

## ASSIGNMENT A2

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### 1. Objective

The objective of this assignment is to allow students to become familiar with architectural patterns and the Factory Method design pattern.

### 2. Application Description

Use Swing/C# API to design and implement an application for the front desk employees of a bank. The application should have two types of users (a regular user represented by the front desk employee and an administrator user) which have to provide a username and a password in order to use the application.

The regular user can perform the following operations:

- Add/update/view client information (name, identity card number, personal numerical code, address, etc.).
- Create/update/delete/view client account (account information: identification number, type, amount of money, date of creation).
- Transfer money between accounts.
- Process utilities bills.

The administrator user can perform the following operations:

- CRUD on employees' information.
- Generate reports for a particular period containing the activities performed by an employee. The reports should be saved into a *txt* or *xml* file.

### 3. Application Constraints

The information about users, books and selling will be stored in multiple XML files. Use the Layers architectural pattern to organize your application. Use the Factory Method design pattern for generating the reports.

### 4. Requirements

- Create the analysis and design document (see the template).
- Implement and test the application.

## 5. Deliverables

- Analysis and design document.
- Implementation source files.

## 6. References

<http://java.sun.com/docs/books/tutorial/uiswing/>  
<http://java.sun.com/j2se/1.4.2/docs/api/javax/swing/package-summary.html>  
<http://www.exampledepot.com/egs/>  
<http://java.sun.com/docs/books/tutorial/jdbc/basics/index.html>  
<http://www.saxproject.org/sax1-roadmap.html>  
<http://www.roseindia.net/xml/dom/>  
[http://msdn.microsoft.com/en-us/library/54xbah2z\(VS.80\).aspx](http://msdn.microsoft.com/en-us/library/54xbah2z(VS.80).aspx)  
[http://msdn.microsoft.com/en-us/library/e80y5yhx\(VS.80\).aspx](http://msdn.microsoft.com/en-us/library/e80y5yhx(VS.80).aspx)  
<http://msdn.microsoft.com/en-us/library/system.xml.xmlreader.aspx>  
<http://msdn.microsoft.com/en-us/library/system.xml.xmlwriter.aspx>  
[http://msdn.microsoft.com/en-us/library/ms764730\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/ms764730(VS.85).aspx)