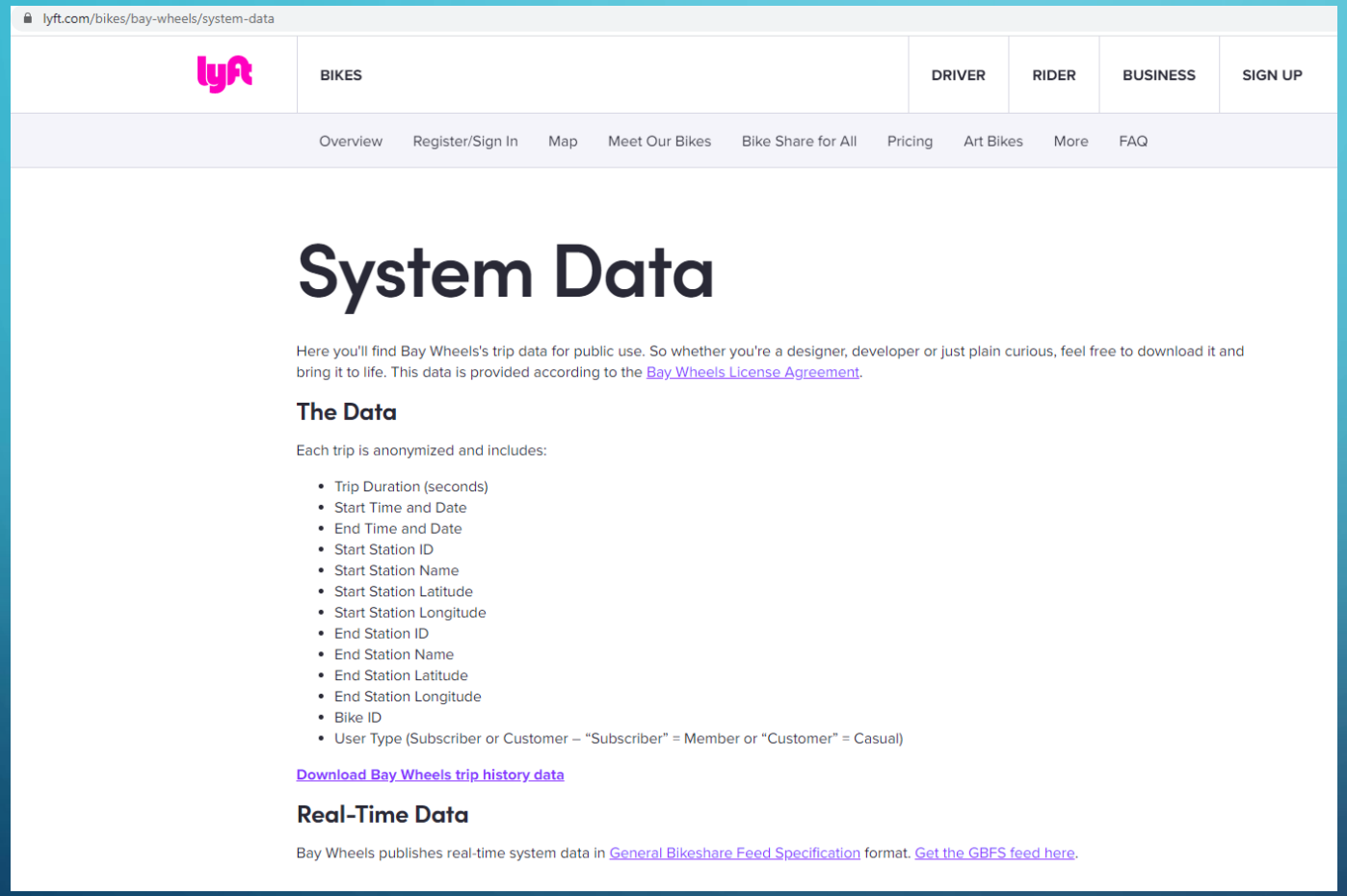
EXPLANATORY VISUALIZATION OF THE GROWTH POTENTIAL OF FORDGOBIKE / BAYWHEELS RIDE SHARING SERVICE

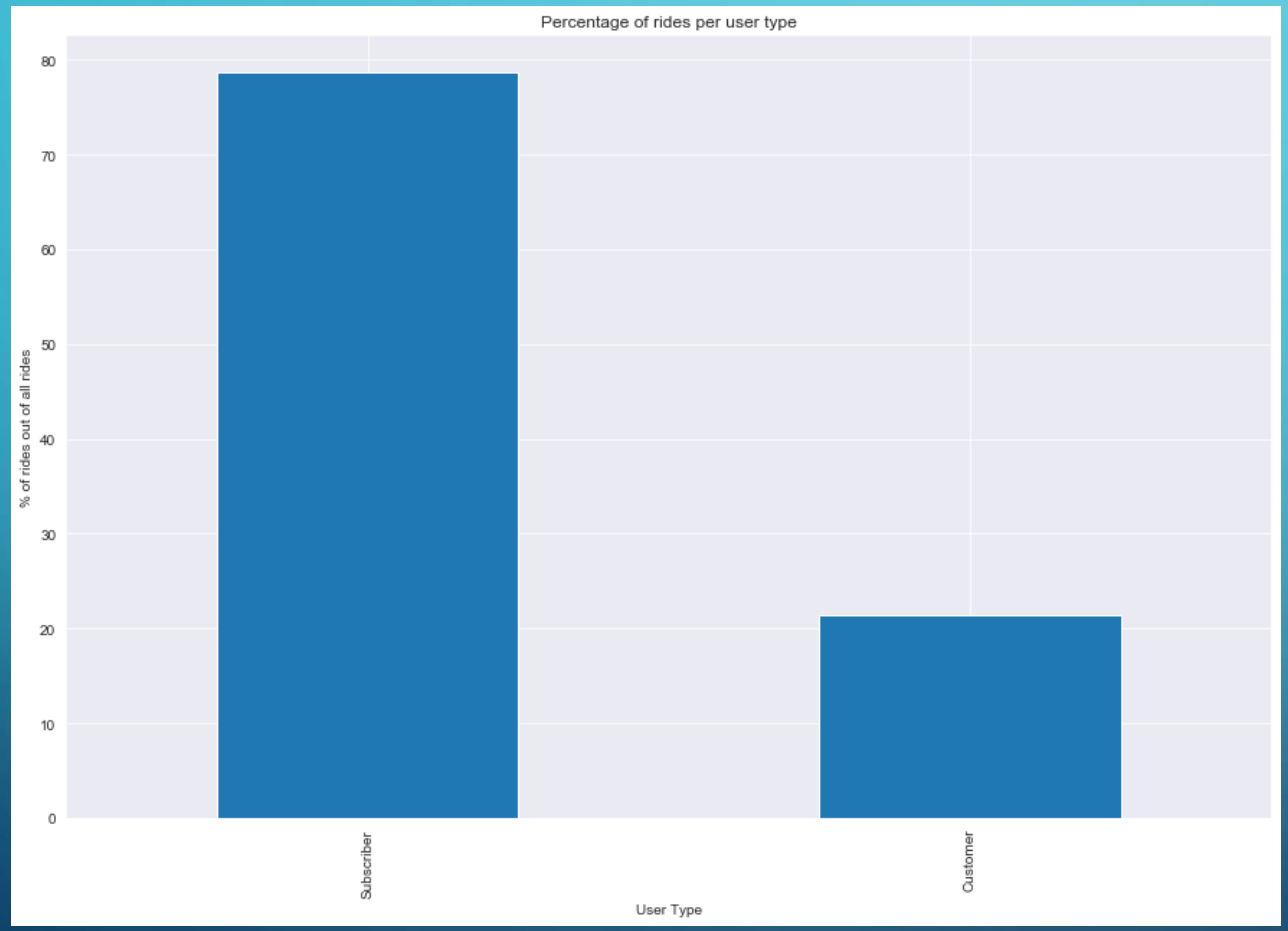
ALEX, 09.06.2020

A SHORT INTRODUCTION TO THE DATASET SHOWS THE SOURCE OF THE DATA AND THE MAIN CHARACTERISTICS



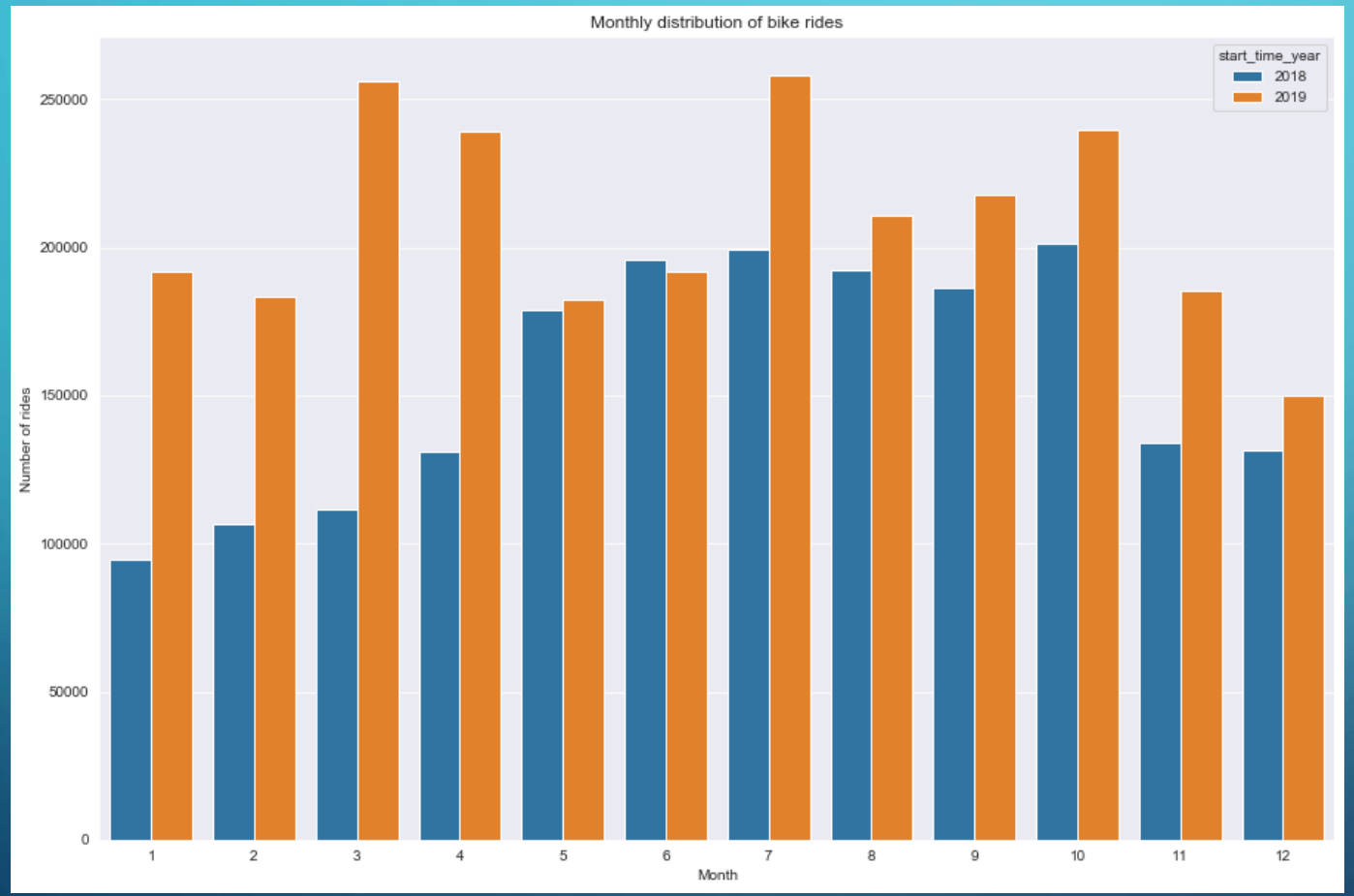
- The dataset was downloaded from: https://www.lyft.com/bikes/bay-wheels/system-data
- For the last project of the Udacity Data Analyst Nano Degree (DAND) program I will work on the FordGoBike / BayWheels dataset.
- FordGoBike and BayWheels is a public bicycle sharing company in the San Francisco Bay Area, California.
- The company share a lot of their user data through a specific Data License Agreement: https://baywheels-assets.s3.amazonaws.com/data-license-agreement.html

80% OF THE TOTAL RIDES ARE PERFORMED BY SUBSCRIBERS AS USER TYPE



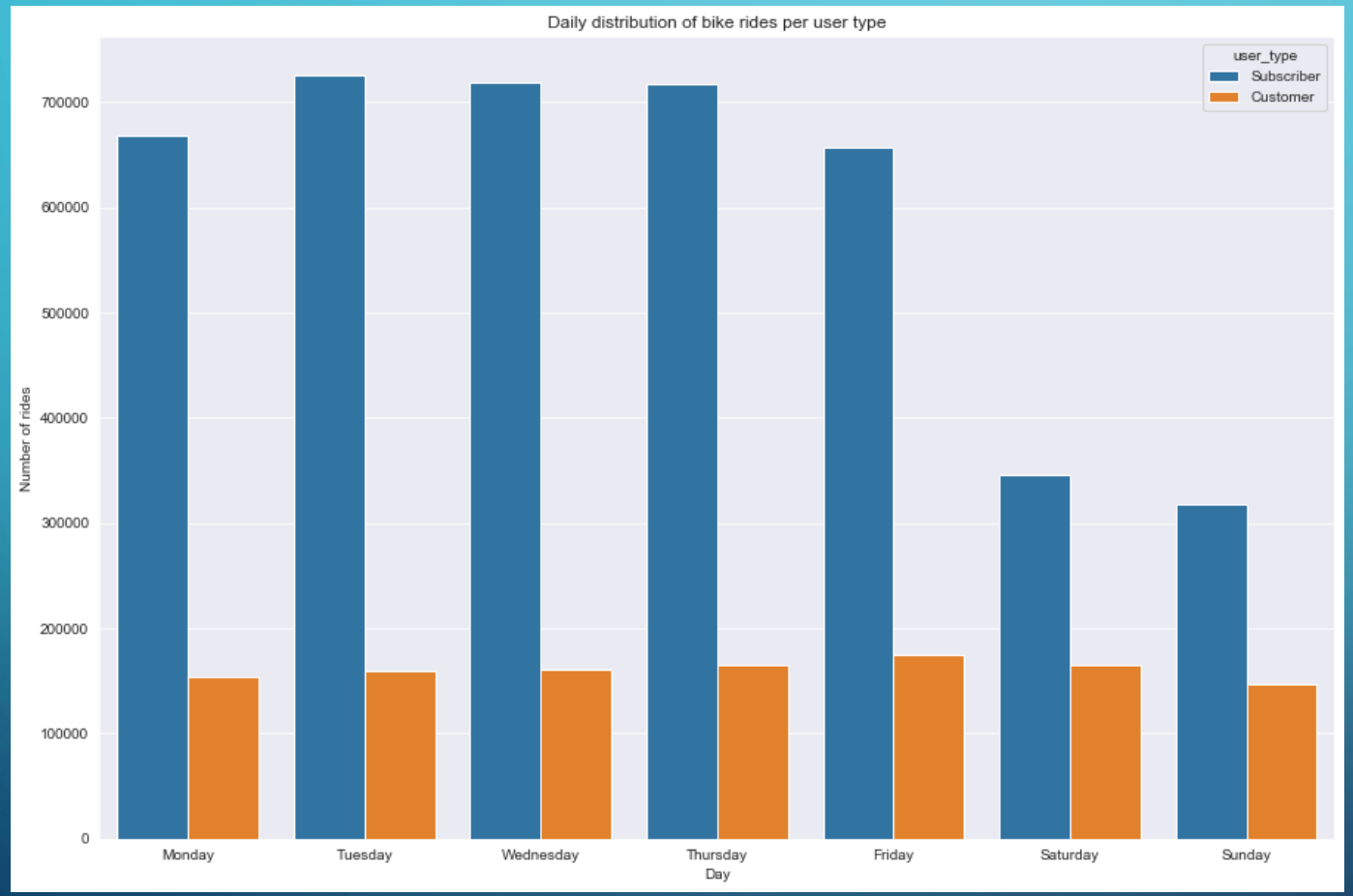
- The user type "subscriber" is responsible for over 80% of the total rides.
- At the moment there are different subscriber and member packages available.
- Pricing details can be found under the following link: https://www.lyft.com/bikes/bay-wheels/pricing

IN 2018 AND 2019 COMBINED THE MAIN USAGE OF THE BIKE RIDE SERVICE WAS IN THE MONTH OCTOBER.



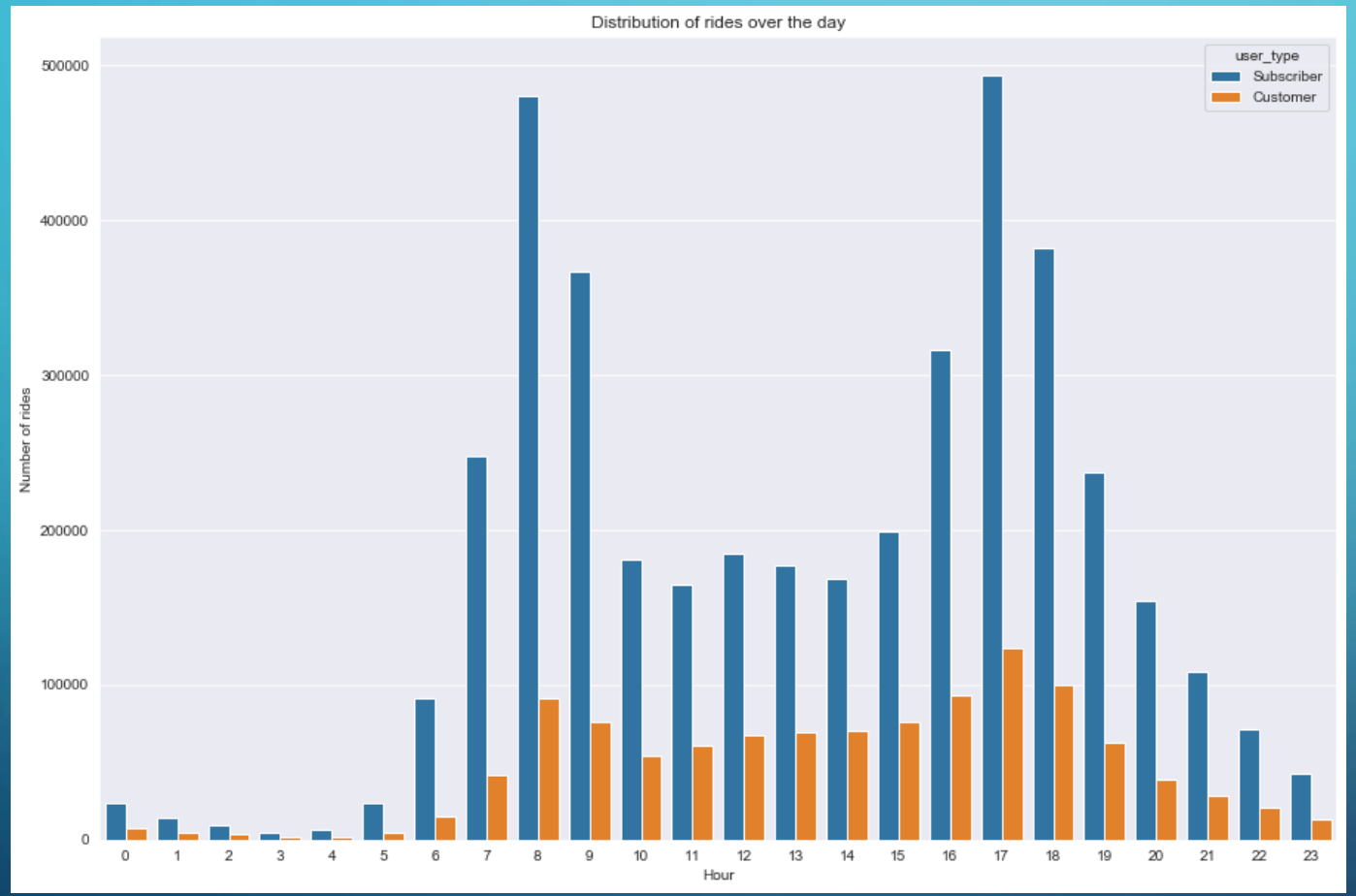
- The graph shows that for both years 2018 and 2019, there seems to be a different usage of the bike ride service during summer and winter time.
- Difference between 2018 and 2019, there was more travels during Spring and Autumn in the year 2019, the peak in 2018 was from May to October without a valley during summer.
- 2018 has the major peak of use in July and October.
- 2019 has the major peak of use in March, April, July and October.

SUBSCRIBER MOSTLY USE THE SERVICE ON WORKDAYS AND THE USAGE IS ALWAYS OVER THE CUSTOMERS USAGE



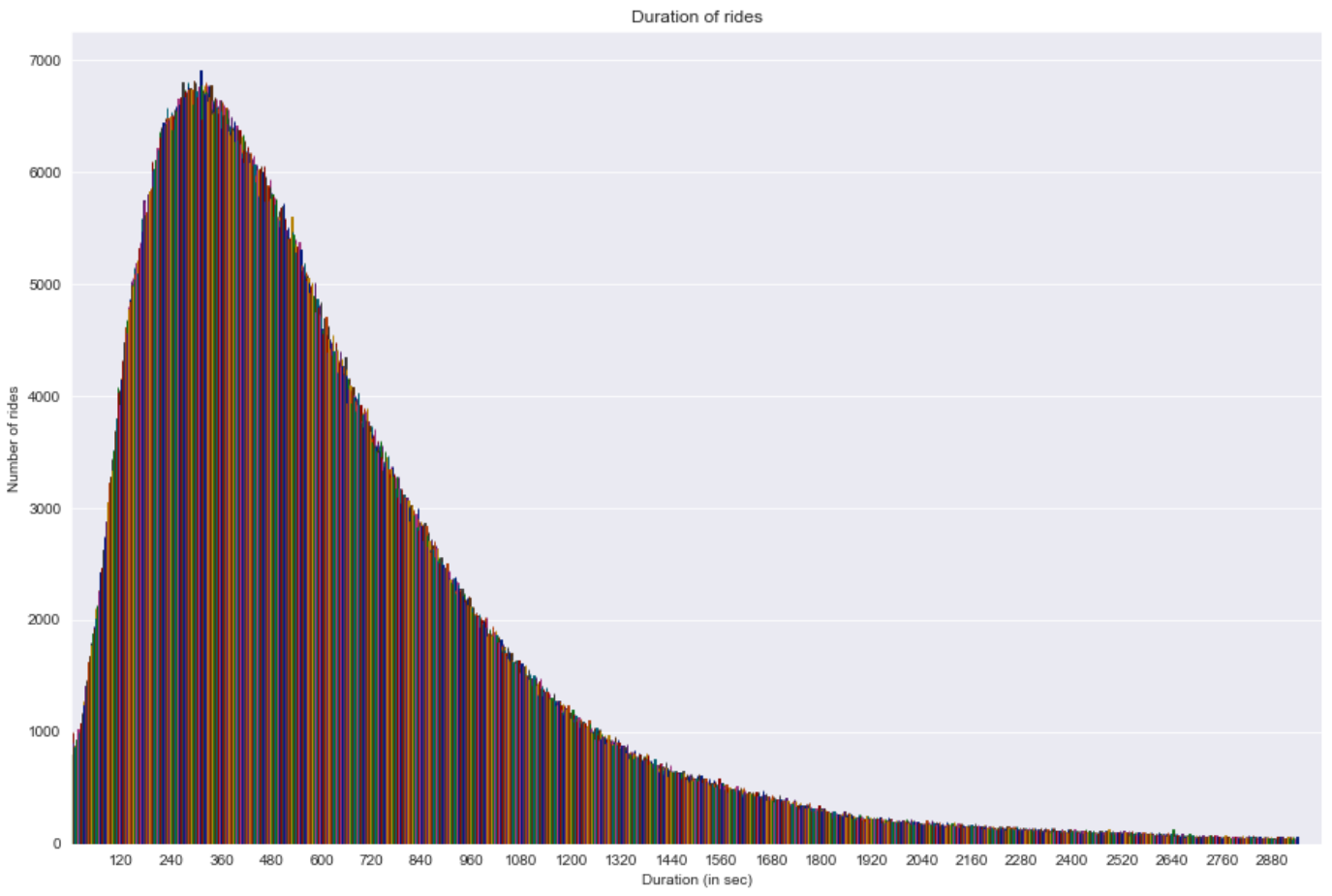
- As output from this graph it seems that the ForGoBike/ BayWheels service is mostly used by subscribers during workdays (Mo-Fr) rather than on the weekend (Sat and Sun).
- Customers use the service more on a regular base during weekday and weekend.

THE PEAK OF THE DAY IS FOR SUBSCRIBERS AND CUSTOMERS AROUND 8 A.M. AND 5 P.M.



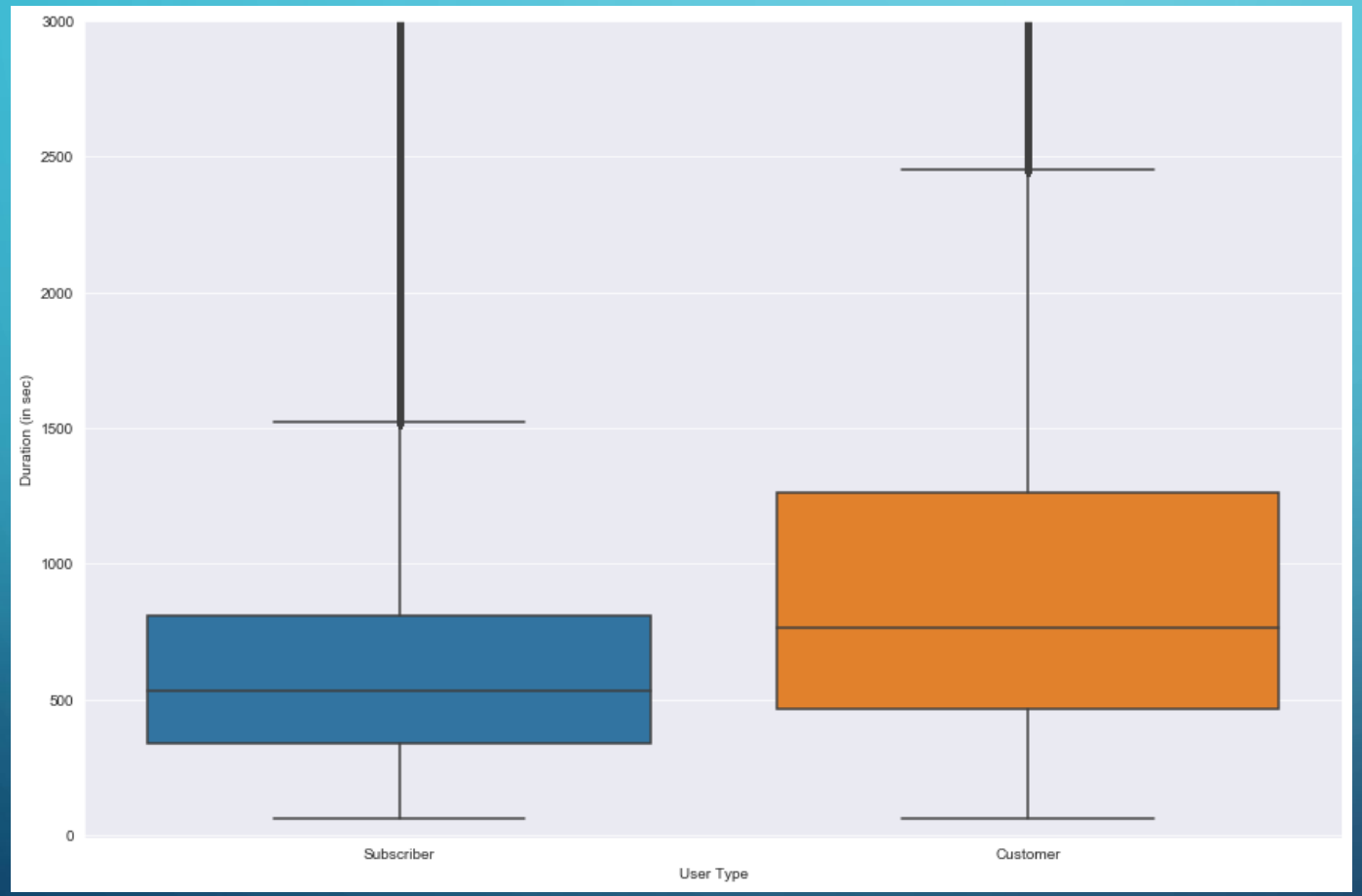
- The service is mostly used by subscribers for their way to work and by students going from home to university and back.
- And maybe customers are more often tourists and visitors of the San Francisco area.

MOST RIDES HAVE A DURATION BETWEEN 2 MINUTES AND 12 MINUTES



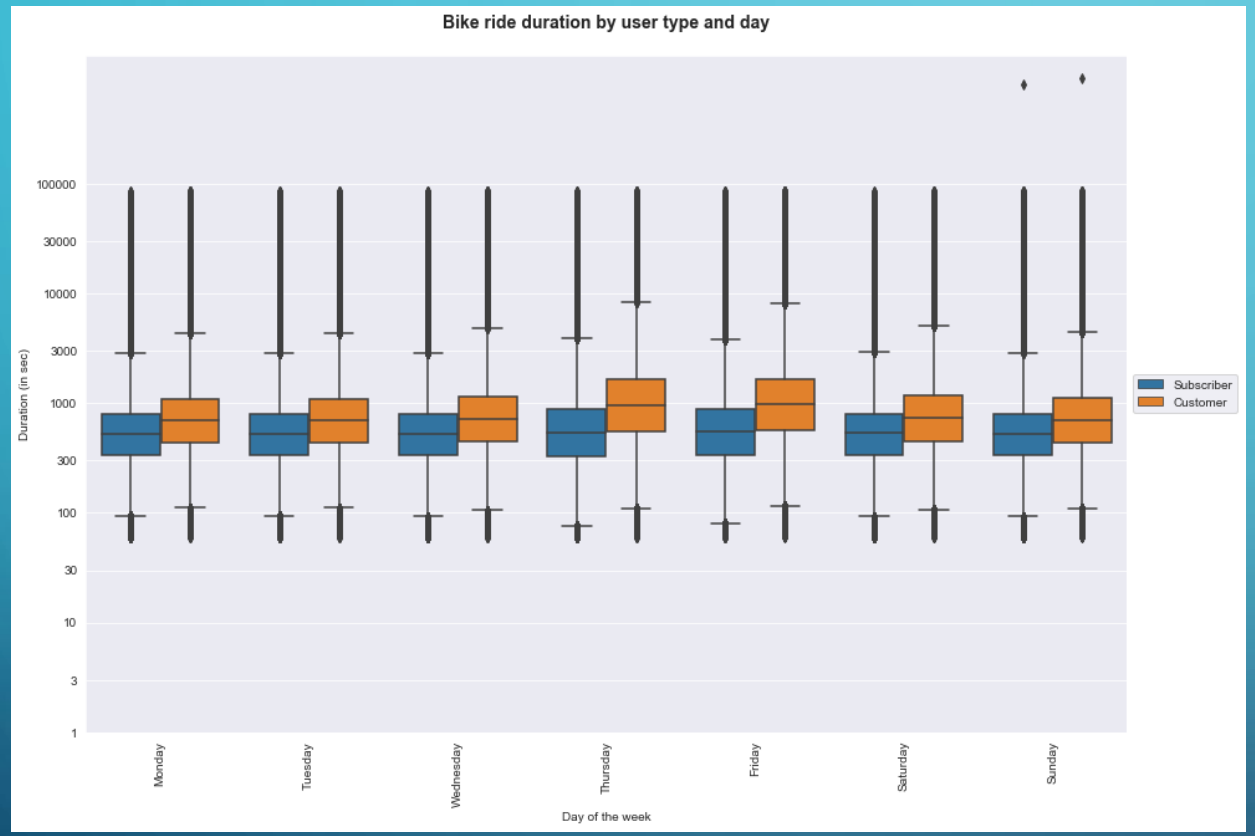
- The graph shows, that most travels are between 2 minutes (120 sec) and 12 minutes (720 sec).
- So the users are doing more short travels or commutes, rather than long rides with this bike ride service.
- The graph is limited to a duration of 3000 sec.

A DEEP DIVE REGARDING THE DURATION SHOWS THE DIFFERENCE BETWEEN SUBSCRIBERS AND CUSTOMERS



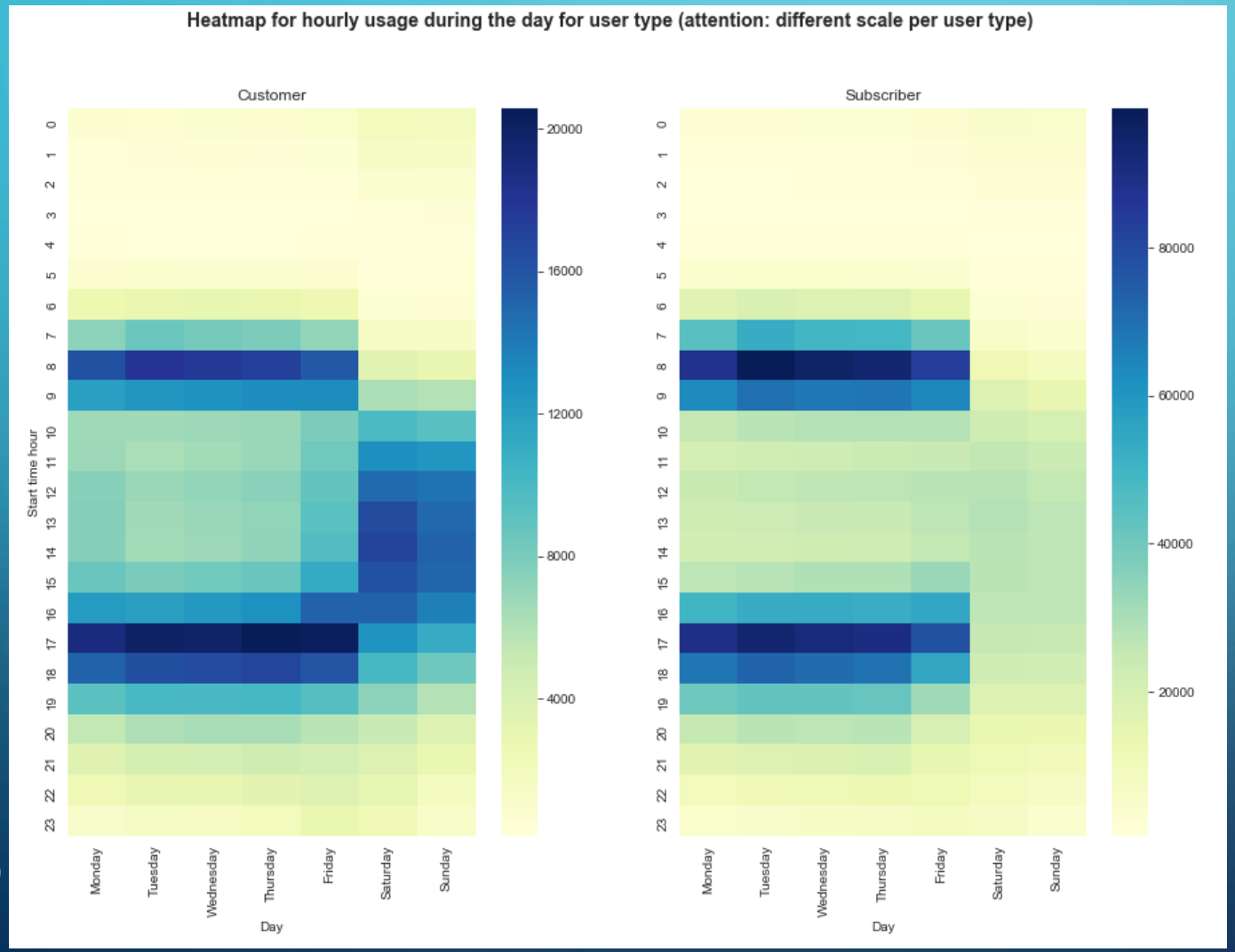
- Boxplot comparing the subscribers and customers in regards to the duration of the rides.

SECOND DEEP DIVE REGARDING DURATION SHOWS THE DIFFERENCE OVER THE WEEK PER DAY AND USER TYPE



- The duration of the rides for the user type subscriber is constant over the different days per week.
- Customers love to make longer rides on Thursdays and Fridays.
- Also there are only a few outliers for the user type subscriber, but more outliers for the customer user type.

THE HEAT MAP SHOWS THE START TIME OF THE RIDE PER HOUR AND DAY OF THE WEEK FOR THE TWO USER TYPES



- The heat map perfectly summarizes in one graph the different usage trends for customers and subscribers.
- From a business development perspective, we have to ask ourselves what we can do with the bikes in the timeframe from 10 a.m. up to 3 p.m. and in the timeslot 7 p.m. up to 6 a.m. to gain more profit and growth?

APPENDIX

THE OVERVIEW SHOWS THE LIST OF GATHERED RAW DATA AS BASE FOR THIS PROJECT

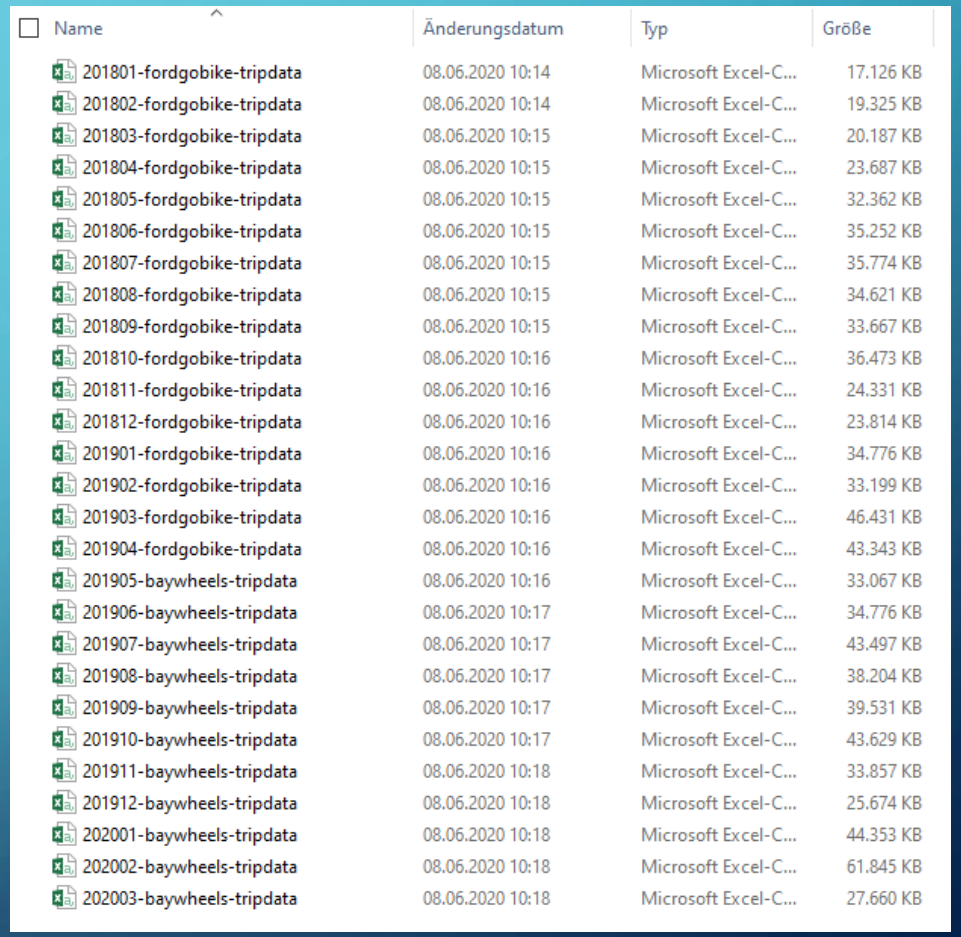
```
#List of file urls to be downloaded for years 2018, 2019 and until 03/2020 as raw data for the analysis // Status 04. June 2(

download_urls = ["https://s3.amazonaws.com/baywheels-data/201801-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201802-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201803-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201804-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201805-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201806-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201807-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201808-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201809-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201810-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201811-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201812-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201901-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201902-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201903-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201904-fordgobike-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201905-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201906-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201907-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201908-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201909-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201910-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201911-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/201912-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/202001-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/202002-baywheels-tripdata.csv.zip",
                 "https://s3.amazonaws.com/baywheels-data/202003-baywheels-tripdata.csv.zip",
                 ]
```

```
#Download and unzip and store the raw data from the source
for url in download_urls:
    downloaded_response = requests.get(url)
    path_file = dest_folder + url
    zipped_file = ZipFile(BytesIO(downloaded_response.content))
    zipped_file.extractall(dest_folder)
    zipped_file.close()

# 0.91GB of data in csv format was downloaded
```

```
#List of file names for loop to combine data in df
files_raw_data = []
files_raw_data = listdir(dest_folder)
```



Name	Änderungsdatum	Typ	Größe
201801-fordgobike-tripdata	08.06.2020 10:14	Microsoft Excel-C...	17.126 KB
201802-fordgobike-tripdata	08.06.2020 10:14	Microsoft Excel-C...	19.325 KB
201803-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	20.187 KB
201804-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	23.687 KB
201805-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	32.362 KB
201806-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	35.252 KB
201807-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	35.774 KB
201808-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	34.621 KB
201809-fordgobike-tripdata	08.06.2020 10:15	Microsoft Excel-C...	33.667 KB
201810-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	36.473 KB
201811-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	24.331 KB
201812-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	23.814 KB
201901-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	34.776 KB
201902-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	33.199 KB
201903-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	46.431 KB
201904-fordgobike-tripdata	08.06.2020 10:16	Microsoft Excel-C...	43.343 KB
201905-baywheels-tripdata	08.06.2020 10:16	Microsoft Excel-C...	33.067 KB
201906-baywheels-tripdata	08.06.2020 10:17	Microsoft Excel-C...	34.776 KB
201907-baywheels-tripdata	08.06.2020 10:17	Microsoft Excel-C...	43.497 KB
201908-baywheels-tripdata	08.06.2020 10:17	Microsoft Excel-C...	38.204 KB
201909-baywheels-tripdata	08.06.2020 10:17	Microsoft Excel-C...	39.531 KB
201910-baywheels-tripdata	08.06.2020 10:17	Microsoft Excel-C...	43.629 KB
201911-baywheels-tripdata	08.06.2020 10:18	Microsoft Excel-C...	33.857 KB
201912-baywheels-tripdata	08.06.2020 10:18	Microsoft Excel-C...	25.674 KB
202001-baywheels-tripdata	08.06.2020 10:18	Microsoft Excel-C...	44.353 KB
202002-baywheels-tripdata	08.06.2020 10:18	Microsoft Excel-C...	61.845 KB
202003-baywheels-tripdata	08.06.2020 10:18	Microsoft Excel-C...	27.660 KB