**UTCN**

**Computer Science Department**

**Software Design 2021**

**ASSIGNMENT A1**

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1. **Objective**

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

1. **Application Description**

Use JAVA/C# API to design and implement a food delivery application. The application should have two types of users (a regular user represented by the customer and an administrator user) which have to provide a username and a password in order to use the application.

The customer can perform the following operations:

* Add/update/view own information (name, identity card number, personal numerical code, address, etc.).
* Create/update/delete/view shopping cart (items, amount of money, date and hour, delivery address etc.).
* Choose payment type.
* Visualization of historical data.

The administrator user can perform the following operations:

* CRUD on customers’ information.
* CRUD on menu
* Generate reports for a particular period containing the activities performed by a customer and set the customer as loyal (5% discount).

1. **Application Constraints**

* 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
* All the inputs of the application will be validated against invalid data before submitting the data and saving it in the database.

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.
* SQL script for creating and populating the database with initial values.

1. **References**

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

<http://docs.oracle.com/javase/tutorial/uiswing/>

<http://docs.oracle.com/javase/tutorial/jdbc/basics/index.html>

<https://msdn.microsoft.com/en-us/library/54xbah2z(v=vs.110).aspx>

<https://msdn.microsoft.com/en-us/library/e80y5yhx(v=vs.110).aspx>