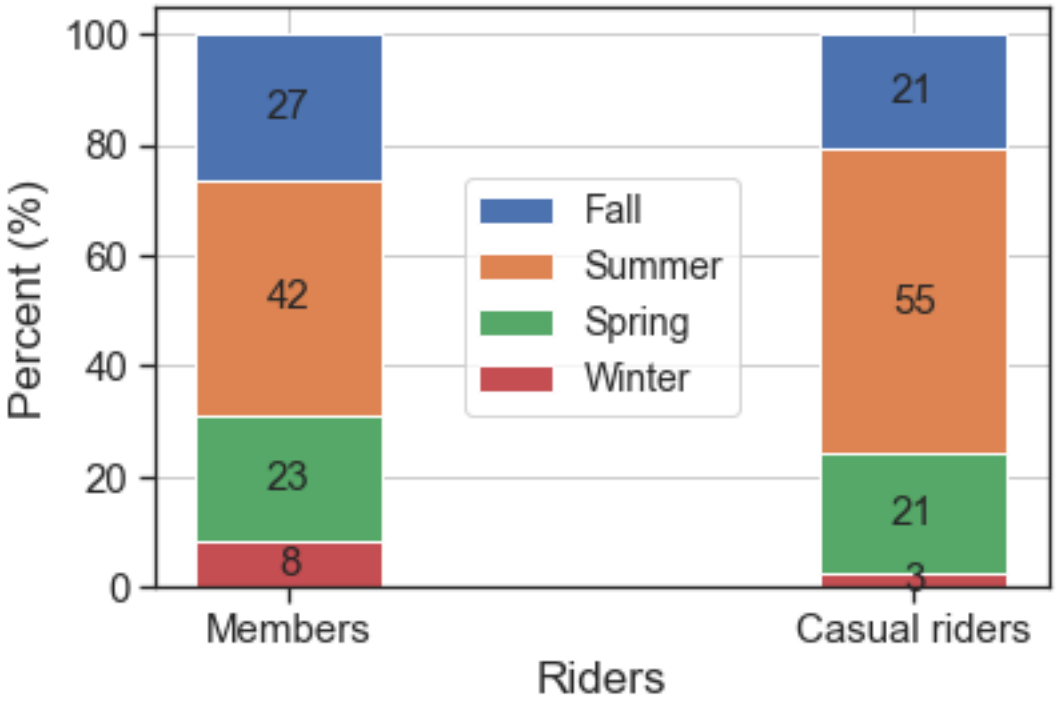
- Per day analysis* showed that:
  - **Casuals** do more round trips on **weekends**
  - **Members** do the same round trips any day of the week.

Season	Week period	Casuals (%)	Members (%)
Winter	Weekday	6	2
	Weekend	4	1
	Week	10	3
Spring	Weekday	6	2
	Weekend	6	1
	Week	12	3
Summer	Weekday	5	2
	Weekend	3	1
	Week	8	2
Autumn	Weekday	7	2
	Weekend	5	1
	Week	12	3

*Appendix A

Focusing on summer

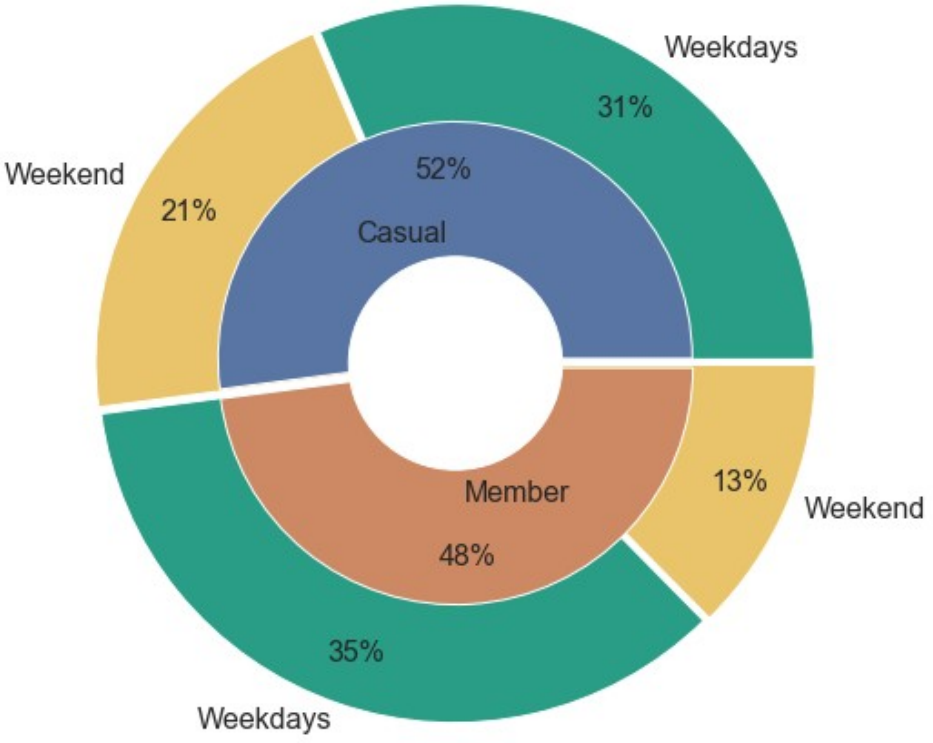
The peak season



Summer rides during weekdays and weekend

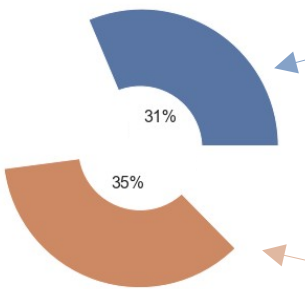
- **Most rides** are during the **weekdays**, for both **casual riders** and **members**

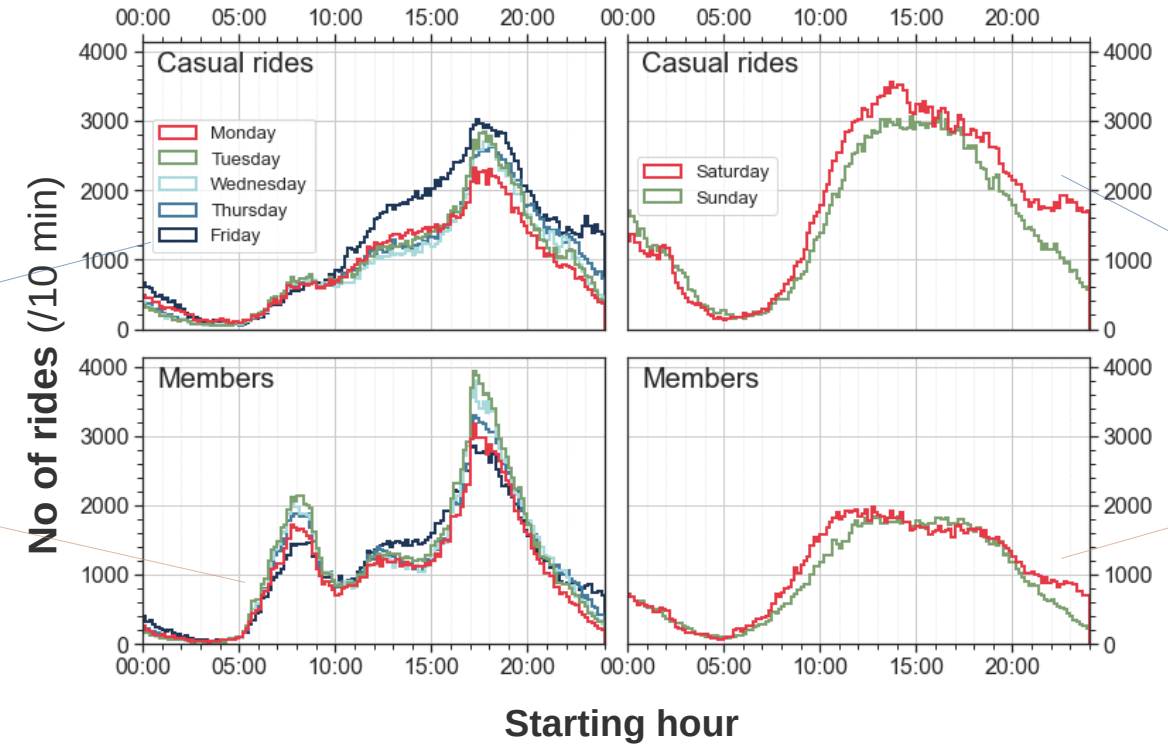
- **Casual rides** are **more** than **member rides** during the **weekend**.



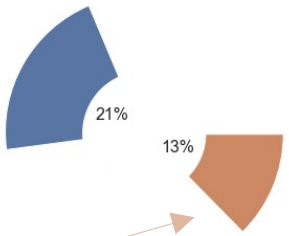
Summer analysis: Day of the week hourly analysis

Weekdays:





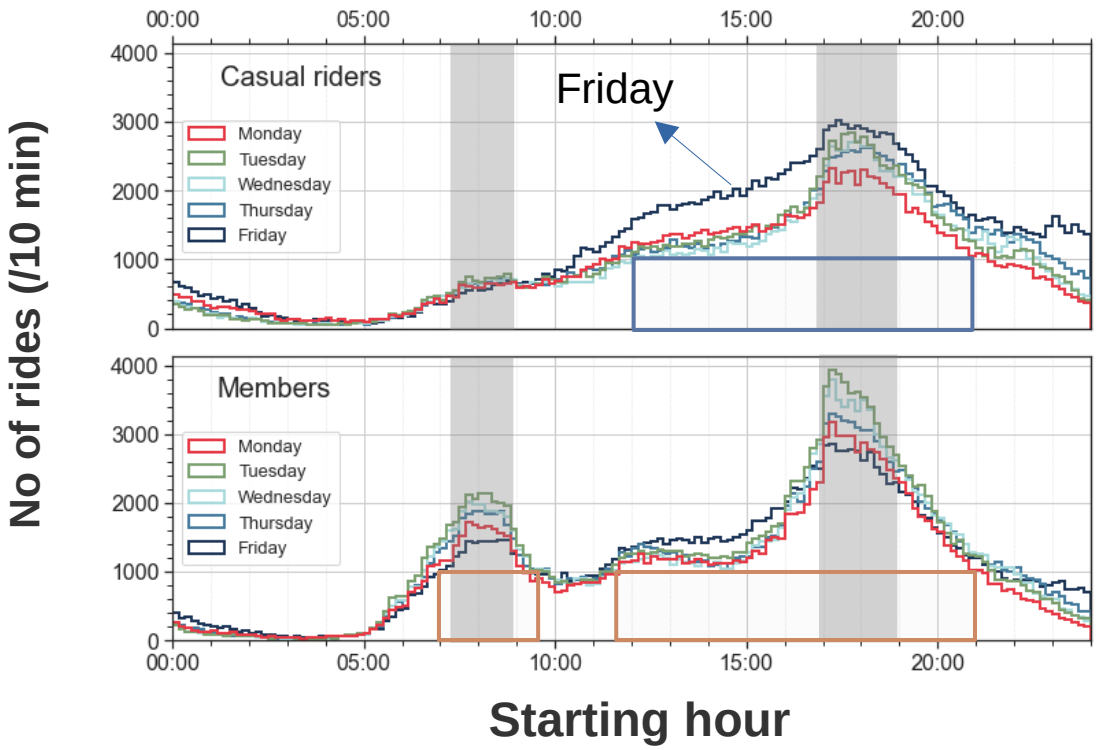
Weekend:



*All seasons hourly analysis in appendix A

Summer analysis: hourly analysis

Weekdays



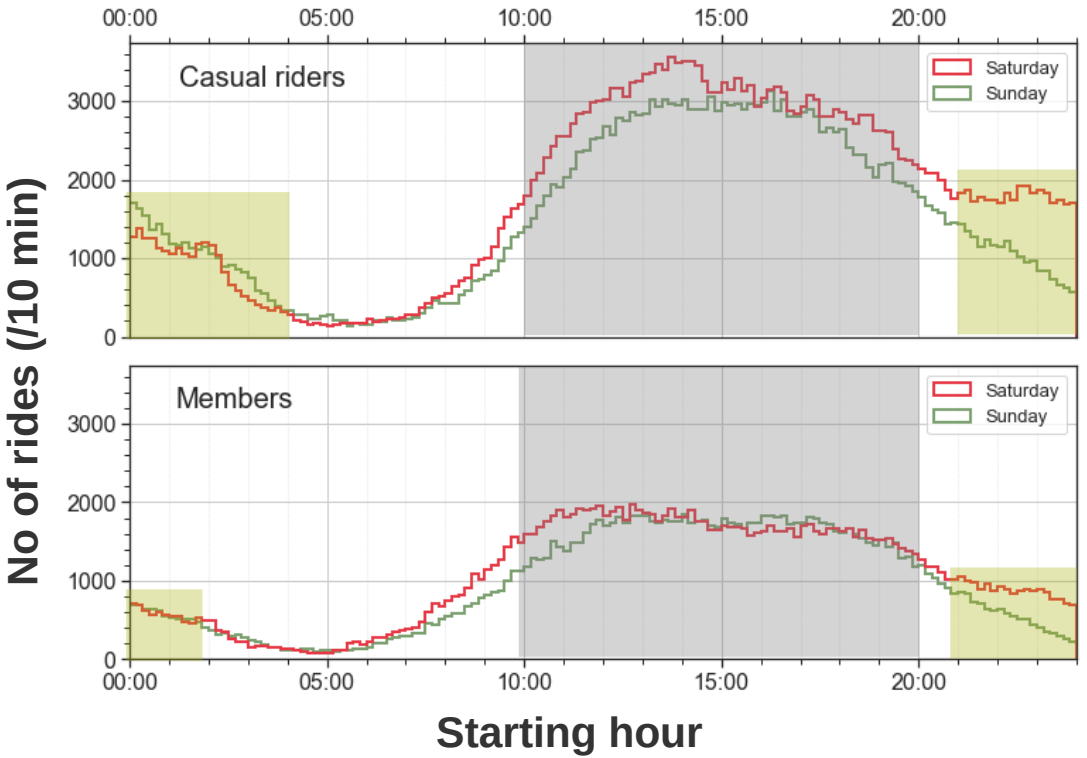
Key take aways:

- Compared to **member**, **casual rides**:
  - ➔ Are much **lower during morning hours**.
  - ➔ have **more** rides during **Friday**.
- **Both casual** and **member** rides peak between **17:00–19:00**.
- **Increased rides zone** (> 1000 rides)
  12:00 – 21:00 for casuals,
  07:00-09:30 & 11:30 – 21:00 for members

*More details in appendix B

Summer analysis: hourly analysis

Weekend

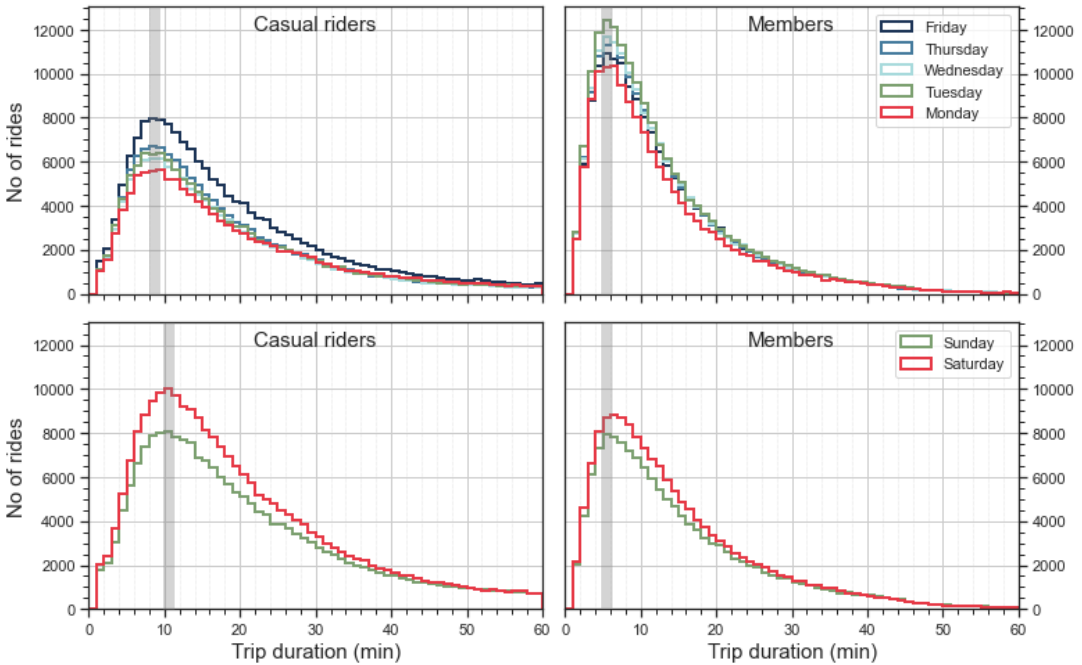


Casual riders use cyclistic bikes more than **member rides** during:

- **daytime** (**10:00-20:00**), and
- **night hours** (**21:00-04:00**)

Summer analysis: Trip duration

Trip duration – day analysis



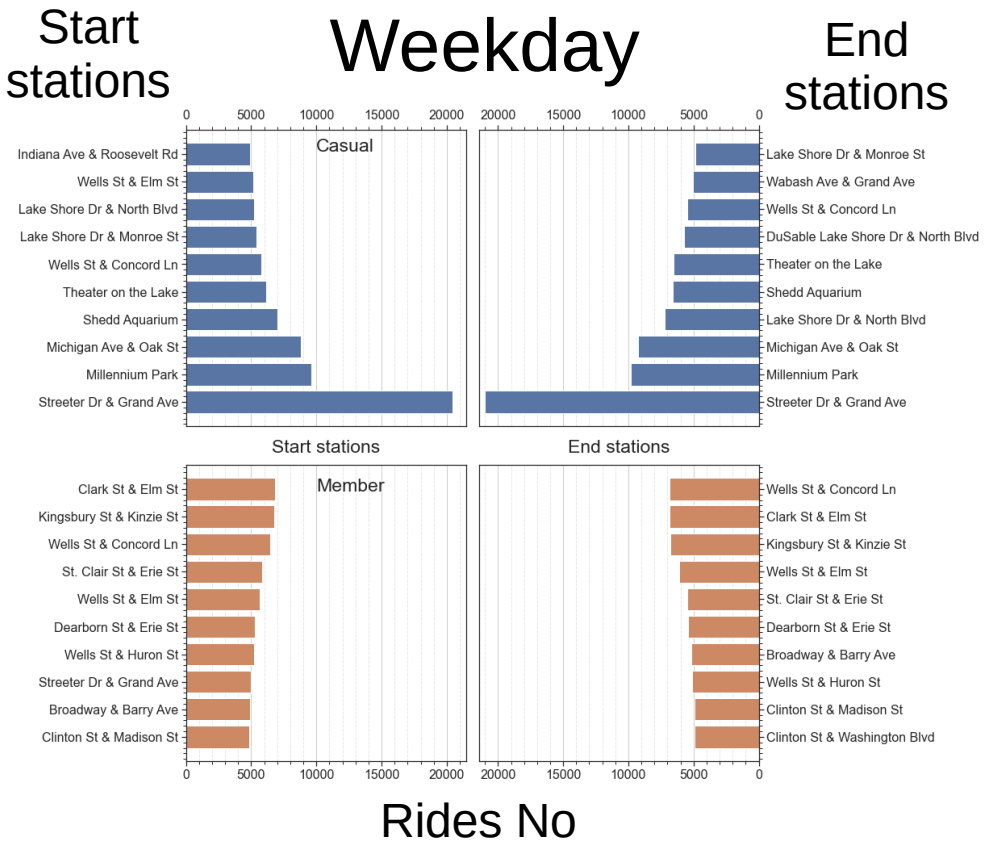
	Casual rides	Member rides
Peak duration (min)	**~9**	**~5**

Key take aways:

Casual rides are **longer** (almost x2) than **member rides.**

*More details in appendix D

Summer analysis: Top 10 bike stations



- **Top 3** stations for **casual riders**, compared to **members**:
  - ➔ **More rides**, resulting in a **larger decline**
- During the **weekend*** **casual riders** and **members** have **more stations in common** compared to weekdays.

*Detailed analysis in appendix E

Common patterns between casual and member rides

- Similar **season preferences** for riders. **Summer** is the prefered season. During the summer:
  - ➔ Most rides during the **weekday period.**
  - ➔ **Weekday peak** hours beatween **17:00-19:00.**
  - ➔ **Weekend**: broader peak between **10:00-20:00**.
  - ➔ **Friday and Saturday** nights have more rides compared to other days
  - ➔ Between top 10 bike stations casual and member riders use more **common bike stations** during the **weekend**

Differences between casual and member riders

- **Days of weekend** have much more rides for casual riders compared to weekdays. Members prefer **weekdays**.
- Casual rides have a **longer duration** than members
- Casual riders make **more round trips** than members.
- During summer (52% of all casual rides):
  - **Friday**, casual rides are more than **other weekdays**.
  - **Friday and Saturday nights** are noticably more for casual riders than members.
  - During **weekdays**, casual riders **do not** prefer to cycle for the **morning commute** (as members do).
  - No of **rides** in the **top 3 bike** stations is much larger for casual riders than members.

Suggestions

1) **Target specific groups** that will gain when becoming annual members: groups that use cyclistic often throughout the week.

i) Put more focus on weekday group (80%):

- Peak hour (**17:00-19:00**) includes **12% of all casual rides**

- Icreased hour zone (**12:00 – 21:00**) include **40% of all casual rides**.

Why? Probably use of cyclistic throughout the week (to commute), thus have more to gain with annual membership, thus, **higher conversion probability.**

ii) Put less effort/budget on other groups (20%):

- Friday-Saturday night group / riders that make long trips / riders that make round trips / weekend group.

Suggestions (cont'd)

2) Be **time specific** when advertising:

- Start advertising more aggressively on **March**.

  Why?

  Rides start increasing and keep increasing for the following months. Riders that will use cyclistic for the following months will have **more to gain** with annual membership early through the year. Thus **higher conversion probability** for riders that start during march.

- Advertise more at the e**nd of peak hour in the afternoon** during peak days.

  Why?

  - Riders will not have the focus of work and will nor skip the ad that easily.

Suggestions (cont’d)

- 3) **Define metrics** to help in constant evaluation and adjustment of the ad campaign:

  - Percent of weekday change of casual and member rides compared to previous week.

  Aim: reduce casual rides and increase member rides during peak hours.

  - Keep monitoring how ride peaks in hourly graphs change for weekdays, to redefine time of ads and or target group on a weekly basis.

  - **Verify that company gains when casual riders are converted**, early in the process. Cancel campaign if original hypothesis is not true.

Appendix

- A: Seasonal round trips
- B: Daily hourly analysis for each season
- C: Summer hourly analysis
- D: Summer duration analysis
- E: Top 10 Summer bike stations (Weekend)

Appendix A: Seasonal round trips

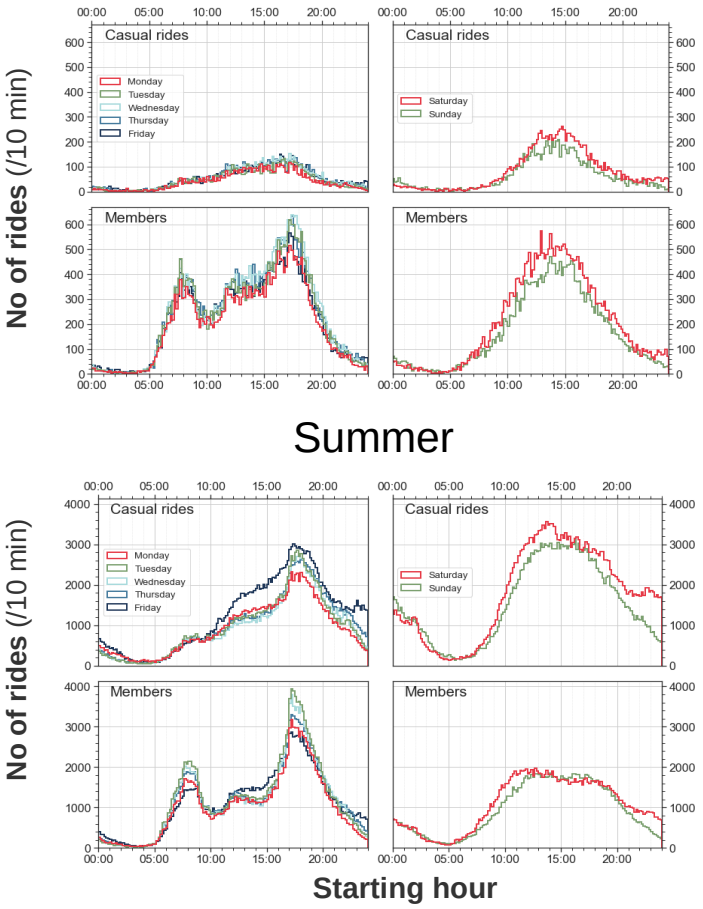
We calculated the percent of casual and member riders for

- Trips during:
  - Weekday
  - Weekend
  - Week
- **Per day of:**
  - Weekday (sum / 5)
  - Weekend (sum / 2)
  - Week (sum / 7)

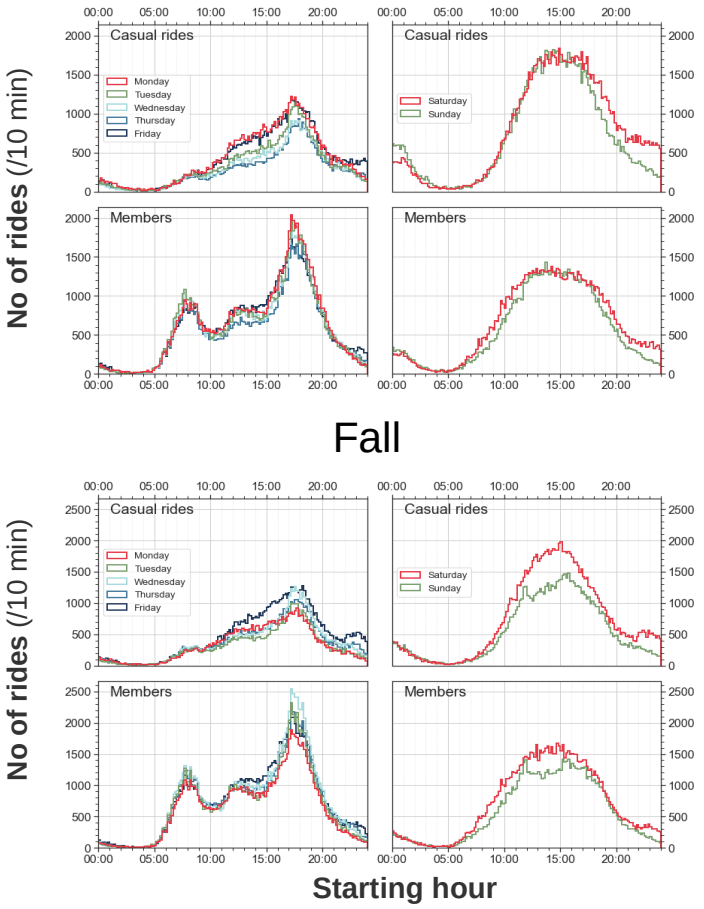
Season	Period	Casuals (%)		Members (%)	
		Sum	Per day	Sum	Per day
Winter	Weekdays	6	1.1	2	0.4
	Weekend	4	2.1	1	0.5
	Total	10	1.4	3	0.4
Spring	Weekdays	6	1.3	2	0.4
	Weekend	6	3.0	1	0.5
	Total	12	1.8	3	0.4
Summer	Weekdays	5	1.0	2	0.3
	Weekend	3	1.7	1	0.4
	Total	8	1.2	2	0.4
Autumn	Weekdays	7	1.3	2	0.5
	Weekend	5	2.7	1	0.5
	Total	12	1.7	3	0.5

Appendix A: Daily hourly analysis for each season

Winter



Spring

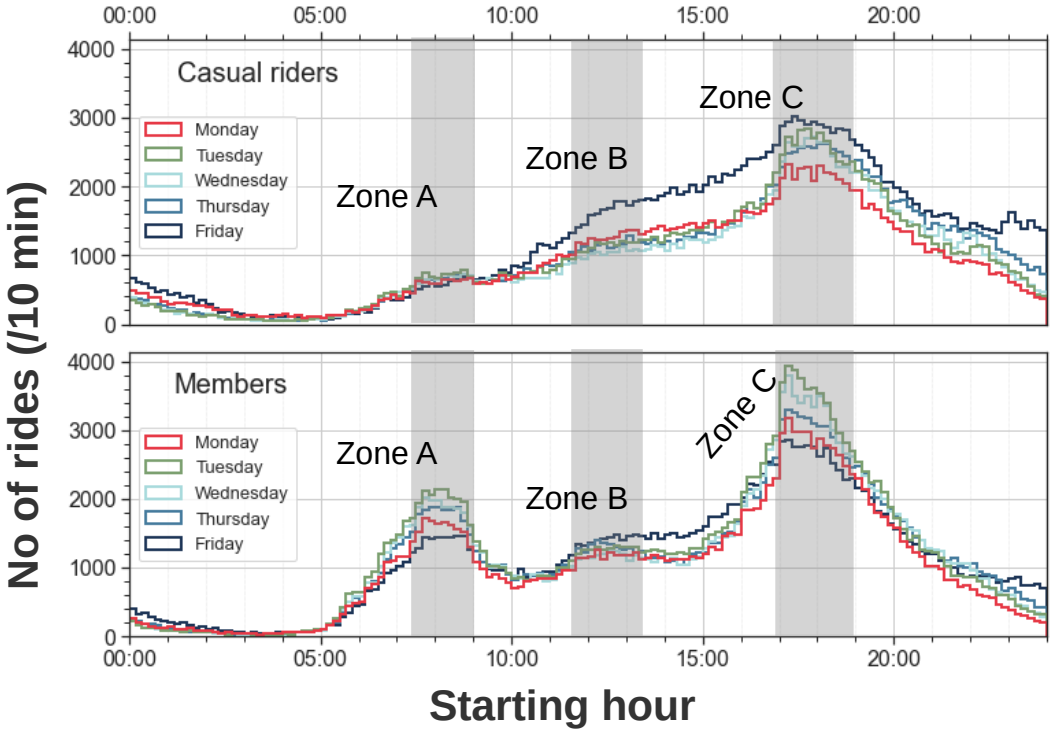


Summer

Fall

Appendix C: Summer hourly analysis

Weekdays

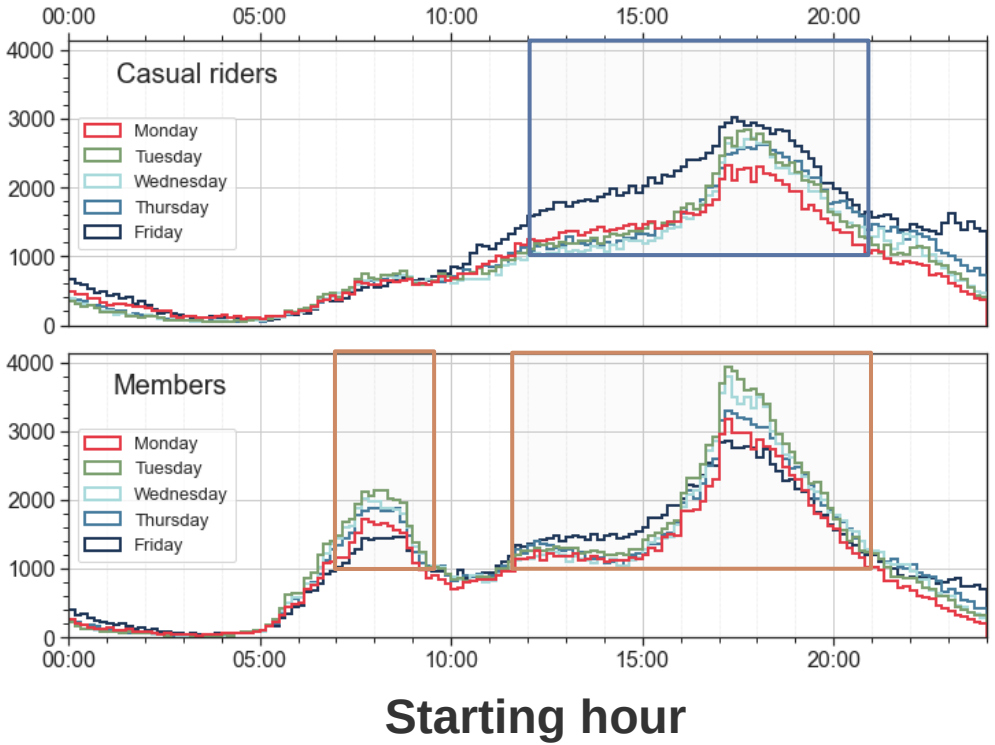


Time period		Casual rides	Member rides
Zone A 07:30–09:00	Peak	**~600**	~1700
	Yearly percent	2%	7%
Zone B 11:30–13:30	**Peak**	~1200	~1300
	Yearly percent	6%	7%
Zone C 17:00–19:00	**Peak**	~2600	~3500
	Yearly percent	12%	16%

Peak: the no of rides per 10 min in the time period specified.
Yearly percent: the percent of the rides done in this period (from casuals or members) for all the yearly rides.

Appendix C: Summer hourly analysis

Weekdays (cont'd)

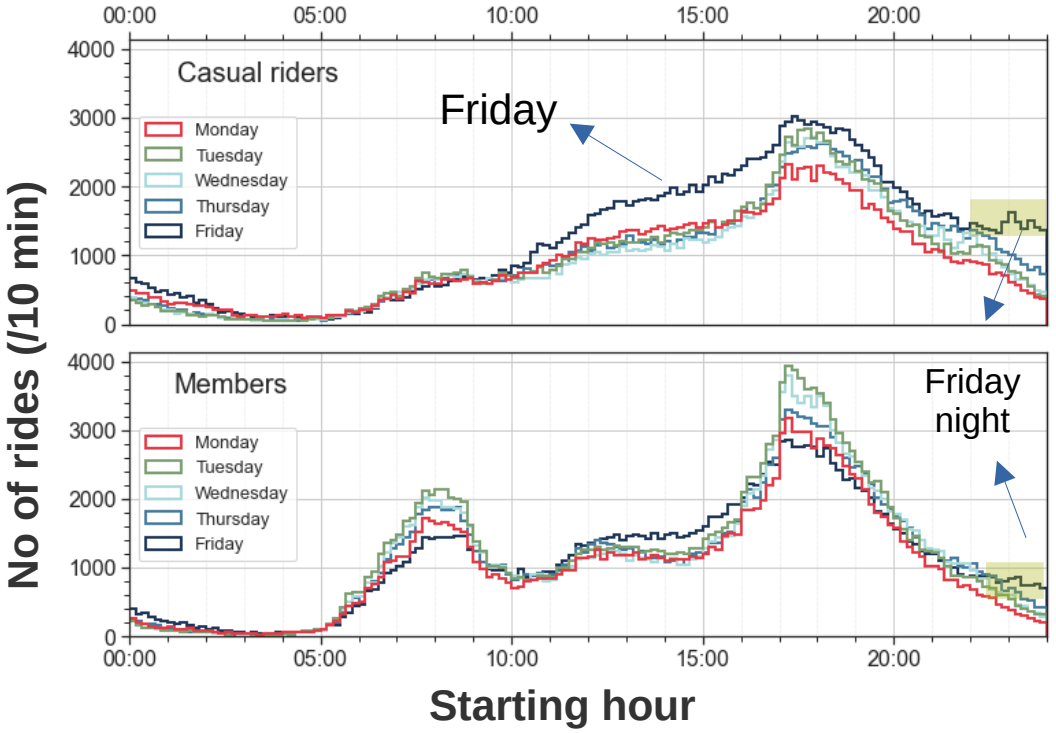


- **Increased rides zone** (> 1000)
  - **12:00 – 21:00 for casuals.**
    Casual rides during this time throughout the year are **40% of all the casual rides**.
  - **07:00-09:30 & 11:30 – 21:00 for members.**

*More details in appendix B

Appendix C: Summer hourly analysis

Weekdays (cont'd)

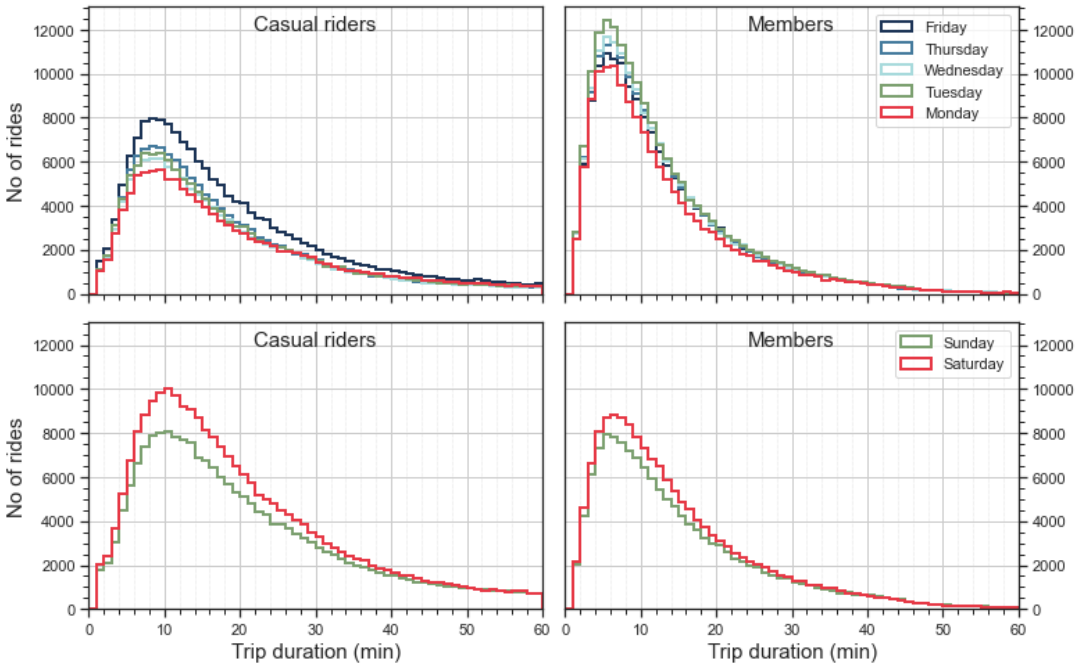


Friday:

- Increased **casual rides** (after 10:00).
- **Casual riders** use cyclistic more during **friday night** compared to **members**.

Appendix D: Summer trips duration analysis

Trip duration – day analysis



		Casual (min)	Members (min)
Weekday	Mean duration	28	14
	Peak duration	8-9	5-6
Weekend	Mean duration	32	16
	Peak duration	10	5-6

Further analysis showed that **9% of casual rides** is for more than **60min**, compared to less than **1% for members.** Our analysis suggests that these rides are recreational.

Key take away:

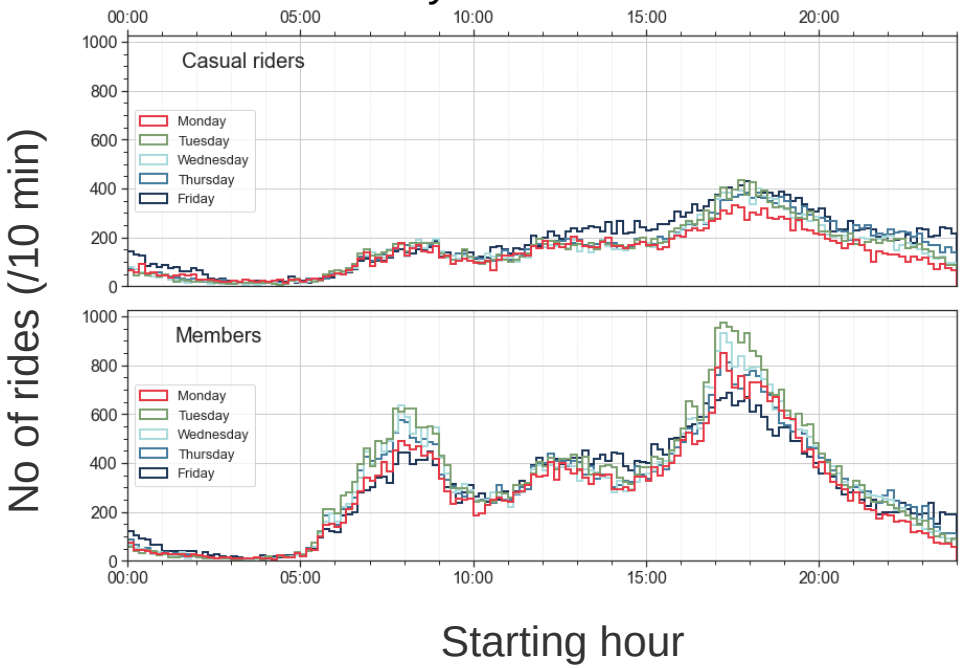
Casual rides are **longer** than **member rides.**

Appendix D: Summer trips duration analysis (cont'd)

Focusing on trips with peak duration:

- **When** do they happen?
  - ➔ Throughout the day**,** **same trip distribution** as all the rides.

Trips with peak duration hourly distributions



Analysis included **only** trips with durations 4-8 min for members and 8-12min for casuals (4 min intervals).

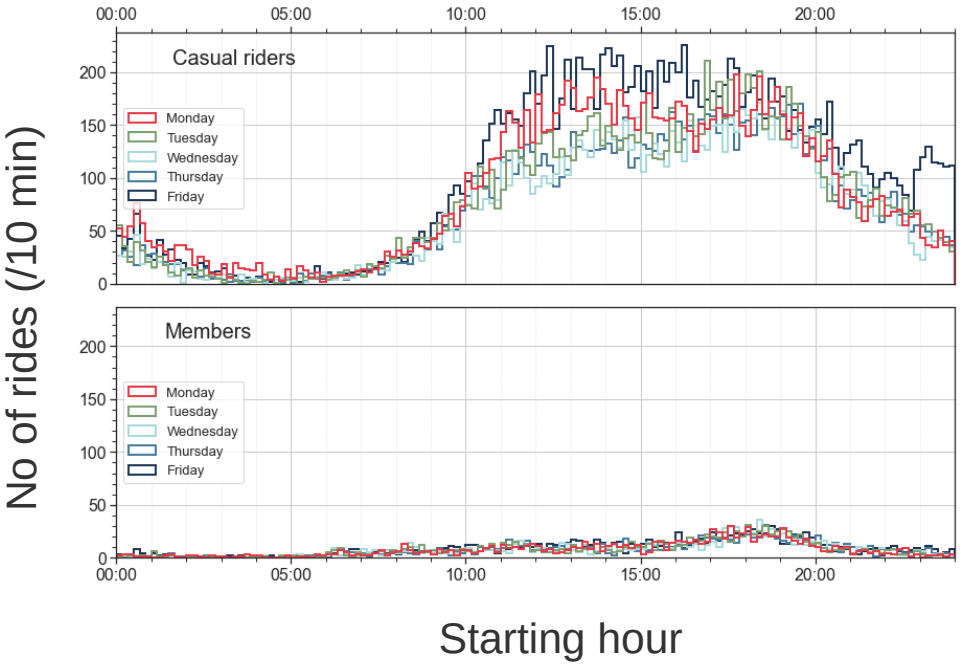
Appendix D: Summer trips duration analysis (cont'd)

Focusing on trips with duration >1h:

- Hourly profile for casuals is **similar with** the **weekend profile** for all casual riders.
  - ➔ This suggests that these rides are **recreational.**

Analysis included **only** trips with durations between 1h - 24h.

Trips lasting more than 1h



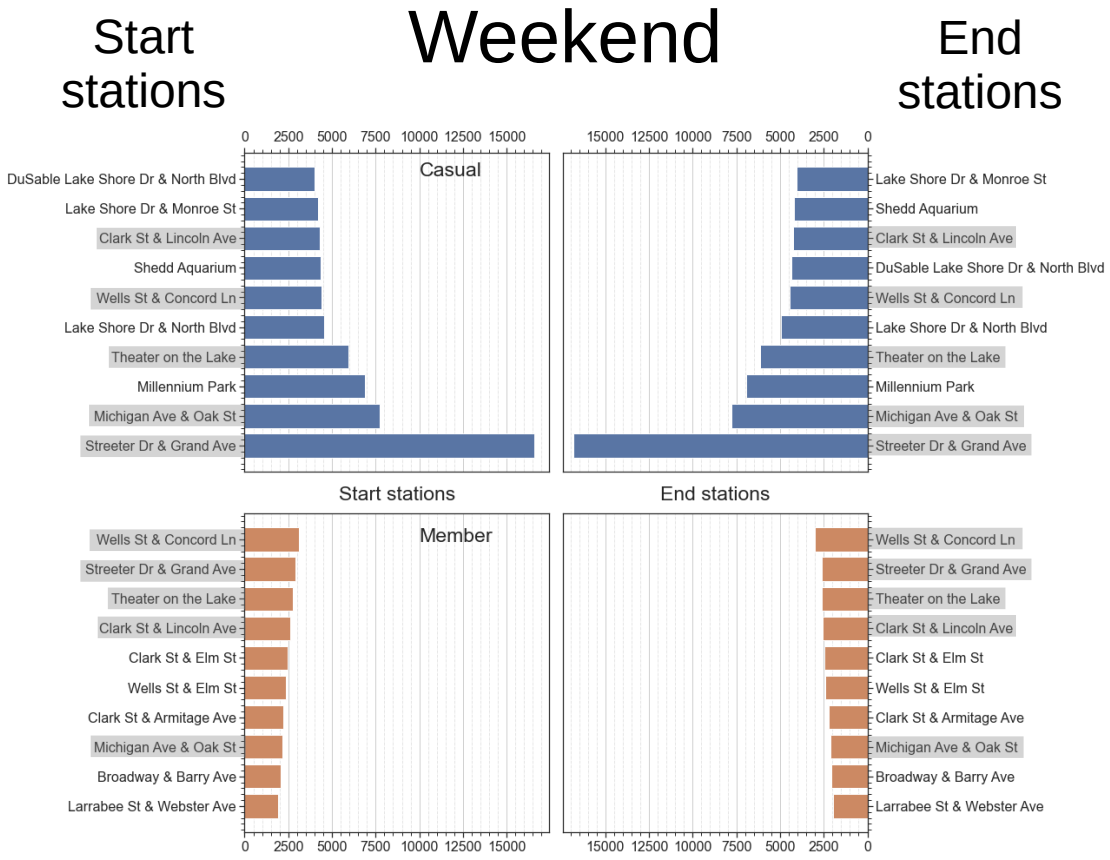
Appendix E: Top 10 Summer bike stations

- **Top 3** stations for **casual riders**, compared to **members** have**:**
  - → **More rides**.
  - → **Larger decline**

- Casual riders and members have more **start stations in common** (higlighted) **than end stations**.

- Top 10 **starting and ending** stations are almost the **same** (except squared) and with **similar order of preference** for casual riders, as well as for **members**.

Appendix E: Top 10 Summer bike stations (cont'd)



- **Casual** and **member** rides have **5 stations in common,** for starting and ending (more than during weekdays).
- Top 10 **starting and ending** stations are the **same and** with **similar order of preference** for **casual** riders, as well as for **members**.
- Casual riders prefer the "***Streeter Dr & Grand Ave***" bike station. It has the highest number of total rides during the summer.