Analysis of the DIVVY® Dataset

**Data, Excel sheets, research, tableau visualization links, and a step-by-step walkthrough of Excel processes and functions are provided following the analysis.*

Project:

This project is based on a Capstone project for Google's Data Analytics Professional Certificate. The data will be cleaned, prepped, explored, and analyzed with a comprehensive dashboard in Excel. Further analysis and visualization will be completed in Tableau. I will be analyzing the March 2022 data. The business task below is from the Capstone PDF.

> *"Finance analysts have concluded that annual members are much more profitable than casual riders. Although the pricing flexibility helps Cyclistic attract more customers, Moreno believes that maximizing the number of annual members will be key to future growth. Rather than creating a marketing campaign that targets all-new customers, Moreno believes there is a very good chance to convert casual riders into members. She notes that casual riders are already aware of the Cyclistic program and have chosen Cyclistic for their mobility needs. Moreno has set a clear goal: Design marketing strategies aimed at converting casual riders into annual members. In order to do that, however, the marketing analyst team needs to better understand how annual members and casual riders differ, why casual riders would buy a membership, and how digital media could affect their marketing tactics. Moreno and her team are interested in analyzing the Cyclistic historical bike trip data to identify trends."*

The following data analysis process will guide the project:

Ask – Understand the problem and when needed ask for clarification from stakeholders so you can focus solely on the business task.

Prepare – Having understood the problem and business task ask what metrics can be created that may be helpful in resolving the problem.

Process – Make the data useful. Clean the data, garbage in garbage out. Is the data biased?

Analyze – Find the mysteries in the data and tell the story. This is the detective stage.

Share – In this step ask for feedback. A biased view is more easily identified through the eyes of someone else. If needed go back to the analyzing step. Once bias is not a concern, create visualizations that assist in a clear and concise delivery of the analysis that anyone can easily understand.

Act – Provide actionable insights as to how solve the problem, that is if the problem is worth solving. Yes, it is possible the analysis suggests that moving forward will be net present value negative.

Ask:

Need a better understanding of the business model, researched DIVVY's website.

Rides under 60 seconds are considered false starts or users trying to redock a bike. The rental time window is 24 hours, any rental exceeding 24 hours may be considered lost or stolen and the renter may incur additional fees of $250 plus tax for a classic bike, $1200 plus tax for electric bikes.

Pricing:

- Day Pass: For $15 riders receive an unlimited number of rides over a 24-hour period. A single ride that exceeds 3 hours will incur an additional charge of $0.16 per minute.
- Single use: $1 to unlock plus $0.16 per minute for classic bikes. $1 to unlock and $0.39 per minute for electric.
- Members pay an annual fee of $119. Members may unlock any bike type for free. For classic bikes the first 45 minutes of each ride is included in the membership price. If a single rental exceeds 45 minutes a charge

of $0.16 per minute is applied. For electric a charge of $0.16 per minute is applied for the duration of the ride.

Dataset:

There are 13 columns consisting of ride id, rideable type, started at (date and time), ended at (date and time), start station name, start station id, end station name, end station id, start station latitude, start station longitude, end station latitude, end station longitude, and member/casual. There are 284,043 rows.

Questions:

There are three “rideables” in the dataset; electric, classic, and docked. There are several blanks in station names which correlate directly with station id blanks and the corresponding latitude and longitude have 2 decimals or are blank. There is no distinction between single use and day pass rentals. I reached out to Divvy via email at bike-data@lyft.com for clarification.

- Docked bikes are the same as classic bikes. There was a change to the platform in April 2020 when docked bikes were assigned as classic bikes; both are still in circulation.
- Blank station names and ids are because electric bikes do not have to be docked. Current queries round to the nearest second decimal place to anonymize the data and reduce location specificity (data privacy). When validating I discovered this is true for electric bikes, however, there are still blanks in latitude and longitude for classic/docked bikes. However, for all rentals this occurred in only 0.0009% of rentals.
- With the current public datasets there is no way to distinguish between single use and day pass rentals.

Prepare:

Is the data reliable, original, comprehensive, current, and cited? The data is collected by DIVVY. It is reliable, original, as comprehensive as its public availability permits, the data is available for the most current month, the data is original so researching citing is unnecessary.

I asked myself questions to help identify metrics that would provide clear differences between members and casual riders. Is there a difference in high volume days of the week and/or hours of casual vs member riders? Is there a preference for “rideable” type between groups? Is there a difference in the length of rental time between groups? Is there a geographical difference in use between groups? If so, does the geographical difference provide further insight? What additional research will be needed based on docking station locations? What is the revenue that casual riders create from rentals? How much money do members save by having a membership? What is the ratio of members vs casual rider rentals and what are the revenue contributions between groups (is it more profitable to convert casual riders)?

Process:

I removed unnecessary data, added proper formatting, and cleaned the data. Added several columns to prepare for analysis including ride time, ride minutes, a count for casual occurrences, a count for member occurrences, day of the week, price per minute, casual revenue, member revenue, member savings, and the hour that the rental started.

Analyze/Share:

In this step I created 12 pivot tables, 2 pivot charts, and additional tables for further analysis based on results.

Pivot Tables:

- Ratio of rental volume by group.
- Average time length of a rental by group.
- Percentage of weekday rental volume by group.
- Hourly breakdown of rentals by day of the week between groups as a percentage of weekday totals and as total rentals with sparklines.
- Summary of revenue and savings.

- Revenue and savings by day of the week.
- Four pivot tables for the top 20% of start/end stations between groups and conditional formatting to identify overlap between groups.

Tables:

- Table for the top 20% of start stations between both groups.
- Table for casual vs member rental ratio by hour blocks and days of the week.
- Projected revenue at 5% conversion to determine if the marketing campaign should be pursued.

Tableau:

- Plotted the top 20% of stations on a map and researched the areas for further insight.
- Plotted the electric rentals on a map.
- Chart breaking down projected revenue.
- Chart for rental volume by group.
- Chart for differences in rental time between groups.
- Chart for monthly rental volume and weekday rental volume by group.
- Charted casual vs member and member vs casual rental by weekday and hour.
- Created dashboards and put them into a storyboard based upon results.

Results:

Is the campaign worth pursuing?

Yes, a 5% conversion rate MoM quarterly projects over $1.5MM revenue increase with a $92,365 decrease in casual rider revenue excluding marketing costs. The projected net sum is more than $1.4MM. Annualized over a year the projected net is more than a $3MM revenue increase.

Note: Available data does not allow filtering for tourists or multi-use casual riders.

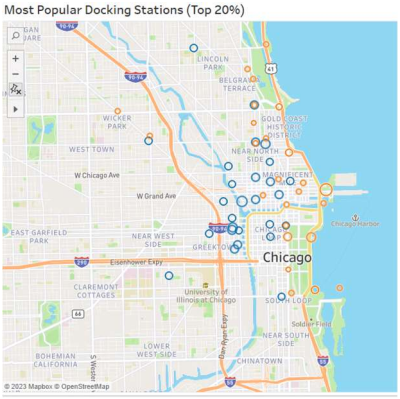
A casual user's average rental time is more than double that of members (24 vs 11 minutes). Casual users account for 32% of all rentals and contribute 70% to revenue, excluding revenue from membership fees.

Member's highest rental volumes are normal AM/PM commuting hours Mon-Thu. The casual user's highest volume is Saturday and Sunday afternoon to late afternoon.

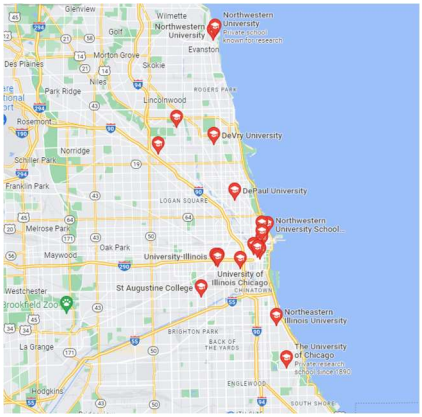
The casual to member rental ratio is greatest from 11PM-3AM throughout the week, weekends from 12PM-4PM, and the 2-3PM hour-block displays a high ratio all week. There are 11 occurrences when the ratio is above 100% and 9 of those occurrences take place between 1-3AM, 6 of the occurrences were on weekdays. The other two are Saturday 2-4PM.

The highest concentration of non-docked electric rentals overlaps the top 20% of docking stations. The top 20% of casual rental docking stations are in Magnificent Mile, Gold Cost Historic District, Near North Side, Chicago Loop, and the east side of Greektown. These areas are well known for bars, restaurants, entertainment, arts, various tourist attractions, and contain the highest concentration of universities with 18 of the 29 universities in the city. Member usage has a small concentration outside of this area and it is at the University of Chicago to the south. Another trend is the abundance of L-Train stations near the top 20% of docking stations. There is less rental volume variance between docking stations for members than that of casual users. Streeter Dr & Grand Ave is the most popular docking station for casual users, it has 167% more rentals than the next highest volume station, DuSable Lake Shore Dr & Monroe St. Streeter Dr & Grand Ave is adjacent to Navy Pier, a very popular destination for tourists and locals.

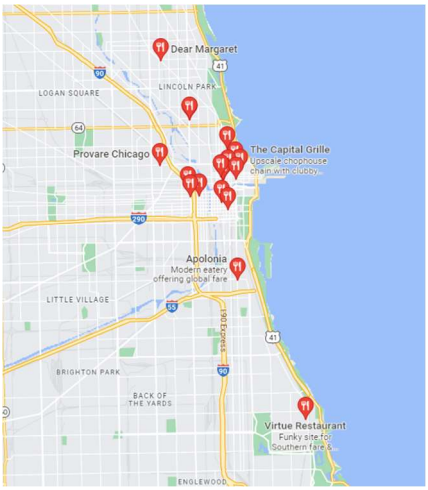
Top 20% of Stations



University Locations (Google Maps)



Restaurants (Google Maps):



Act:

Tourists:

According to the Chicago government, in 2021 Chicago received 30.7MM tourists. The population of Chicago is 2.7MM. The geographic locations of the top 20% of docking stations overlay Chicago's top tourist destinations. Peak casual rental volume occurs on the weekends when people close to Chicago may take a weekend trip. Providing a 2-day or 7-day temporary membership pass for tourists that is less expensive than daily pass fees could encourage tourists to purchase a 2-day or 7-day "membership". Marketing this digitally through travel booking agencies would increase exposure. Much like adding a car rental or hotel on an airline ticket booking site. They can also partner with local hotels.

Shift Employees:

The 3PM and 11AM-3AM casual vs member rental ratio aligns with shift work commuting hours. Geographically the top station locations are in a part of town densely concentrated with establishments that operate in shifts. The L-train stations near high volume casual rental stations could indicate commuters from other parts of the city. I suggest a digital marketing campaign targeted at these employees citing how much money members save in fees, the 600+ stations throughout the city, and offer an employee discount and/or a free trial.

University Students:

There is a high concentration of universities and university students are less likely to own a car and have discretionary income, DIVVY could be the perfect fit. College students respond remarkably well to digital marketing campaigns. Historical success in marketing to this demographic includes free trials, authenticity, witty, and short impactful ads. Studies show that the current college generation has a strong sense of brand loyalty, and the best customer is a return customer. Market DIVVY as a less expensive option to rideshares and taxis, a quick and convenient way to get to class or around town, and a green alternative with a smaller footprint than gas vehicles. Partner with local colleges and universities, offer a free trial and/or a student discount, and advertise on campuses as well.

Diners:

There is a high concentration of restaurants overlaying the top 20% of stations. The 11AM-3AM casual vs member rental ratio is the highest and is not weekend dependent. These are common hours for evening socializing, going to restaurants, and bars. In Illinois restaurants that serve alcohol and bars close at 2 AM Monday-Thursday and 3AM Friday and Saturday, excluding the 123 locations that have late liquor licenses. A 1.2-mile Uber ride from Streeter Dr & Grand Ave to The Art Institute of Chicago is estimated to range from $8.41 to $10.30, basically the monthly cost of a membership. Partner with restaurants, advertise on QR codes and table tents. DIVVY could also offer a rental discount with proof of purchase at participating restaurants and the restaurants could as well. This would expose DIVVY to new casual riders that in turn may become members and funnel customers to participating restaurants.

Link to Tableau Storyboard:

https://public.tableau.com/views/DivvyMarch2022/DIVVY?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link

Excel Walkthrough:

- Created a new sheet to pull all the data in as a function (=A1) so I can clean efficiently. Pulled through all rows and columns.

- Delete ride_id, start station id and end station id.
- Verified there are no duplicates using ride id and remove duplicates in data validation.
- Inserted row above headers, used COUNTBLANK to count blanks
    - start_station_name= 16260
    - end_station_name= 17927
- Find and replace all occurrences of docked bike to classic bike.
- Use 'Find and Select Go To Special' and replace start station blanks with Electric Pickup, replace end station blanks with Electric Dropoff. Filter electric_pickup/dropoff for classic bikes and delete electric_pickup/dropoff to account for the .0009% of blanks.
- Converted text columns to text
    - Verified with ISTEXT function.
- Ran trim on all text strings. Added column and used functions CODE and RIGHT to verify that there are no trailing unprintable characters. Repeated with CODE and LEFT looking for spaces and other unprintable characters. Everything ended in correct ASCII code, there are no unprintable characters in text strings. Deleted columns.
    - =CODE(RIGHT(*CELL*, 1))
    - =CODE(LEFT(*CELL*, 1))
- Changed dates to date time and numbers to numbers
- Convert to table and add named ranges.
- Additional columns for analysis:
    - Add column ride_time (establishing time length of rental)
        - =[@[ended_at]]-[@[started_at]]
    - Add column ride_minutes (converting ride_time to minutes)
        - =[@[ride_time]]*1440
            - Used number filter on ride_minutes and deleted all rides violating DIVVY rental policy and potential false starts (over 24 hours and less than 60 seconds).
    - Add column casual_count (for use in pivot tables).
        - =IF([@[member_casual]]="casual",1,0)
    - Add column member_count (for use in pivot tables).
        - =IF([@[member_casual]]="member",1,0)
    - Add column weekday
        - =TEXT([@[started_at]],"ddd")
    - Add column price per minute.
        - =IFS(AND([@[member_casual]]="casual",[@[rideable_type]]="classic_bike"),0.16,AND([@[member_casual]]="casual",[@[rideable_type]]="electric_bike"),0.39,AND([@[member_casual]]="member"),0.16)
    - Add column casual_cost
        - =(IFS(AND([@[member_casual]]="casual",[@[rideable_type]]="classic_bike"),[@[price/minute]]*[@[ride_minutes]]+1,AND([@[member_casual]]="casual",[@[rideable_type]]="electric_bike"),[@[price/minute]]*[@[ride_minutes]]+1,AND([@[member_casual]]="member"),0))
    - Add column member_cost (single rides exceeding 45 minutes)
        - =IFNA(IFS(AND([@[member_casual]]="member",[@[ride_minutes]]>45,[@[rideable_type]]="classic_bike"),[@[ride_minutes]]*[@[price/minute]],AND([@[member_casual]]="member",[@[rideable_type]]="electric_bike"),[@[ride_minutes]]*[@[price/minute]]),0)
    - Add column member savings (single rides under 45 minutes).
        - =IFNA(IFS(AND([@[member_casual]]="member",[@[ride_minutes]]<45,[@[rideable_type]]="classic_bike"),[@[ride_minutes]]*[@[price/minute]],AND([@[member_casual]]="member",[@[rideable_type]]="electric_bike"),1),0)
    - Add column hour
        - =HOUR([@[started_at]])

Pivot Tables:

- Created four pivot tables identifying the top 20% start and end stations for each user group.
    - Applied nested IF and Match functions to identify station overlaps. Applied conditional formatting to highlight no overlap within groups and to highlight if there is an overlap between groups.
        - ie: =IFNA(IF(MATCH(A4,$D$4:$D$25,0),"Yes"),"No")
    - Created a new sheet to consolidate the top 20 percent of stations. Copied casual start and end stations into one column and removed duplicates. Repeated for members and merged into one table.

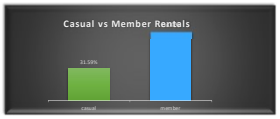
- Created Pivot Table to see difference in the volume of rentals between groups.
    - Inserted Pivot Chart.
- Created pivot table to see trends and differences between members vs casual over days of the week.
    - Inserted pivot line chart.
- Created pivot table to look at hourly use by day of the week. Added sparklines for visual of varying trends.
    - Copied and pasted into new sheet. Created a row for each hour block to calculate casual vs member rental ratio. Applied conditional formatting highlighting casual vs member ratio greater than 90% or less than 32%.
- Created pivot table looking at casual rental costs and members saving/costs for month. Repeated for days of the week.
- Created pivot for rideable popularity between groups.

Projected Revenue at 5% MoM Conversion								
Month	Projected Casual Revenue	Adjusted Casual Count	Converted to Member	Revenue from Fees	Increase in Mem Revenue	Adjusted Member Revenue	Adjusted Casual R	Casual Revenue Decrease
Jan	$ 620,605.00	88113	4406	$ 524,272	$ 4,362	$ 528,634	$ 620,315.52	$ (289.48)
Feb	$ 620,605.00	83707	4185	$ 498,059	$ 4,144	$ 502,202	$ 589,299.74	$ (31,305.26)
Mar	$ 620,605.00	79522	3976	$ 473,156	$ 3,936	$ 477,092	$ 559,834.76	$ (60,770.24)
Apr	$ 620,605.00	75546	3777	$ 449,498	$ 3,740	$ 453,238	$ 531,843.02	$ (88,761.98)
May	$ 620,605.00	71769	3588	$ 427,023	$ 3,553	$ 430,576	$ 505,250.87	$ (115,354.13)
Jun	$ 620,605.00	68180	3409	$ 405,672	$ 3,375	$ 409,047	$ 479,988.32	$ (140,616.68)
Jul	$ 620,605.00	64771	3239	$ 385,388	$ 3,206	$ 388,595	$ 455,988.91	$ (164,616.09)
Aug	$ 620,605.00	61533	3077	$ 366,119	$ 3,046	$ 369,165	$ 433,189.46	$ (187,415.54)
Sep	$ 620,605.00	58456	2923	$ 347,813	$ 2,894	$ 350,707	$ 411,529.99	$ (209,075.01)
Oct	$ 620,605.00	55533	2777	$ 330,422	$ 2,749	$ 333,171	$ 390,953.49	$ (229,651.51)
Nov	$ 620,605.00	52757	2638	$ 313,901	$ 2,611	$ 316,513	$ 371,405.82	$ (249,199.18)
Dec	$ 620,605.00	50119	2506	$ 298,206	$ 2,481	$ 300,687	$ 352,835.53	$ (267,769.47)

Annual Summary	
Fee Rev	$ 4,819,530
Increase in Mem Rev	$ 40,095
Total Conversion Rev	$ 4,859,625
Decrease in Casual Rev	$ (1,744,825)
Net Sum	$ 3,114,801

Percent of Total Rentals

Row Labels	Percent of Rentals
casual	31.59%
member	68.41%
Grand Total	**100.00%**

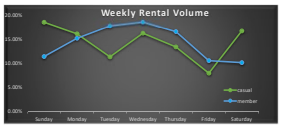


Average Ride Time

Row Labels	Average of ride_time
casual	24:13
member	11:41
Grand Total	**15:39**

Percent of Rentals by Weekday

Weekly Rental Volume	Column Labels		
Row Labels	casual	member	Grand Total
Sunday	18.44%	11.37%	13.60%
Monday	16.08%	15.17%	15.45%
Tuesday	11.30%	17.72%	15.69%
Wednesday	16.19%	18.52%	17.78%
Thursday	13.37%	16.55%	15.55%
Friday	7.96%	10.56%	9.74%
Saturday	16.68%	10.12%	12.19%
Grand Total	**100.00%**	**100.00%**	**100.00%**



Hourly Percent of Total Rides

	Column Labels							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total	Sparklines
12 AM								
Sum of casual_count	0.30%	0.09%	0.12%	0.11%	0.15%	0.20%	0.22%	1.19%	
Sum of member_coun	0.16%	0.06%	0.08%	0.08%	0.09%	0.10%	0.16%	0.73%	
1 AM								
Sum of casual_count	0.25%	0.06%	0.06%	0.05%	0.12%	0.10%	0.18%	0.83%	
Sum of member_coun	0.11%	0.03%	0.04%	0.03%	0.05%	0.05%	0.11%	0.43%	
2 AM								
Sum of casual_count	0.14%	0.05%	0.04%	0.04%	0.05%	0.07%	0.11%	0.50%	
Sum of member_coun	0.06%	0.02%	0.03%	0.02%	0.02%	0.03%	0.07%	0.23%	
3 AM								
Sum of casual_count	0.11%	0.03%	0.03%	0.03%	0.04%	0.04%	0.06%	0.33%	
Sum of member_coun	0.06%	0.02%	0.02%	0.02%	0.02%	0.02%	0.05%	0.21%	
4 AM								
Sum of casual_count	0.04%	0.04%	0.03%	0.03%	0.04%	0.04%	0.02%	0.25%	
Sum of member_coun	0.03%	0.03%	0.04%	0.04%	0.04%	0.03%	0.03%	0.24%	
5 AM								
Sum of casual_count	0.05%	0.06%	0.08%	0.09%	0.08%	0.06%	0.05%	0.47%	
Sum of member_coun	0.04%	0.18%	0.25%	0.25%	0.19%	0.13%	0.03%	1.07%	
6 AM								
Sum of casual_count	0.09%	0.15%	0.20%	0.21%	0.20%	0.12%	0.08%	1.05%	
Sum of member_coun	0.08%	0.40%	0.62%	0.67%	0.55%	0.36%	0.09%	2.76%	
7 AM								
Sum of casual_count	0.15%	0.33%	0.42%	0.54%	0.57%	0.25%	0.11%	2.38%	
Sum of member_coun	0.17%	0.85%	1.34%	1.45%	1.28%	0.73%	0.21%	6.04%	
8 AM								
Sum of casual_count	0.23%	0.41%	0.52%	0.69%	0.75%	0.33%	0.24%	3.17%	
Sum of member_coun	0.27%	1.00%	1.52%	1.68%	1.52%	0.78%	0.31%	7.09%	
9 AM								
Sum of casual_count	0.40%	0.36%	0.41%	0.48%	0.44%	0.31%	0.47%	2.87%	
Sum of member_coun	0.40%	0.53%	0.73%	0.92%	0.78%	0.52%	0.51%	4.39%	
10 AM								
Sum of casual_count	0.77%	0.40%	0.39%	0.50%	0.49%	0.38%	0.72%	3.66%	
Sum of member_coun	0.67%	0.46%	0.56%	0.66%	0.63%	0.47%	0.59%	4.05%	
11 AM								
Sum of casual_count	1.17%	0.71%	0.45%	0.61%	0.64%	0.49%	1.12%	5.20%	
Sum of member_coun	0.78%	0.62%	0.68%	0.70%	0.71%	0.59%	0.74%	4.82%	
12 PM								
Sum of casual_count	1.58%	0.90%	0.68%	0.80%	0.75%	0.57%	1.55%	6.83%	
Sum of member_coun	0.94%	0.73%	0.87%	0.87%	0.86%	0.65%	0.88%	5.81%	
1 PM								
Sum of casual_count	1.82%	0.99%	0.70%	0.86%	0.92%	0.51%	1.82%	7.63%	
Sum of member_coun	0.96%	0.75%	0.89%	0.86%	0.81%	0.55%	0.94%	5.76%	
2 PM								
Sum of casual_count	2.12%	1.15%	0.81%	1.09%	0.99%	0.51%	1.97%	8.65%	
Sum of member_coun	1.05%	0.80%	0.81%	0.86%	0.83%	0.58%	0.90%	5.83%	
3 PM								
Sum of casual_count	2.23%	1.47%	0.95%	1.28%	1.04%	0.55%	1.79%	9.31%	
Sum of member_coun	1.12%	1.07%	1.12%	1.05%	1.09%	0.68%	0.82%	6.95%	
4 PM								
Sum of casual_count	2.08%	1.77%	1.09%	1.68%	1.20%	0.67%	1.57%	10.06%	
Sum of member_coun	1.09%	1.59%	1.76%	1.67%	1.51%	0.93%	0.82%	9.37%	
5 PM								
Sum of casual_count	1.57%	2.33%	1.28%	2.11%	1.43%	0.78%	1.29%	10.77%	
Sum of member_coun	1.02%	2.06%	2.18%	2.17%	1.86%	1.02%	0.70%	11.01%	
6 PM								
Sum of casual_count	1.28%	1.82%	0.97%	1.75%	1.15%	0.62%	0.95%	8.54%	
Sum of member_coun	0.81%	1.56%	1.54%	1.69%	1.33%	0.83%	0.59%	8.35%	
7 PM								
Sum of casual_count	0.74%	1.07%	0.65%	1.11%	0.65%	0.38%	0.76%	5.37%	
Sum of member_coun	0.59%	0.97%	0.98%	1.07%	0.80%	0.51%	0.48%	5.40%	
8 PM								
Sum of casual_count	0.49%	0.70%	0.45%	0.73%	0.45%	0.25%	0.38%	3.44%	
Sum of member_coun	0.36%	0.60%	0.63%	0.72%	0.55%	0.34%	0.31%	3.52%	
9 PM								
Sum of casual_count	0.37%	0.56%	0.35%	0.50%	0.41%	0.23%	0.37%	2.78%	
Sum of member_coun	0.27%	0.44%	0.50%	0.48%	0.46%	0.26%	0.28%	2.70%	
10 PM								
Sum of casual_count	0.27%	0.41%	0.37%	0.49%	0.43%	0.22%	0.48%	2.67%	
Sum of member_coun	0.19%	0.24%	0.36%	0.35%	0.35%	0.18%	0.28%	1.96%	
11 PM								
Sum of casual_count	0.19%	0.23%	0.22%	0.39%	0.36%	0.29%	0.38%	2.05%	
Sum of member_coun	0.11%	0.14%	0.18%	0.22%	0.22%	0.20%	0.22%	1.29%	
Total Sum of casual_count	**18.44%**	**16.08%**	**11.30%**	**16.19%**	**13.37%**	**7.96%**	**16.68%**	**100.00%**	
Total Sum of member_count	**11.37%**	**15.17%**	**17.72%**	**18.52%**	**16.55%**	**10.56%**	**10.12%**	**100.00%**	
Max Casual	**2.225%**	**1.277%**	**1.277%**	**2.106%**	**1.430%**	**0.775%**	**1.974%**	**10.772%**	
Min Casual	**0.045%**	**0.026%**	**0.026%**	**0.029%**	**0.044%**	**0.036%**	**0.025%**	**0.252%**	
Max Member	**1.124%**	**2.062%**	**2.177%**	**2.172%**	**1.856%**	**1.023%**	**1.023%**	**11.008%**	
Min Member	**0.029%**	**0.018%**	**0.022%**	**0.016%**	**0.017%**	**0.024%**	**0.028%**	**0.206%**	

Hourly Count of Total Rides

	Column Labels															
	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total Sum of casual_count	Total Sum of member_count
Row Labels	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count	Sum of casual_count	Sum of member_count		
12 AM	266	319	85	122	107	163	97	148	137	168	180	196	193	307	1065	1423
1 AM	226	222	51	51	55	74	48	65	106	100	93	100	161	214	740	826
2 AM	125	124	49	34	39	49	32	31	46	34	60	54	96	127	447	453
3 AM	102	114	23	37	23	42	26	31	39	33	32	47	50	95	295	399
4 AM	40	56	32	54	29	80	30	80	40	70	33	66	22	54	226	460
5 AM	42	75	54	356	74	477	82	480	72	371	54	248	44	67	422	2074
6 AM	78	162	138	771	178	1198	190	1292	179	1073	105	694	72	173	940	5363
7 AM	136	332	300	1657	376	2595	485	2817	512	2494	220	1426	102	407	2131	11728
8 AM	205	533	364	1946	470	2949	617	3262	676	2942	294	1521	217	601	2843	13754
9 AM	355	782	322	1035	372	1413	430	1778	390	1522	281	1000	419	992	2569	8522
10 AM	693	1310	361	901	351	1090	452	1272	439	1223	341	914	648	1148	3285	7858
11 AM	1048	1505	634	1198	406	1324	551	1355	576	1383	443	1145	1004	1446	4662	9356
12 PM	1414	1832	807	1425	610	1689	720	1695	674	1668	511	1265	1387	1700	6123	11274
1 PM	1633	1858	886	1461	631	1720	774	1663	822	1579	460	1071	1635	1830	6841	11182
2 PM	1899	2032	1029	1554	729	1582	976	1675	889	1618	461	1119	1770	1746	7753	11326
3 PM	1995	2182	1322	2068	849	2165	1147	2041	935	2115	495	1327	1603	1597	8346	13495
4 PM	1862	2117	1589	3081	976	3425	1510	3240	1075	2922	602	1814	1408	1593	9022	18192
5 PM	1407	1978	2088	4003	1145	4225	1888	4217	1282	3603	695	1986	1152	1356	9657	21368
6 PM	1151	1579	1629	3023	874	2985	1565	3288	1033	2585	555	1605	851	1144	7658	16209
7 PM	666	1138	957	1892	584	1894	996	2081	586	1551	342	990	680	938	4811	10484
8 PM	437	692	626	1171	403	1226	651	1396	401	1075	221	661	341	603	3080	6824
9 PM	333	529	500	850	314	979	451	935	367	891	202	503	328	546	2495	5233
10 PM	244	372	364	470	334	707	441	673	385	683	200	356	428	541	2396	3802
11 PM	170	219	202	278	198	346	351	434	324	432	257	382	338	419	1840	2510
Grand Total	**16527**	**22062**	**14412**	**29438**	**10127**	**34397**	**14510**	**35940**	**11985**	**32135**	**7137**	**20490**	**14049**	**19644**	**89647**	**194115**

Summary of Costs and Savings

Sum of casual_cost	Sum of member_savings	Sum of member_costs
$ 621,295.14	$ 266,033.42	$ 189,826.80

Cost and Savings per Day of the Week

Row Labels	Sum of member_savings	Sum of casual_cost	Sum of member_costs
Sun	$ 32,899.14	$ 128,448.19	$ 24,632.83
Mon	$ 42,080.47	$ 109,810.82	$ 28,817.71
Tue	$ 44,768.38	$ 59,301.74	$ 30,239.21
Wed	$ 49,805.73	$ 99,081.51	$ 34,155.58
Thu	$ 41,627.66	$ 73,008.82	$ 29,093.45
Fri	$ 25,862.10	$ 41,379.30	$ 20,520.26
Sat	$ 28,989.94	$ 110,264.76	$ 22,367.76
Grand Total	**$ 266,033.42**	**$ 621,295.14**	**$ 189,826.80**

Rideable Preference

Count of rideable_type	Column Labels		
Row Labels	casual	member	Grand Total
classic_bike	48.90%	51.21%	50.48%
electric_bike	51.10%	48.79%	49.52%
Grand Total	**100.00%**	**100.00%**	**100.00%**

length_start (Multiple Items)

Casual: Top 20% Start Stations

Row Labels	Sum of casual_coun	MatchCasualE	MatchMemSS	Latitude	Longitude
Streeter Dr & Grand	2393	Yes	No	41.8924761114257	-87.6121237899559
DuSable Lake Shore	1430	Yes	No	41.8811736336955	-87.6167215341562
Millennium Park	1157	Yes	No	41.8813908331593	-87.6242560534700
Shedd Aquarium	934	Yes	No	41.8688358532345	-87.6155478613286
Michigan Ave & Oak	775	Yes	No	41.9010913020675	-87.6237531366113
DuSable Lake Shore	631	Yes	No	41.9118979819810	-87.6269067891458
Theater on the Lake	593	Yes	No	41.9266185038677	-87.6310624951090
Indiana Ave & Roose	562	Yes	No	41.8680792297210	-87.6231215110817
Wells St & Concord I	533	Yes	Yes	41.9123405623043	-87.6347309267359
Michigan Ave & Was	530	Yes	Yes	41.8840517109334	-87.6247480237301
Wells St & Elm St	506	Yes	Yes	41.9033575929013	-87.6343366119560
Dusable Harbor	501	Yes	No	41.8892420058690	-87.6129508517966
New St & Illinois St	487	Yes	No	41.8940031962983	-87.6192301472206
Clark St & Armitage	475	Yes	No	41.9207997062424	-87.6369634349238
Clark St & Lincoln Av	467	Yes	No	41.9184857228446	-87.6350816382523
Adler Planetarium	462	Yes	No	41.8692567421796	-87.6078659811475
Wabash Ave & Gran	440	Yes	Yes	41.8949031655137	-87.6271970833959
Michigan Ave & Lake	439	Yes	No	41.8889939388868	-87.6245889668216
Clark St & Elm St	437	Yes	Yes	41.9045697392674	-87.6309520690490
Damen Ave & Pierce	400	Yes	No	41.9108714366849	-87.6778694292933
Ashland Ave & Divisi	387	No	Yes	41.9050532975931	-87.6678158206696
Wells St & Evergreer	374	No	No	41.9081386537539	-87.6350348287986
Michigan Ave & 8th	374	No	No	41.8736670119042	-87.6239988564929
Grand Total	**15287**				

length_end (Multiple Items)

Casual: Top 20% End Stations

Row Labels	Sum of casual_count	MatchCasualSS	Latitude	Longitude
Streeter Dr & Grand Ave	2364	Yes	41.8924761114257	-87.6121237899559
DuSable Lake Shore Dr & Monroe St	1387	Yes	41.8811736336955	-87.6167215341562
Millennium Park	1209	Yes	41.8813908331593	-87.6242560534700
Michigan Ave & Oak St	849	Yes	41.9010913020675	-87.6237531366113
Shedd Aquarium	842	Yes	41.8688358532345	-87.6155478613286
DuSable Lake Shore Dr & North Blvd	704	Yes	41.9118979819810	-87.6269067891458
Theater on the Lake	623	Yes	41.9266185038677	-87.6310624951090
Indiana Ave & Roosevelt Rd	542	Yes	41.8680792297210	-87.6231215110817
Dusable Harbor	520	Yes	41.8892420058690	-87.6129508517966
Clark St & Armitage Ave	510	Yes	41.9207997062424	-87.6369634349238
Wells St & Concord Ln	492	Yes	41.9123405623043	-87.6347309267359
Michigan Ave & Washington St	489	Yes	41.8840517109334	-87.6247480237301
Wells St & Elm St	456	Yes	41.9033575929013	-87.6343366119560
New St & Illinois St	451	Yes	41.8940031962983	-87.6192301472206
Wabash Ave & Grand Ave	449	Yes	41.8949031655137	-87.6271970833959
Michigan Ave & Lake St	434	Yes	41.8889939388868	-87.6245889668216
Adler Planetarium	429	Yes	41.8692567421796	-87.6078659811475
Clark St & Lincoln Ave	424	Yes	41.9184857228446	-87.6350816382523
Clark St & Elm St	423	Yes	41.9045697392674	-87.6309520690490
Fairbanks Ct & Grand Ave	419	No	41.8920627289758	-87.6206472715077
Damen Ave & Pierce Ave	411	Yes	41.9108714366849	-87.6778694292933
LaSalle St & Illinois St	395	No	41.8911632021161	-87.6319698872644
Grand Total	**14822**			

length_start (Multiple Items)

Members Top 20% Start Stations

Row Labels	Sum of member_co	atchMember	Latitude	Longitude
Kingsbury St & Kinzi	1765	Yes	##########	-87.6385848810274
University Ave & 57t	1431	Yes	##########	-87.5998945850770
Clinton St & Washin	1420	Yes	##########	-87.6415779656104
Ellis Ave & 60th St	1408	Yes	##########	-87.6010418580451
Clark St & Elm St	1396	Yes	##########	-87.6312502880900
Clinton St & Madiso	1333	Yes	##########	-87.6418203676535
Wells St & Concord I	1158	Yes	##########	-87.6346558960215
Wells St & Elm St	1132	Yes	##########	-87.6343437124586
Dearborn St & Erie S	1132	Yes	##########	-87.6295800644168
Canal St & Adams St	1083	Yes	##########	-87.6400706574745
Wells St & Hubbard	1071	Yes	##########	-87.6343077765811
Wabash Ave & Gran	1054	Yes	##########	-87.6270211289673
Clinton St & Jackson	1030	Yes	##########	-87.6410784144706
Wells St & Huron St	1016	Yes	##########	-87.6343222521812
Sheffield Ave & Fulle	963	Yes	##########	-87.6539197270790
Clinton St & Lake St	960	Yes	##########	-87.6418280875258
Larrabee St & Kingst	954	Yes	##########	-87.6429826686782
Desplaines St & Kinz	947	Yes	##########	-87.6445620286719
Ashland Ave & Divisi	925	Yes	##########	-87.6680745023798
Dearborn St & Monr	925	Yes	##########	-87.6296713149722
Broadway & Barry A	921	Yes	##########	-87.6441198149528
Loomis St & Lexingtc	917	Yes	##########	-87.6616531542348
St. Clair St & Erie St	906	Yes	##########	-87.6233880856988
Green St & Madison	895	Yes	##########	-87.6490848972312
Daley Center Plaza	887	Yes	##########	-87.6298155932669
Ellis Ave & 55th St	887	Yes	##########	-87.6015678189183
Wilton Ave & Belmo	884	Yes	##########	-87.6530089190793
Kingsbury St & Erie S	833	Yes	##########	-87.6417813561969
Canal St & Madison	827	Yes	##########	-87.6395905342855
Michigan Ave & Was	822	Yes	##########	-87.6247612864448
Dearborn Pkwy & De	811	No	##########	-87.6299131275686
Grand Total	**32693**			

length_end (Multiple Items)

Members Top 20% End Stations

Row Labels	Sum of member_count			
Kingsbury St & Kinzie St	1699	Yes	41.8896257007612	-87.6385848810274
Clinton St & Washington Blvd	1528	Yes	41.8836212341433	-87.6415779656104
University Ave & 57th St	1456	Yes	41.7916484887752	-87.5998945850770
Clinton St & Madison St	1406	Yes	41.8830027245298	-87.6418203676535
Clark St & Elm St	1371	Yes	41.9031324886274	-87.6312502880900
Ellis Ave & 60th St	1334	Yes	41.7852649646342	-87.6010418580451
Wells St & Concord Ln	1187	Yes	41.9123086160268	-87.6346558960215
Canal St & Adams St	1138	Yes	41.8794213914448	-87.6400706574745
Dearborn St & Erie St	1132	Yes	41.8943744331184	-87.6295800644168
Wells St & Elm St	1096	Yes	41.9036871311838	-87.6343437124586
Wells St & Hubbard St	1078	Yes	41.8900862265413	-87.6343077765811
Wabash Ave & Grand Ave	1022	Yes	41.8913206599424	-87.6270211289673
Wells St & Huron St	1017	Yes	41.8953039491043	-87.6343222521812
Clinton St & Lake St	989	Yes	41.8858114459412	-87.6418280875258
Larrabee St & Kingsbury St	988	Yes	41.8979002058690	-87.6429826686782
Green St & Madison St	981	Yes	41.8820977654953	-87.6490848972312
Broadway & Barry Ave	973	Yes	41.9375822795298	-87.6441198149528
Sheffield Ave & Fullerton Ave	965	Yes	41.9256657367568	-87.6539197270790
Ashland Ave & Division St	964	Yes	41.9039749061641	-87.6680745023798
Clinton St & Jackson Blvd	912	Yes	41.8784922407449	-87.6410784144706
Dearborn St & Monroe St	912	Yes	41.8813748643699	-87.6296713149722
St. Clair St & Erie St	910	Yes	41.8944135304328	-87.6233880856988
Ellis Ave & 55th St	899	Yes	41.7943026533793	-87.6015678189183
Daley Center Plaza	887	Yes	41.8843029942809	-87.6298155932669
Wilton Ave & Belmont Ave	884	Yes	41.9402329934698	-87.6530089190793
Michigan Ave & Washington St	882	Yes	41.8839631187809	-87.6247612864448
Loomis St & Lexington St	862	Yes	41.8721835621258	-87.6616531542348
Canal St & Madison St	860	Yes	41.8828204531624	-87.6395905342855
Desplaines St & Kinzie St	853	Yes	41.8896741464697	-87.6445620286719
Wabash Ave & Roosevelt Rd	850	No	41.8672587504652	-87.6260701878610
Kingsbury St & Erie St	801	Yes	41.8938044425853	-87.6417813561969
Grand Total	**32836**			

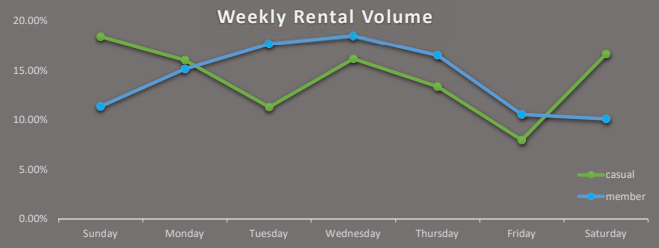
Most Popular Stations (Top 20%)			
Station Name	**Latitude**	**Longitude**	**member_casual**
Streeter Dr & Grand Ave	41.89247611	-87.61212379	casual
DuSable Lake Shore Dr & Monroe St	41.88117363	-87.61672153	casual
Millennium Park	41.88139083	-87.62425605	casual
Shedd Aquarium	41.86883585	-87.61554786	casual
Michigan Ave & Oak St	41.90109130	-87.62375314	casual
DuSable Lake Shore Dr & North Blvd	41.91189798	-87.62690679	casual
Theater on the Lake	41.92661850	-87.63106250	casual
Indiana Ave & Roosevelt Rd	41.86807923	-87.62312151	casual
Wells St & Concord Ln	41.91234056	-87.63473093	casual
Michigan Ave & Washington St	41.88405171	-87.62474802	casual
Wells St & Elm St	41.90335759	-87.63433661	casual
Dusable Harbor	41.88924201	-87.61295085	casual
New St & Illinois St	41.89400320	-87.61923015	casual
Clark St & Armitage Ave	41.92079971	-87.63696343	casual
Clark St & Lincoln Ave	41.91848572	-87.63508164	casual
Adler Planetarium	41.86925674	-87.60786598	casual
Wabash Ave & Grand Ave	41.89490317	-87.62719708	casual
Michigan Ave & Lake St	41.88899394	-87.62458897	casual
Clark St & Elm St	41.90456974	-87.63095207	casual
Damen Ave & Pierce Ave	41.91087144	-87.67786943	casual
Ashland Ave & Division St	41.90505330	-87.66781582	casual
Wells St & Evergreen Ave	41.90813865	-87.63503483	casual
Michigan Ave & 8th St	41.87366701	-87.62399886	casual
Fairbanks Ct & Grand Ave	41.89206273	-87.62064727	casual
LaSalle St & Illinois St	41.89116320	-87.63196989	casual
Kingsbury St & Kinzie St	41.88962570	-87.63858488	member
University Ave & 57th St	41.79164849	-87.59989459	member
Clinton St & Washington Blvd	41.88362123	-87.64157797	member
Ellis Ave & 60th St	41.78526496	-87.60104186	member
Clark St & Elm St	41.90313249	-87.63125029	member
Clinton St & Madison St	41.88300272	-87.64182037	member
Wells St & Concord Ln	41.91230862	-87.63465590	member
Wells St & Elm St	41.90368713	-87.63434371	member
Dearborn St & Erie St	41.89437443	-87.62958006	member
Canal St & Adams St	41.87942139	-87.64007066	member
Wells St & Hubbard St	41.89008623	-87.63430778	member
Wabash Ave & Grand Ave	41.89132066	-87.62702113	member
Clinton St & Jackson Blvd	41.87849224	-87.64107841	member
Wells St & Huron St	41.89530395	-87.63432225	member
Sheffield Ave & Fullerton Ave	41.92566574	-87.65391973	member
Clinton St & Lake St	41.88581145	-87.64182809	member
Larrabee St & Kingsbury St	41.89790021	-87.64298267	member
Desplaines St & Kinzie St	41.88967415	-87.64456203	member
Ashland Ave & Division St	41.90397491	-87.66807450	member
Dearborn St & Monroe St	41.88137486	-87.62967131	member
Broadway & Barry Ave	41.93758228	-87.64411981	member
Loomis St & Lexington St	41.87218356	-87.66165315	member
St. Clair St & Erie St	41.89441353	-87.62338809	member
Green St & Madison St	41.88209777	-87.64908490	member
Daley Center Plaza	41.88430299	-87.62981559	member
Ellis Ave & 55th St	41.79430265	-87.60156782	member
Wilton Ave & Belmont Ave	41.94023299	-87.65300892	member
Kingsbury St & Erie St	41.89380444	-87.64178136	member
Canal St & Madison St	41.88282045	-87.63959053	member
Michigan Ave & Washington St	41.88396312	-87.62476129	member
Dearborn Pkwy & Delaware Pl	41.89897403	-87.62991313	member
Wabash Ave & Roosevelt Rd	41.86725875	-87.62607019	member

Casual Hourly Rental Percent of Total

Row Labels	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
12 AM								
Sum of casual_count	266	85	107	97	137	180	193	1065
Sum of member_count	319	122	163	148	168	196	307	1423
Casual Percent	**83.39%**	**69.67%**	**65.64%**	**65.54%**	**81.55%**	**91.84%**	**62.87%**	**74.84%**
1 AM								
Sum of casual_count	226	51	55	48	106	93	161	740
Sum of member_count	222	51	74	65	100	100	214	826
Casual Percent	**101.80%**	**100.00%**	**74.32%**	**73.85%**	**106.00%**	**93.00%**	**75.23%**	**89.59%**
2 AM								
Sum of casual_count	125	49	39	32	46	60	96	447
Sum of member_count	124	34	49	31	34	54	127	453
Casual Percent	**100.81%**	**144.12%**	**79.59%**	**103.23%**	**135.29%**	**111.11%**	**75.59%**	**98.68%**
3 AM								
Sum of casual_count	102	23	23	26	39	32	50	295
Sum of member_count	114	37	42	31	33	47	95	399
Casual Percent	**89.47%**	**62.16%**	**54.76%**	**83.87%**	**118.18%**	**68.09%**	**52.63%**	**73.93%**
4 AM								
Sum of casual_count	40	32	29	30	40	33	22	226
Sum of member_count	56	54	80	80	70	66	54	460
Casual Percent	**71.43%**	**59.26%**	**36.25%**	**37.50%**	**57.14%**	**50.00%**	**40.74%**	**49.13%**
5 AM								
Sum of casual_count	42	54	74	82	72	54	44	422
Sum of member_count	75	356	477	480	371	248	67	2074
Casual Percent	**56.00%**	**15.17%**	**15.51%**	**17.08%**	**19.41%**	**21.77%**	**65.67%**	**20.35%**
6 AM								
Sum of casual_count	78	138	178	190	179	105	72	940
Sum of member_count	162	771	1198	1292	1073	694	173	5363
Casual Percent	**48.15%**	**17.90%**	**14.86%**	**14.71%**	**16.68%**	**15.13%**	**41.62%**	**17.53%**
7 AM								
Sum of casual_count	136	300	376	485	512	220	102	2131
Sum of member_count	332	1657	2595	2817	2494	1426	407	11728
Casual Percent	**40.96%**	**18.11%**	**14.49%**	**17.22%**	**20.53%**	**15.43%**	**25.06%**	**18.17%**
8 AM								
Sum of casual_count	205	364	470	617	676	294	217	2843
Sum of member_count	533	1946	2949	3262	2942	1521	601	13754
Casual Percent	**38.46%**	**18.71%**	**15.94%**	**18.91%**	**22.98%**	**19.33%**	**36.11%**	**20.67%**
9 AM								
Sum of casual_count	355	322	372	430	390	281	419	2569
Sum of member_count	782	1035	1413	1778	1522	1000	992	8522
Casual Percent	**45.40%**	**31.11%**	**26.33%**	**24.18%**	**25.62%**	**28.10%**	**42.24%**	**30.15%**
10 AM								
Sum of casual_count	693	361	351	452	439	341	648	3285
Sum of member_count	1310	901	1090	1272	1223	914	1148	7858
Casual Percent	**52.90%**	**40.07%**	**32.20%**	**35.53%**	**35.90%**	**37.31%**	**56.45%**	**41.80%**
11 AM								
Sum of casual_count	1048	634	406	551	576	443	1004	4662
Sum of member_count	1505	1198	1324	1355	1383	1145	1446	9356
Casual Percent	**69.63%**	**52.92%**	**30.66%**	**40.66%**	**41.65%**	**38.69%**	**69.43%**	**49.83%**
12 PM								
Sum of casual_count	1414	807	610	720	674	511	1387	6123
Sum of member_count	1832	1425	1689	1695	1668	1265	1700	11274
C% Absolute	**77.18%**	**56.63%**	**36.12%**	**42.48%**	**40.41%**	**40.40%**	**81.59%**	**54.31%**
1 PM								
Sum of casual_count	1633	886	631	774	822	460	1635	6841
Sum of member_count	1858	1461	1720	1663	1579	1071	1830	11182
Casual Percent	**87.89%**	**60.64%**	**36.69%**	**46.54%**	**52.06%**	**42.95%**	**89.34%**	**61.18%**
2 PM								
Sum of casual_count	1899	1029	729	976	889	461	1770	7753
Sum of member_count	2032	1554	1582	1675	1618	1119	1746	11326
Casual Percent	**93.45%**	**66.22%**	**46.08%**	**58.27%**	**54.94%**	**41.20%**	**101.37%**	**68.45%**
3 PM								
Sum of casual_count	1995	1322	849	1147	935	495	1603	8346
Sum of member_count	2182	2068	2165	2041	2115	1327	1597	13495
C% Absolute	**91.43%**	**63.93%**	**39.21%**	**56.20%**	**44.21%**	**37.30%**	**100.38%**	**61.85%**
4 PM								
Sum of casual_count	1862	1589	976	1510	1075	602	1408	9022
Sum of member_count	2117	3081	3425	3240	2922	1814	1593	18192
C% Absolute	**87.95%**	**51.57%**	**28.50%**	**46.60%**	**36.79%**	**33.19%**	**88.39%**	**49.59%**
5 PM								
Sum of casual_count	1407	2088	1145	1888	1282	695	1152	9657
Sum of member_count	1978	4003	4225	4217	3603	1986	1356	21368
C% Absolute	**71.13%**	**52.16%**	**27.10%**	**44.77%**	**35.58%**	**34.99%**	**84.96%**	**45.19%**
6 PM								
Sum of casual_count	1151	1629	874	1565	1033	555	851	7658
Sum of member_count	1579	3023	2985	3288	2585	1605	1144	16209
C% Absolute	**72.89%**	**53.89%**	**29.28%**	**47.60%**	**39.96%**	**34.58%**	**74.39%**	**47.25%**
7 PM								
Sum of casual_count	666	957	584	996	586	342	680	4811
Sum of member_count	1138	1892	1894	2081	1551	990	938	10484
C% Absolute	**58.52%**	**50.58%**	**30.83%**	**47.86%**	**37.78%**	**34.55%**	**72.49%**	**45.89%**
8 PM								
Sum of casual_count	437	626	403	651	401	221	341	3080
Sum of member_count	692	1171	1226	1396	1075	661	603	6824
C% Absolute	**63.15%**	**53.46%**	**32.87%**	**46.63%**	**37.30%**	**33.43%**	**56.55%**	**45.13%**
9 PM								
Sum of casual_count	333	500	314	451	367	202	328	2495
Sum of member_count	529	850	979	935	891	503	546	5233
C% Absolute	**62.95%**	**58.82%**	**32.07%**	**48.24%**	**41.19%**	**40.16%**	**60.07%**	**47.68%**
10 PM								
Sum of casual_count	244	364	334	441	385	200	428	2396
Sum of member_count	372	470	707	673	683	356	541	3802
C% Absolute	**65.59%**	**77.45%**	**47.24%**	**65.53%**	**56.37%**	**56.18%**	**79.11%**	**63.02%**
11 PM								
Sum of casual_count	170	202	198	351	324	257	338	1840
Sum of member_count	219	278	346	434	432	382	419	2510
C% Absolute	**77.63%**	**72.66%**	**57.23%**	**80.88%**	**75.00%**	**67.28%**	**80.67%**	**73.31%**
Sum of casual_count	**16527**	**14412**	**10127**	**14510**	**11985**	**7137**	**14949**	**89647**
Sum of member_count	**22062**	**29438**	**34397**	**35949**	**32135**	**20490**	**19644**	**194115**
Casual Percent Weekday	**74.91%**	**48.96%**	**29.44%**	**40.36%**	**37.30%**	**34.83%**	**76.10%**	**46.18%**

DIVVY MARCH 2022 ANALYSIS

Casual Rentals	Member Rentals	Casual % of Rentals	Casual Cost	Member Savings
89,647	194,115	32%	$621,295.14	$266,033.42

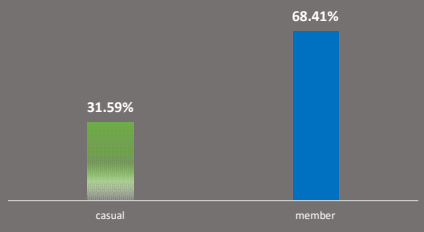


Casual vs Member Rental Ratio by Hour

< 32% >90%

Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Sparkline
12 AM	83.39%	69.67%	65.64%	65.54%	81.55%	91.84%	62.87%	74.84%	
1 AM	101.80%	100.00%	74.32%	73.85%	106.00%	93.00%	75.23%	89.59%	
2 AM	100.81%	144.12%	79.59%	103.23%	135.29%	111.11%	75.59%	98.68%	
3 AM	89.47%	62.16%	54.76%	83.87%	118.18%	68.09%	52.63%	73.93%	
4 AM	71.43%	59.26%	36.25%	37.50%	57.14%	50.00%	40.74%	49.13%	
5 AM	56.00%	15.17%	15.51%	17.08%	19.41%	21.77%	65.67%	20.35%	
6 AM	48.15%	17.90%	14.86%	14.71%	16.68%	15.13%	41.62%	17.53%	
7 AM	40.96%	18.11%	14.49%	17.22%	20.53%	15.43%	25.06%	18.17%	
8 AM	38.46%	18.71%	15.94%	18.91%	22.98%	19.33%	36.11%	20.67%	
9 AM	45.40%	31.11%	26.33%	24.18%	25.62%	28.10%	42.24%	30.15%	
10 AM	52.90%	40.07%	32.20%	35.53%	35.90%	37.31%	56.45%	41.80%	
11 AM	69.63%	52.92%	30.66%	40.66%	41.65%	38.69%	69.43%	49.83%	
12 PM	77.18%	56.63%	36.12%	42.48%	40.41%	40.40%	81.59%	54.31%	
1 PM	87.89%	60.64%	36.69%	46.54%	52.06%	42.95%	89.34%	61.18%	
2 PM	93.45%	66.22%	46.08%	58.27%	54.94%	41.20%	101.37%	68.45%	
3 PM	91.43%	63.93%	39.21%	56.20%	44.21%	37.30%	100.38%	61.85%	
4 PM	87.95%	51.57%	28.50%	46.60%	36.79%	33.19%	88.39%	49.59%	
5 PM	71.13%	52.16%	27.10%	44.77%	35.58%	34.99%	84.96%	45.19%	
6 PM	72.89%	53.89%	29.28%	47.60%	39.96%	34.58%	74.39%	47.25%	
7 PM	58.52%	50.58%	30.83%	47.86%	37.78%	34.55%	72.49%	45.89%	
8 PM	63.15%	53.46%	32.87%	46.63%	37.30%	33.43%	56.55%	45.13%	
9 PM	62.95%	58.82%	32.07%	48.24%	41.19%	40.16%	60.07%	47.68%	
10 PM	65.59%	77.45%	47.24%	65.53%	56.37%	56.18%	79.11%	63.02%	
11 PM	77.63%	72.66%	57.23%	80.88%	75.00%	67.28%	80.67%	73.31%	

CASUAL VS MEMBER RENTALS



Casual: Top 20% Rental Locations

Station Name	Rentals
Streeter Dr & Grand Ave	2393
DuSable Lake Shore Dr & Monroe St	1430
Millennium Park	1157
Shedd Aquarium	934
Michigan Ave & Oak St	775
DuSable Lake Shore Dr & North Blvd	631
Theater on the Lake	593
Indiana Ave & Roosevelt Rd	562
Wells St & Concord Ln	533
Michigan Ave & Washington St	530
Wells St & Elm St	506
Dusable Harbor	501
New St & Illinois St	487
Clark St & Armitage Ave	475
Clark St & Lincoln Ave	467
Adler Planetarium	462
Wabash Ave & Grand Ave	440
Michigan Ave & Lake St	439
Clark St & Elm St	437
Damen Ave & Pierce Ave	400
Ashland Ave & Division St	387
Wells St & Evergreen Ave	374
Michigan Ave & 8th St	374

Member: Top 20% Rental Locations

Station Name	Rentals
Kingsbury St & Kinzie St	1765
University Ave & 57th St	1431
Clinton St & Washington Blvd	1420
Ellis Ave & 60th St	1408
Clark St & Elm St	1396
Clinton St & Madison St	1333
Wells St & Concord Ln	1158
Wells St & Elm St	1132
Dearborn St & Erie St	1132
Canal St & Adams St	1083
Wells St & Hubbard St	1071
Wabash Ave & Grand Ave	1054
Clinton St & Jackson Blvd	1030
	1016
Sheffield Ave & Fullerton Ave	963
Clinton St & Lake St	960
Larrabee St & Kingsbury St	954
Desplaines St & Kinzie St	947
Ashland Ave & Division St	925
Dearborn St & Monroe St	925
Broadway & Barry Ave	921
Loomis St & Lexington St	917
St. Clair St & Erie St	906
Green St & Madison St	895
Daley Center Plaza	887
Ellis Ave & 55th St	887
Wilton Ave & Belmont Ave	884
Kingsbury St & Erie St	833
Canal St & Madison St	827
Michigan Ave & Washington St	822
Dearborn Pkwy & Delaware Pl	811

Dataset and License:

https://divvybikes.com/system-data

Research:

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