**UTCN**

**Computer Science Department**

**Software Design 2012/2013**

**ASSIGNMENT A1**

**====================================================================**

1. **Objective**

The objective of this assignment is to allow students to become familiar with architectural patterns.

1. **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.

1. **Application Constraints**

**Layers architectural pattern**

Domain logic pattern **domain model**

Data source pure pattern **table data gateway**

The data will be stored in a **database**. Use the **Layers architectural pattern** to organize your application. Use a domain logic pattern (transaction script or **domain model**) / a data source hybrid pattern (table module, active record) and a data source pure pattern (**table data gateway**, row data gateway, data mapper) most suitable for the application.

1. **Requirements**

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

1. **Deliverables**

* Analysis and design document.
* Implementation source files.

1. **References**

Martin Fowler et. al, Patterns of Enterprise Application Architecture, Addison Wesley, 2003

<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://msdn.microsoft.com/en-us/library/54xbah2z(VS.80).aspx>

<http://msdn.microsoft.com/en-us/library/e80y5yhx(VS.80).aspx>