EISTI Ecole Internationale des Sciences du Traitement de l'Information	VELIB'S FOR ALL: JEE Project - ADEO2
Besma Zeddini	*Deadline* : 15 janvier 2019
Groups of 2 to 4 students	*Nomber of page*: **2**

1. Specifications

The goal of the project is to build a management application FOR THE Vélib® system[1], using geolocation technologies (Google Maps API (https://developers.google.com/maps/) and JEE framework (hibernate). The presented application allows to visualize the availability of bicycles and the available parking spots to users.

This application will retrieve a number of online information provided by existing web services:

> ➢ The list of Vélib stations and their locations.
> ➢ The real-time situation of each station (availability).

The user, after being geolocated with the Vélib application, visualizes the nearest stations, the availability of bicycles and the return terminals. Via this application, the user will have access to the routing and itinerary proposals in the *Ile de France* region, displayed on a map that can be viewed during his trip. The customization features allow him to calculate his route as well as its CO_2 emission rate, burned calories, etc. He can also subscribe online and have practical information through web services.

Application features :

- Geolocation of all stations
- Route tracing
- One-click access to bicycles and to the return terminals available in each station
- The management of favorites
- Online subscription
- Calculation of the cost of the itinerary, the saved CO_2 and the spent calories
- Share on social networks

Note: Regarding the details of the subscription types, the calculation of the burned calories or the CO_2 emission, you should research the estimation methods, etc.

Features requested by the user

- ✓ The user can refine the search for stations by:
  - ◦ *Arrondissement*
  - ◦ Department
- ✓ When selecting a station, the user can view the following information:
  - ◦ Full address of the station

---

[1] www.velib.paris

- Date and time of information update
- The number of available bicycles
- The total number of spots
- The number of available free spots
- If the station is open or closed
- If the station accepts bank cards or not

You must feed your database with "real" uploaded Velib data. We can distinguish two types of data: Static data such as GPS positions, the presence of a payment terminal, etc.; Dynamic data that indicates the status of a station, the number of available bicycles, the number of free spots, etc.

You should implement data persistence with the Hibernate framework, Google Maps API, and REST web services. The REST web service must be developed by encapsulating the google maps API. Your code must be quality, structured, well documented, tested. You can choose the DBMS of your choice (Oracle, MySQL, ...).

You should achieve the maximum of full functionality according to your abilities. You must place yourself in a virtual context of competition; the best team wins.

Any code reused and not written by you must be mentioned by commented blocks indicating the sources and crediting the authors.

1. Work to be done

For your rendering, you should provide a War archive containing:

- ✓ the entire website;
- ✓ the source code of your Java classes and JSP pages;
- ✓ documentation and tests;
- ✓ full deployment and usage information (SQL script to create tables, DB logins, user accounts, README file, etc.)

In addition, you will write a report that explains the design of your website, as well as a justification on the use of different frameworks/tools. You will pay particular attention to compliance with the programming and usage standards of the JEE.