Université Gustave Eiffel
Année universitaire 2020-2021
Cours : Services Web

Web Services Project

Instructions:

- **The projects are due by Sunday, November 29, 2020**
- **Demonstrations will take place, by group of 3, on Wednesday, December 17, 2020**
- **The demonstration will be on a laptop computer that you will bring with you (or remotely, depending on the pandemic situation)**
- Each demonstration will last approximately 10 minutes.
- *To be sent (program + report) by email to mahdi.zargayouna@univ-eiffel.fr.*
- Please use a cloud for sending (Google Drive, Dropbox, Github, etc.), in order not to saturate the mailbox.

The company *Eiffel Corp.* has just acquired the company *IfsCars*, specialized in car rental. It wishes to make its employees benefit from this service at a preferential price. You will be in charge of the design and implementation of a distributed Java application to manage this service, based on **Java RMI**. *IfsCars* vehicles can be rented by all *Eiffel Corp.* employees. They can add notes on the vehicles and their condition when they are returned. The application managing the vehicle database and the application managing the employees run in two different JVMs.

When a person requests a rental vehicle, and the vehicle is already on loan to another person, the person will be placed on a waiting list and as soon as the requested vehicle becomes available, the person will be notified and will rent the vehicle. If there are several people waiting, the "first come, first served" principle is applied.

Secondly, *Eiffel Corp.* wants to enhance its vehicle base, enriched by its employees' notes, and make it accessible to the outside world via a **Web service** called *IfsCarsService*. It offers for sale vehicles that have been rented at least once. The web service allows users to consult vehicle prices, check their availability, add them to a basket and purchase them. To make a purchase on the web service, another web service *Bank* is contacted by *IfsCarsService* to check the availability of funds for the purchase and to make the payment. Vehicle prices are in Euros, but the university allows sales in all world currencies, and must provide prices in the currency requested by the buyer. The exchange rates used must be found in real time.[1].

Work to be done:

1. Implement the applications and web services you deem necessary.
2. Plan a basic scenario, with a certain number of vehicles, employees and customers to be able to run the applications with minimal user intervention.
3. The implementation of a graphical user interface for employees to rent and return vehicles for demonstration purposes is a plus.
4. The implementation for demonstration purposes of a graphical interface for the customer of IfsCarsService, allowing him to constitute a basket, to validate it and to pay and also a plus.

Deliverable:

1. Project source codes (in an archive, named after the students' names)
2. A report explaining the design choices, the difficulties encountered and a user manual for the application. Particular attention will be paid to the quality of the report.

Any enrichment of the project, not requested in this statement, will be rewarded with additional points.

[1] For example, by using this service http://fx.currencysystem.com/webservices/CurrencyServer5.asmx?wsdl