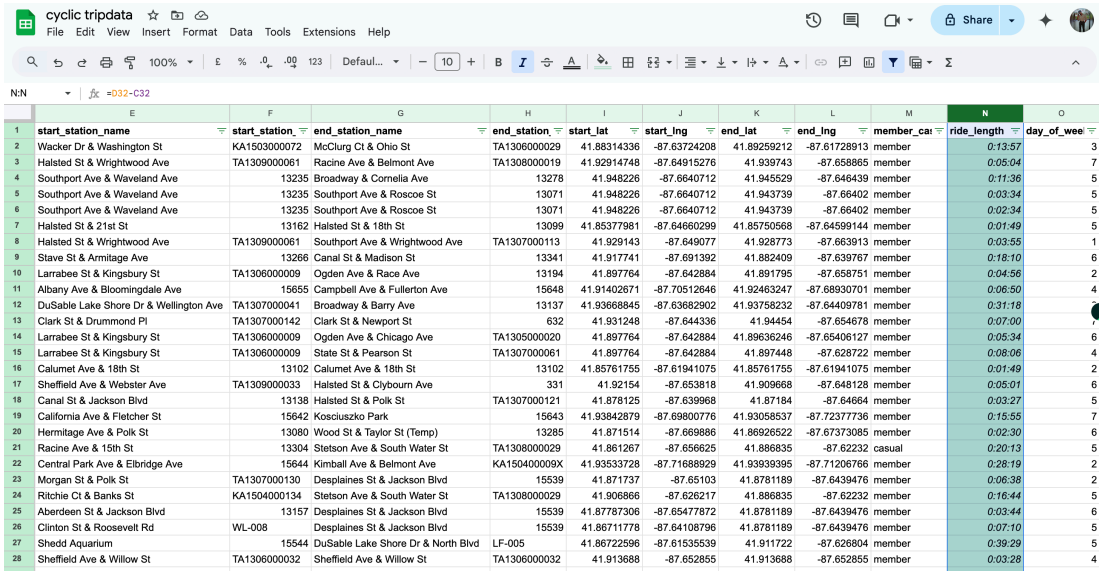
📄 Cyclistic Case Study: How Does a Bike-Share Navigate Speedy Success?

🔷 1. Business Task

The objective of this case study is to analyze how **casual riders** and **annual members** use Cyclistic bikes differently. Based on insights from user behavior, the marketing team aims to design effective strategies to **convert casual riders into annual members**, there by increasing customer lifetime value.



	E	F	G	H	I	J	K	L	M	N	O
1	start_station_name	start_station_	end_station_name	end_station_	start_lat	start_lng	end_lat	end_lng	member_cas	ride_length	day_of_wee
2	Wacker Dr & Washington St	KA1503000072	McClurg Ct & Ohio St	TA1306000029	41.88314336	-87.63724208	41.89259212	-87.61728913	member	0:13:57	3
3	Halsted St & Wrightwood Ave	TA1309000061	Racine Ave & Belmont Ave	TA1308000019	41.92914748	-87.64915276	41.939743	-87.658865	member	0:05:04	7
4	Southport Ave & Waveland Ave	13235	Broadway & Cornelia Ave	13278	41.948226	-87.6640712	41.945529	-87.646439	member	0:11:36	5
5	Southport Ave & Waveland Ave	13235	Southport Ave & Roscoe St	13071	41.948226	-87.6640712	41.943739	-87.66402	member	0:03:34	5
6	Southport Ave & Waveland Ave	13235	Southport Ave & Roscoe St	13071	41.948226	-87.6640712	41.943739	-87.66402	member	0:02:34	5
7	Halsted St & 21st St	13162	Halsted St & 18th St	13099	41.85377981	-87.64660299	41.85750568	-87.64599144	member	0:01:49	5
8	Halsted St & Wrightwood Ave	TA1309000061	Southport Ave & Wrightwood Ave	TA1307000113	41.929143	-87.649077	41.928773	-87.663913	member	0:03:55	1
9	Stave St & Armitage Ave	13266	Canal St & Madison St	13341	41.917741	-87.691392	41.882409	-87.639767	member	0:18:10	6
10	Larrabee St & Kingsbury St	TA1306000009	Ogden Ave & Race Ave	13194	41.897764	-87.642884	41.891795	-87.658751	member	0:04:56	2
11	Albany Ave & Bloomingdale Ave	15655	Campbell Ave & Fullerton Ave	15648	41.91402671	-87.70512646	41.92463247	-87.68930701	member	0:06:50	4
12	DuSable Lake Shore Dr & Wellington Ave	TA1307000041	Broadway & Barry Ave	13137	41.93668845	-87.63682902	41.93758232	-87.64409781	member	0:31:18	
13	Clark St & Drummond Pl	TA1307000142	Clark St & Newport St	632	41.931248	-87.644336	41.94454	-87.654678	member	0:07:00	
14	Larrabee St & Kingsbury St	TA1306000009	Ogden Ave & Chicago Ave	TA1305000020	41.897764	-87.642884	41.89636246	-87.65406127	member	0:05:34	6
15	Larrabee St & Kingsbury St	TA1306000009	State St & Pearson St	TA1307000061	41.897764	-87.642884	41.897448	-87.628722	member	0:08:06	4
16	Calumet Ave & 18th St	13102	Calumet Ave & 18th St	13102	41.85761755	-87.61941075	41.85761755	-87.61941075	member	0:01:49	2
17	Sheffield Ave & Webster Ave	TA1309000033	Halsted St & Clybourn Ave	331	41.92154	-87.653818	41.909668	-87.648128	member	0:05:01	6
18	Canal St & Jackson Blvd	13138	Halsted St & Polk St	TA1307000121	41.878125	-87.639968	41.87184	-87.64664	member	0:03:27	5
19	California Ave & Fletcher St	15642	Kosciuszko Park	15643	41.93842879	-87.69800776	41.93058537	-87.72377736	member	0:15:55	7
20	Hermitage Ave & Polk St	13080	Wood St & Taylor St (Temp)	13285	41.871514	-87.669886	41.86926522	-87.67373085	member	0:02:30	6
21	Racine Ave & 15th St	13304	Stetson Ave & South Water St	TA1308000029	41.861267	-87.656625	41.886835	-87.62232	casual	0:20:13	5
22	Central Park Ave & Elbridge Ave	15644	Kimball Ave & Belmont Ave	KA150400009X	41.93533728	-87.71688929	41.93939395	-87.71206766	member	0:28:19	2
23	Morgan St & Polk St	TA1307000130	Desplaines St & Jackson Blvd	15539	41.871737	-87.65103	41.8781189	-87.6439476	member	0:06:38	2
24	Ritchie Ct & Banks St	KA1504000134	Stetson Ave & South Water St	TA1308000029	41.906866	-87.626217	41.886835	-87.62232	member	0:16:44	5
25	Aberdeen St & Jackson Blvd	13157	Desplaines St & Jackson Blvd	15539	41.87787306	-87.65477872	41.8781189	-87.6439476	member	0:03:44	6
26	Clinton St & Roosevelt Rd	WL-008	Desplaines St & Jackson Blvd	15539	41.86711778	-87.64108796	41.8781189	-87.6439476	member	0:07:10	5
27	Shedd Aquarium	15544	DuSable Lake Shore Dr & North Blvd	LF-005	41.86722596	-87.61535539	41.911722	-87.626804	member	0:39:29	5
28	Sheffield Ave & Willow St	TA1306000032	Sheffield Ave & Willow St	TA1306000032	41.913688	-87.652855	41.913688	-87.652855	member	0:03:28	4

Fig 1 - Cyclistic Trip Dataset with Created Columns
This is the cleaned Cyclistic bike-share dataset. Two new columns — ride_length and day_of_week — were created to calculate ride duration (in hh:mm: `ss`) and identify the day each ride started (1 = Sunday, 7 = Saturday).

🔷 2. Data Source

The dataset `cyclic tripdata.csv` contains 12 months of bike trip data, including:

- Ride timestamps
- Station information
- Ride types
- User types (casual or member)

To protect user privacy, no personally identifiable information is included.

🔷 3. Data Cleaning & Preparation

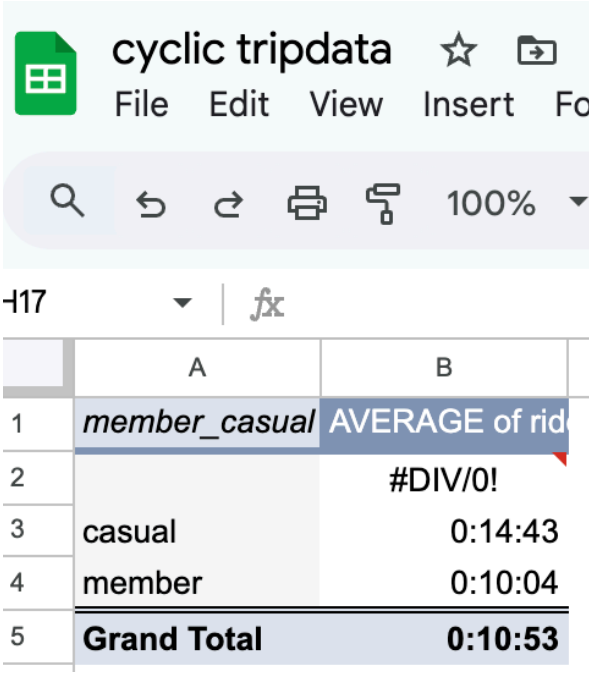
Using Google Sheets:

- Created a `ride_length` column to calculate ride duration in minutes `(ended_at - started_at) * 24 * 60`
- Added `day_of_week` using the `WEEKDAY()` function
- Removed trips with missing data or non-positive durations
- Used Pivot Tables to aggregate metrics for deeper analysis

🔷 4. Data Analysis & Visualizations

✅ **Key Metrics:**

- **Average ride length:**
  - Casual: ~14.7 minutes
  - Member: ~10.0 minutes
- **Total Rides by Day of Week:**
  - Casual riders are more active on **weekends**
  - Members ride more on **weekdays** — likely commuting
- **Average Ride Duration by Day:**
  - Casuals ride longest on **Saturday (~17.7 mins)**
  - Members' ride time is consistent across all days



	A	B
1	member_casual	AVERAGE of rid
2		#DIV/0!
3	casual	0:14:43
4	member	0:10:04
5	**Grand Total**	**0:10:53**

Figure 5: Pivot Table Showing Average Ride Length for Casual and Member Riders
This pivot table displays the **overall average ride time** for both rider categories.

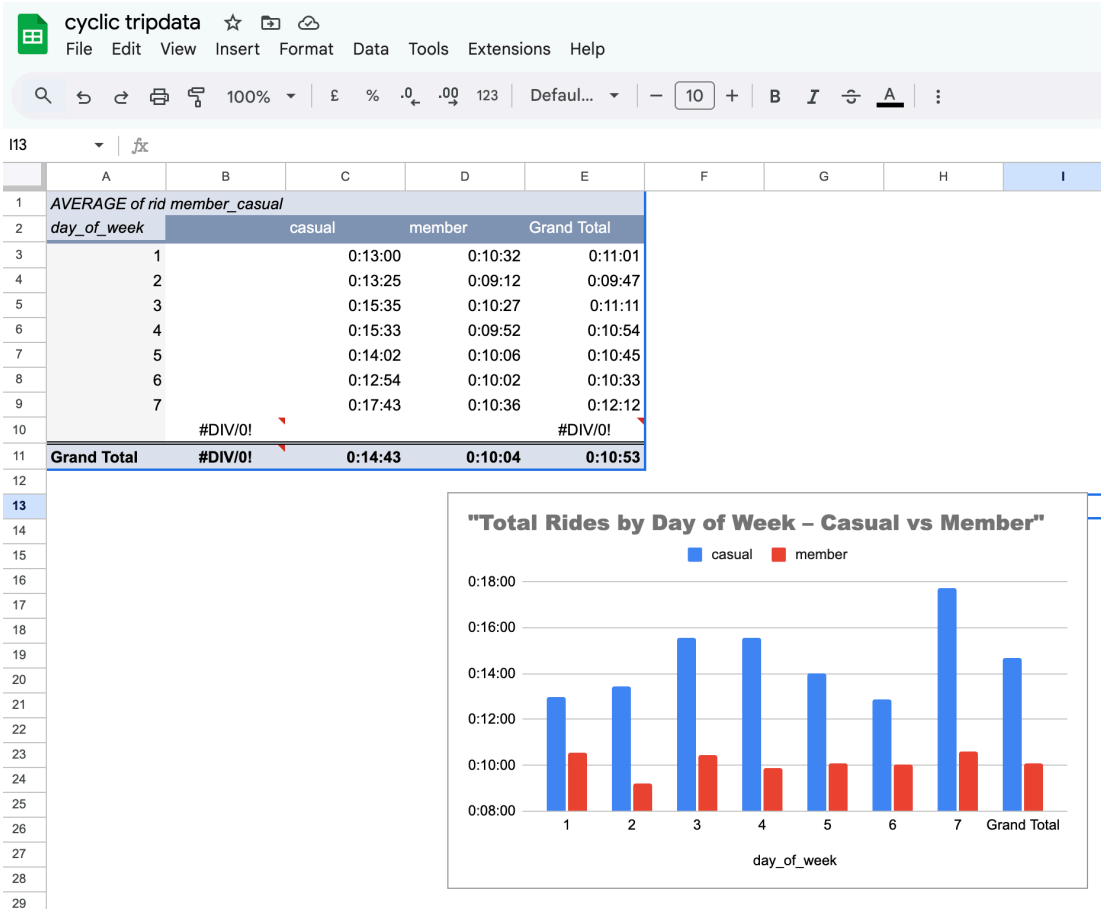


Fig 2 – Pivot table showing the average ride duration for casual and member riders across all days of the week.

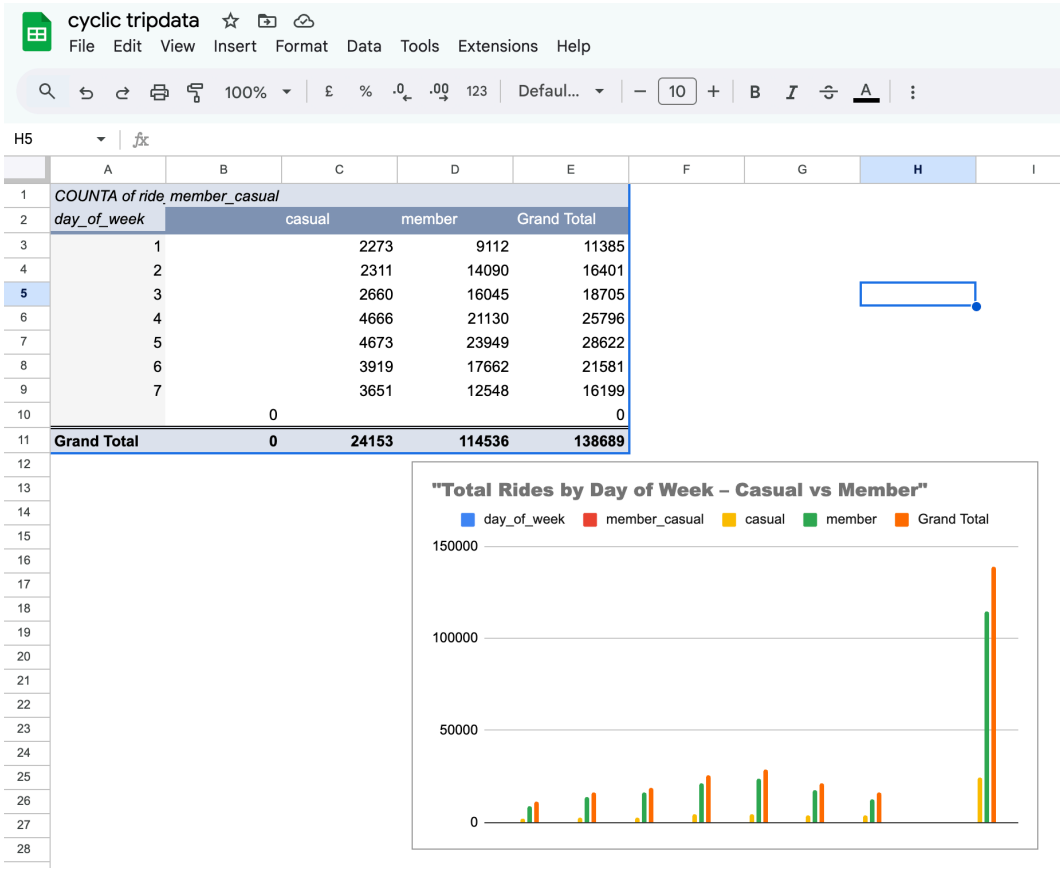


Fig 3 -Total Number of Rides Taken per Day by Casual and Member Riders This pivot table and bar chart show the **ride count distribution across the week**.

📊 **Visuals Included:**

- Bar chart: Total rides by day of week (casual vs member)
- Bar chart: Average ride length by rider type
- Line chart: Avg ride length by day (casual vs member)

🔷 5. Key Insights

1. Casual riders ride **longer** and mostly on **weekends.**
2. Members ride **shorter distances**, mostly on **weekdays.**
3. Casual usage shows a **leisure pattern**(Free time, enjoyment), while members ride for **commute**(Daily travel to work/school)**.**
4. This pivot table displays the **overall average ride time** for both rider categories.

🔷 6. Recommendations(important)

1. **Offer weekend discounts to casual riders to promote membership during peak usage times.**
2. **Promote membership plans, highlighting commute benefits like cost savings and faster access.**
3. **Run targeted digital ad campaigns on social media or navigation apps promoting member-only perks.**

🔷 7. Tools Used

- Google Sheets
- Pivot Tables
- Charts (Bar, Line)
- Basic Excel functions (`WEEKDAY( )` , math, filter)

✅ *This case study demonstrates the power of data to drive strategic marketing decisions.*