

Web Application Development

Final Project

Due Date: 18th Dec 2013

1. Aim:

DigitalX is a leading shop for **music**, **movie** and **video games** in Auckland. It has been running for more than 10 years and has a large number of customers.

The current website of DigitalX was developed by php years ago. It only supports static html web pages and used to display the basic information of DigitalX and latest news.

Because of the continuous growth of DigitalX, the boss has decided to have the website upgraded for **online shopping**. In order to sharpen it as an important sales channel, you need to build a website by using *.Net Framework* and related technologies (*ASP.Net, WCF, SQL Server*) for DigitalX.

The new website should provide online-shopping functionalities for all registered customers. All data related to the business operation should be saved to the database safely.

2. Existing Database

A database file is provided for your website. You are NOT allowed to change the structure of the database (Number of tables, Table definition ...) unless approved by tutor. Extra programming objects (SPs, Views, Functions) are always permitted.

You DO NOT need to apply all tables from the existing database. Please examine all objects of the database before you start the project.

3. New Website

Plan and requirements:

This new website should be developed by .Net Framework using Visual Studio and SQL Server.

You need to use one of the following options as the main technology of this project:

1. HTML5/ASP.NET + WCF

2. **MVC + WCF**

Each student should have its own copy of the database file.

You can add extra programming objects to database without changing the current structure. Do not delete existing data in the database. - **Views for visual layout**

Design:

This is an important topic in this project. There is **no restriction of designing the UI of all web pages**. You can **use any technologies by you own ideas** (should consider that this is a website for attracting more customers).

This web application shall include **pages** for **showing information of all products**. A **shopping cart system** shall be developed to support online shopping.

WCF application is required for data access. **All CRUD operations** must be done by WCF. Your web application shall not connect to database directly.

4. Tasks

Please complete the project with following requirements. (You can always add extra information according to your design):

4.1 Programming Technologies

You must (not limited to) apply the following techniques to your project:

General: **STEPS**

1. Entity data model / LinqToSql
2. **Transaction - APPEARED COMPLETED**
3. Authentication/Authorization
4. Security control
5. HTML5, CSS3, jQuery

For WCF: - **CANNOT BE USED**

- FaultContract - **DataContract**
- Transaction
- Streaming (Reliable message) Messaging Pattern / Duplex Messaging Patterns

4.2 Main page

The web application shall contain a main page. This page shall at least show the following information:

- 5 most popular products

- o Determine by total number of purchased quantity - **REQUIRES WCF**
- o Product name, price and photo must be displayed - **COMPLETED**
- Links or menus for viewing more products
- Login status of the current user
- A link to a page showing order status for member
 - o You need to show "OrderID", "OrderDate", "Complete", "IsBackOrder" and total amount. Please refer to database.

4.3 Membership

You need to implement a membership system for users. "Login" is required before placing an order.

- **Username:** Start with a letter; Min length 3 characters; Max length 8 characters
- **Password:** Any characters from 6 – 12 in length
- Input validation is required

4.4 Shopping cart

The web application shall have a **shopping cart page** showing **all products selected by user** as a **list**. User should be able to choose **"Checkout"** or **"Return to shopping"**.

You need to ask the customer if they want to have a back order or change the quantity in case of out of stock. A back order should be created in the database if customer would like to go ahead with the order.

The "Checkout" page shows the details of an order and the shipping address of the current customer.

If the customer does not have a valid address, you should ask the customer to type in a new address. If the customer has more than one address, you should allow the customer to choose one or add a new one.

You DO NOT need to implement "Shipping Method".

You DO NOT need to implement "Payment".

You DO NOT need to save the product list in shopping cart to database. An empty cart should be created along with each login.

4.5 Product Information

You shall use a reasonable number of pages for presenting products. A "Detail" page of showing all details of a particular product is required.

4.6 Documentation

Project documentation is required to briefly introduce the plan of your application, outline special techniques used and a conclusion of your experience after the project.

Marking Schedule

Requirement	Mark	Achieved
A working application: Provides all implementation of requirements listed above. All functions work without any kind of errors.	20 40	
Design of application: User-friendly interface. Attractive design. User experience	30	
Programming style: Appropriate comments. Source files management. Concise codes. Correct use of classes, data types and statements. Documentation.	10	
Total Marks:	100	