Université Gustave Eiffel
Academic year: 2021-2022
Course: Web Services

Université Gustave Eiffel

Web Services Project

Instructions:

- **Projects are performed by groups of 2 or 3 students**
- **Projects are due on Friday, December 3, 2021**
- **Demonstrations will be held, by group, on Thursday, December 9, 2021**
- **The demonstration will be on a laptop that you will bring with you (or remotely, depending on the health 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* to send the files (Google Drive, Dropbox, Github, etc.), so as not to saturate the e-mail box.

Eiffel Corp. has just acquired *IfShare, a* company specialized in the sale of products (books, clothes, equipment, etc.) from individuals to individuals. It wishes to make its employees benefit from this service. You will be in charge of the design and implementation of a distributed Java application to manage this service, **based on Java RMI**. Products sold on *IfShare* can be bought and sold by all *Eiffel Corp.* employees. Employees can add notes about the products and their status upon resale. The application managing the product database and the one managing the employees run in two different JVMs.

When a person requests to purchase a type of product and it is not available, he or she is placed on a waiting list; as soon as the requested product becomes available, the person is notified and purchases the product. If there are several people on the waiting list, the "first come, first served" principle is applied.

In a second step, *Eiffel Corp.* wants to open its products to the outside world, enriched by the notes and comments of its employees, and make it accessible to the outside world via a **Web service** called *IfService*. It offers for sale products that have been sold at least once within *Eiffel Corp*. The web service allows users to view product prices, check availability, add products to a shopping cart and purchase them. To make a purchase on the web service, another web service Bank is contacted by *IfService* to check the availability of funds for the purchase and make the payment. The prices of the products are in Euros, but the university allows sales in any currency of the world, 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:

2. Implement the applications and web services you believe necessary.
3. Provide a basic scenario, with a number of products, employees and customers to run the applications with minimal user intervention.
4. The implementation of a graphical interface for employees to buy and sell products is a plus.
5. The implementation of a graphical interface for the *IfService* customer, allowing him to build a cart, validate it and pay, and also a plus.

Deliverables:

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

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

[1] If you don't find a working Web Service, create your own (static) currency converter Web service