SHARED MOBILITY SYSTEMS USAGE

1 OBJECTIVE

The main goal of this project is to develop a software tool for creating logs of availability information provided online by some urban mobility facilities, like Velib, and perform analysis on obtained data in Matlab to gather usage statistics. Facilities (data) that are of interest in this project include:

- Public bicycle sharing schemes (available bikes / empty bike stands)
- Parking lots (available parking spots)
- Electric vehicle charging stations (available charging slots)
- Traffic information (road utilization and road capacity)

The usage statistics shall be then used to suggest new customers the best urban mobility station (Velib station, parking lot, etc.) to use depending on current user location, time of day, day of week, etc.

An on-line data sources, which provide the data through a REST API (or similar) should be used to obtain current information on availability of urban mobility facilities (see e.g. http://developer.jcdecaux.com for Velib). The program should periodically poll specified on-line data sources for new information and store this information along with timestamp into a database or directly into a file readable by Matlab (like .CSV). Even in case a database is used for storing historical data, tool shall be able to export logged data into Matlab.

2 REQUIREMENTS

Proposed tool shall fulfill following requirements:

- Modularity, to achieve easy addition of new on-line sources
- Uninterrupted operation (i.e. program shall properly handle errors)
- Program shall be able to export logged data into Matlab (through e.g. .CSV files)

3 BLOCK DIAGRAM
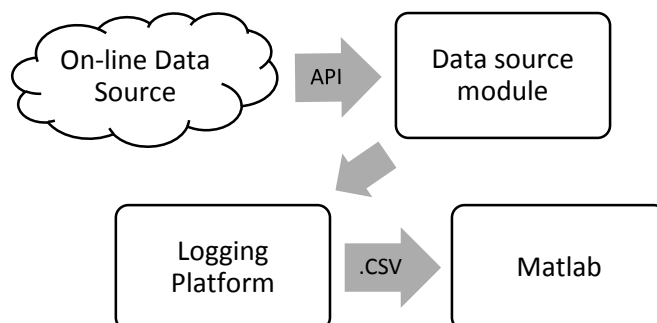
4 TASKS

1. Research on-line data source providing current information on urban mobility facilities (see e.g. http://developer.jcdecaux.com for Velib)
2. Choose programming language (C/C++/C#/Java/Python) for developing the tool
3. Develop the logging program
4. Process obtained data in Matlab
5. Use processed data for user suggestions

5 CONTACT INFORMATION

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