

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

Welcome to the Cyclistic bike-share analysis case study! In this case study, I had been worked for a fictional company, Cyclistic, and meet different characters and team members. In order to answer the key business questions, I had been followed the steps of the data analysis process: ask, prepare, process, analyze, share, and act.

Scenario

You are a junior data analyst working in the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company's future success depends on maximizing the number of annual memberships. Therefore, your team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, your team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve your recommendations, so they must be backed up with compelling data insights and professional data visualizations.

Ask:

Business Task

Analyse a marketing strategy to convert casual riders into annual members and understand user usage trend to solve the problem.

Prepare:

Load the dataset

You can download the dataset from [Download the previous 12 months of Cyclistic trip data](#) .

Download the file and unzip it in appropriate folder.

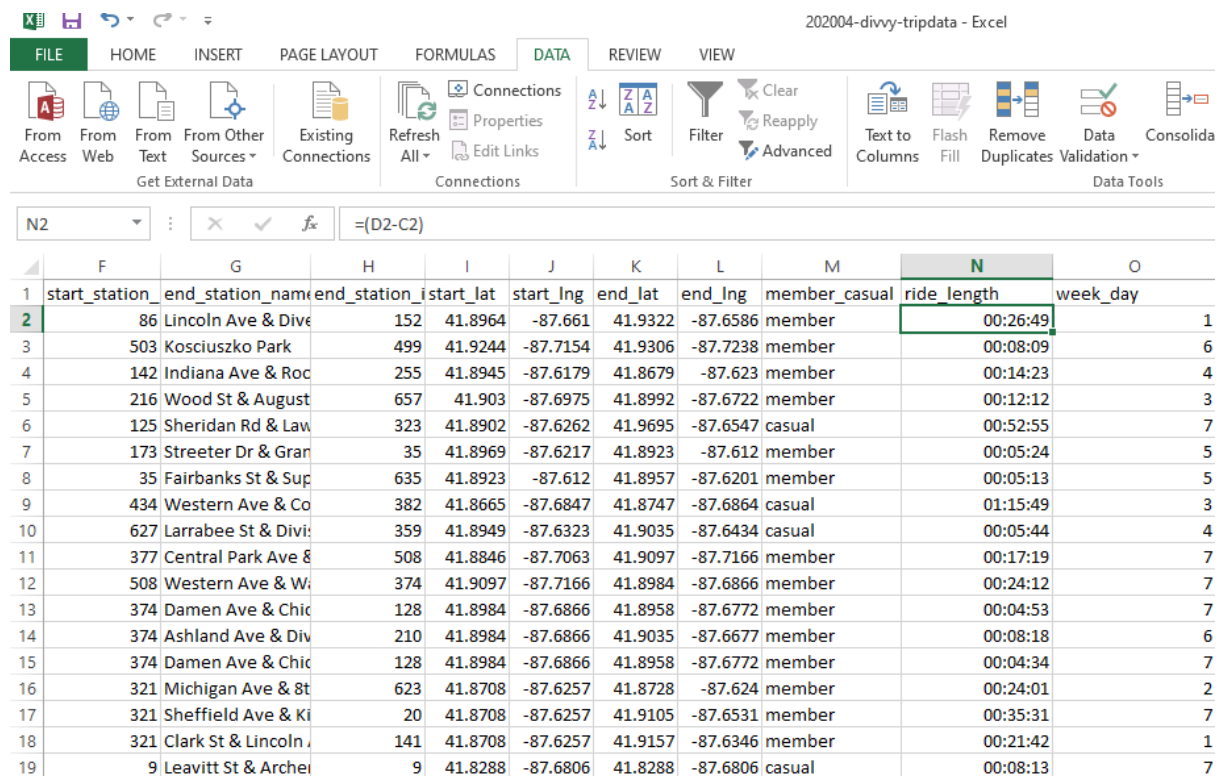
Process:

Tools used for data analysis

- Spreadsheets (Excel)
- R

Follow the steps

- Open your spreadsheet and create a column called “ride_length.”
- Calculate the length of each ride by subtracting the column “started_at” from the column “ended_at” (for example, =D2-C2) and format as HH:MM:SS using Format > Cells > Time > 37:30:55.
- Create a column called “week_day,” and calculate the day of the week that each ride started using the “WEEKDAY” command (for example, =WEEKDAY(C2,1)) in each file. Format as General or as a number with no decimals, noting that 1 = Sunday and 7 = Saturday.
- Proceed to the analyze step.



The screenshot shows the Microsoft Excel interface with the 'DATA' tab selected. The formula bar displays '=D2-C2'. The spreadsheet contains the following data:

	F	G	H	I	J	K	L	M	N	O
	start_station	end_station_name	end_station_id	start_lat	start_lng	end_lat	end_lng	member_casual	ride_length	week_day
2	86	Lincoln Ave & Dive	152	41.8964	-87.661	41.9322	-87.6586	member	00:26:49	1
3	503	Kosciuszko Park	499	41.9244	-87.7154	41.9306	-87.7238	member	00:08:09	6
4	142	Indiana Ave & Roc	255	41.8945	-87.6179	41.8679	-87.623	member	00:14:23	4
5	216	Wood St & August	657	41.903	-87.6975	41.8992	-87.6722	member	00:12:12	3
6	125	Sheridan Rd & Law	323	41.8902	-87.6262	41.9695	-87.6547	casual	00:52:55	7
7	173	Streeter Dr & Gran	35	41.8969	-87.6217	41.8923	-87.612	member	00:05:24	5
8	35	Fairbanks St & Sup	635	41.8923	-87.612	41.8957	-87.6201	member	00:05:13	5
9	434	Western Ave & Co	382	41.8665	-87.6847	41.8747	-87.6864	casual	01:15:49	3
10	627	Larrabee St & Divi	359	41.8949	-87.6323	41.9035	-87.6434	casual	00:05:44	4
11	377	Central Park Ave &	508	41.8846	-87.7063	41.9097	-87.7166	member	00:17:19	7
12	508	Western Ave & W	374	41.9097	-87.7166	41.8984	-87.6866	member	00:24:12	7
13	374	Damen Ave & Chic	128	41.8984	-87.6866	41.8958	-87.6772	member	00:04:53	7
14	374	Ashland Ave & Div	210	41.8984	-87.6866	41.9035	-87.6677	member	00:08:18	6
15	374	Damen Ave & Chic	128	41.8984	-87.6866	41.8958	-87.6772	member	00:04:34	7
16	321	Michigan Ave & 8t	623	41.8708	-87.6257	41.8728	-87.624	member	00:24:01	2
17	321	Sheffield Ave & Ki	20	41.8708	-87.6257	41.9105	-87.6531	member	00:35:31	7
18	321	Clark St & Lincoln	141	41.8708	-87.6257	41.9157	-87.6346	member	00:21:42	1
19	9	Leavitt St & Archer	9	41.8288	-87.6806	41.8288	-87.6806	casual	00:08:13	7

Analyze:

Follow the steps

Run a few calculations in one file to get a better sense of the data layout. Options:

- Calculate the mean of ride_length
- Calculate the max ride_length
- Calculate the mode of day_of_week

P	Q	R
avg_ride_length	max_ride_length	mode_week_day
00:35:51	18:40:02	1

Create a pivot table to quickly calculate and visualize the data. Options:

- Calculate the average ride_length for members and casual riders. Try rows = member_casual; Values = Average of ride_length.
- Calculate the average ride_length for users by day_of_week. Try columns = day_of_week; Rows = member_casual; Values = Average of ride_length.

The screenshot displays the Microsoft Excel interface. The main worksheet shows a PivotTable with the following data:

Count of ride_length	Column Labels	1	2	3	4	5	6	7	Grand Total
casual		6475	2681	3656	1799	2439	2510	4068	23628
member		11440	8064	9157	6919	9264	7462	8842	61148
Grand Total		17915	10745	12813	8718	11703	9972	12910	84776

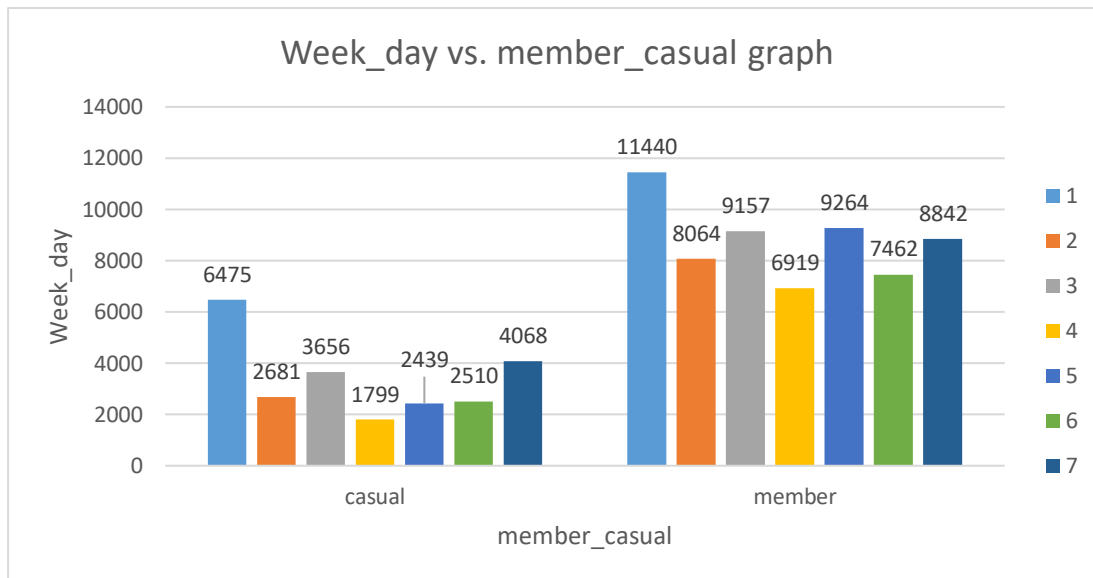
The PivotTable Fields task pane on the right shows the following configuration:

- Choose fields to add to report:**
 - ☐ start_lng
 - ☐ end_lng
 - ☐ end_lng
 - ☒ member_casual
 - ☒ ride_length
 - ☒ week_day
 - ☐ avg_ride_length
 - ☐ max_ride_length
 - ☐ mode_week_day
- Drag fields between areas below:**
 - FILTERS:** (empty)
 - COLUMNS:** week_day
 - ROWS:** member_casual
 - VALUES:** Count of ride...

The status bar at the bottom indicates the active workbook is "202004-divvy-tripdata" and the active sheet is "Pivot-1".

Share:

Now create data visualization using charts



Act:

From the above chart we can conclude that

Casual riders have less usage to Cyclistic than members which can be improved by paying attention on weekdays and introducing new schemes to grab attention of casual riders.