



THE INTERNATIONAL INSTITUTE OF

SUPINFO

INFORMATION TECHNOLOGY

Java Enterprise Edition

Academic Year – 2012 - 2013

Sales Analytics (bis)

Graded Exercise



Context

SupMarket is a 20-years old company selling IT products. They have agencies all around the world.

In order to determine the company's sales and predict future sales, the company needs you to develop a new Sales Analytics Tool. It must expose sales data from some Country through Web Services and display some analytics information about sales.

Because it needs to be powerful and scalable you naturally chose to use Java Enterprise Edition Technologies.

Specifications

The first version of the application must provide the following features:

- Authenticate a user
- Display for each agency and for the union of the three the following information:
 - The total number of sales made
 - The total amount sold
 - The best selling products
 - The less sold products
 - The breakdown by channel (direct sales, Internet...)
 - The breakdown by agency
 - And some other information...
- Expose sales data
 - From France with a SOAP Web Service
 - From Canada with a REST Web Service
 - From Japan as CSV

An extract of sales data is available on <http://courses.supinfo.com> as a SQL file.

You have to use Servlet / JSP implementing JSP Model 2 Architecture and EJB 3.1 with JPA 2.

The project will be deployed on a Glassfish AS v3.1.



1. Data Structure and JPA mapping

You don't need to create your own schema. Just use the SQL dump to create your tables and map your JPA entities to them.

2. Authenticate and logout a user

The users need to authenticate them in order to access company information. So the home page must provide a login form with email and password fields.

In the first version, there is no way to register a user, so you'll add them directly in database.

Be careful, because **SupMarket** cares a lot about security, the database must contain **hashed passwords** only!

3. Dashboard

Once authenticated, a user must be redirected to a dashboard page with the following information about all the company sales:

- The total number of sales made
- The total amount earn
- The best selling products (represented by a pie and a table)
- The less sold products (represented only in a table)
- The breakdown by channel (represented by a pie)
- The breakdown by country (represented by a pie and a table)
- About the customers:
 - The breakdown by Gender (represented by a pie)
 - The breakdown by Marital Status (represented by a pie)
 - The breakdown by Income Level (represented by a pie and a table)
 - The most loyal customers (represented in a table)

To allow more specific analyzes, you must also provide a filter to display that information by Country, by Gender, by Marital Status and by Income Level. More than one filter at a time can be used.

Of course, to avoid performance problems on the client-side, the filtering must be done on the server-side.



4. Expose sales data

You must provide APIs to expose sales data by country. For this first version, you just need to expose French, Canadian and Japanese data.

For now, all the agencies doesn't work with a common IT system. So, you must provide for each country a different way to export data about their 100 last sales:

- The French sales:
 - You must expose them by a SOAP Web Service that follow the following WSDL:
 - <http://supseller-paris.servme.fr/app/SalesExportService?wsdl>
- The Canadian sales:
 - You must expose them by a Web API with JSON representation. An example of JSON schema you have to use is available here:
 - <http://supsellermontreal.supinfo.cloudbees.net/sales/export.json>
- The Japanese sales:
 - You must expose them as a simple CSV file. It must look like the following:
 - <http://supsellertokyo.supinfo.cloudbees.net/sales/export.csv>



Instructions

- This exercise is individual. Teamwork is forbidden.
- Plagiarism is forbidden.
- Make accessible his code on a public sharing platform (as GitHub) before the end of the evaluation is forbidden.

Don't abiding by these rules will result in suspension of your assessment and will be considered cheating.

Notation

Functionalities	Points
JPA Mapping	3
Authentication	4
French SOAP Web Service	5
Canadian Web API	5
Japanese CSV file	5
Global Dashboard	10
Multi-Filtering	5
Code Quality & Conventions	2
TOTAL	40

Return

Return your graded exercise as a ZIP archive named as follows:

4JVA_SalesAnalyticsBis_Campus_IdBooster.zip.

For example: 4JVA_SalesAnalyticsBis_Lille_10000.zip

Not following this convention will result in point loss.

You will send the archive to your STA SUPINFO email address only and before the 23th March 2013 at 11:59 PM. After that delay, your project will not be corrected and the mark 0 will be assigned to you.

