1. **BUSINESS UNDERSTANDING**

**Business Overview**

Autolib' is an electric car service which was started in Paris, France, in December 2011

operated by the [Bolloré](https://en.wikipedia.org/wiki/Bollor%C3%A9) industrial group. Although this is not the first sharing of the kind the idea came from bike sharing i.e motorcycle and bicycles that started in 2007 , Autolib maintained a fleet of all electric cars for public use on a paid subscription basis. The cars can only be leased to people above 18years with a valid driver's license from that country or an international driving license.

It has then opened doors to other cities like Lyon , Bordeaux, London and Indianapolis in 2015, Turin in 2016 and Singapore in 2017.

Customers can choose from two rental packages depending on the rental plan which varies from €6 to €9 on the first 30minutes.Available cars are collected for use from any rental station and returned to any other rental station.All cars are equipped with tracking GPS systems and hence can be tracked by the system's operations center.

The company also offers services like:-

### **Private EV charging service -** Autolib offers charging services to electric car and motorcycle private owners at fee.

* **Car parking services -** Autolib also offers charging services to private electric car/motorcycle owners in the city with 5,935 charging points

### **Bluecar leasing and sales program -** Bolloré began leasing the Bluecar to individual and corporate customers where the charges cover the insurance, parking fee and charging at Autolib' stations.

### **Corporate carsharing -** These service provides employees of another company with cars from Autolib

**Business Objective**

Identify the most popular hour of the day for picking up a shared electric car (Bluecar) in the city of Paris over the month of April 2018.

**Business Success Criteria**

To compile the most used station , the hour most clients use the station in order to help the company improve their services to clients

**Assessing the situation**

Resource inventory

Datasets:

1. Autolib\_dataset (2).csv

Software:

GitHub, Google Collaboratory, SQLite.

Assumptions:

The data provided was correct and up to date

Constraints:

There are no constraints

**Data Mining Goal**

Our data mining goals are as follows:

* To determine the most popular hour for returning cars
* To determine which station is the most popular?

1. Overall
2. At the most popular picking hour

* To determine which postal code is the most popular for picking up Blue cars
* To determine whether the most popular station belong to that postal code

1. Overall
2. At the most popular picking hour

* To determine whether results will change if you consider Utilib and Utilib 1.4 instead of Blue cars

**Data mining success Criteria**

Our success criteria will be measured by targeting the most used station and time of the day it is mostly used.

**2. DATA UNDERSTANDING**

**Data understanding overview**

Below is the dataset provided to be used in this project:

1. Autolib\_dataset (2).csv - this dataset has`address, Cars , Bluecar counter ,Utilib counter ,Utilib 1.4 counter , Charge Slots , Charging Status ,City, Displayed comment ,ID, Kind, Geo point, Postal code, Public name, Rental status, Scheduled at, Slots, Station type, Status, Subscription status, year, month, day, hour, minute.

**Data description**

We have one dataset provided for this project a detailed description is provided as follows:

Autolib\_dataset (2).csv - this dataset has`columns such as

address in the city,

Cars that bluecars

Bluecar counter ,Utilib counter ,Utilib 1.4 counter , Charge Slots , Charging Status ,City, Displayed comment ,ID, Kind, Geo point, Postal code, Public name, Rental status, Scheduled at, Slots, Station type, Status, Subscription status, year, month, day, hour, minute.

* Details provided are precise and down to the minute.

**Verifying Data Quality**

The datasets had missing values; some columns were not needed in the computation.

**3.DATA PREPARATION**

These are the steps followed in preparing the data:

1. **Loading Data**

Loaded data from CSV then created a SQLite database from them.

1. **Cleaning Data**
2. **Merging the dataset**
3. **Deriving new attributes**

**4)ANALYSIS**

During our analysis we were able to single out the following three cities as once with most used during the three days

.What is the most popular hour for returning cars is 2

Most popular postal code is 75008

.Do the results change if you consider Utilib and Utilib 1.4 instead of Blue cars? - no

Most popular stations are Courbevoie/Paix/2 and Saint-Ouen/Louis Blanc/35

Most popular picking hour is Paris/Friedland/42  **1**

The above analysis was done using SQLite. The full analysis can be found in the following:

Notebook [https://drive.google.com/open?id=1tGbmRI4PHrLZWXFnmKQLLXZDnTvLz4uc]

GITHUB

[https://github.com/kahiga2244/week-4-ip.git]

**RECOMMENDATION**

From the project we worked on we concluded that the various things should be improved:

* All the cost to be included in the rate.
* Cars should be new or well maintained.
* Increase the size of bluestations
* Increase the number of charging slots
* Increase the size parking
* Minimize the time taken when repairing the cars
* To make subscription status more operation