

COMP 4409 Assignment #3

Due

Overview

You must work in groups of four for this assignment with students selecting their own team members. This group project will allow you to apply the concepts and technologies covered in class to a “real” project situation. In this project, you will design and implement a web application for a fictional on-line bicycle manufacturer named AdventureWorks. Some parts of the site will be available to the public; other parts in the site will only be available to employees or managers.

By the end of the assignment you will have a non-trivial web application that can be a tremendous portfolio piece.

You must hand in a paper with your group member names by

Groups

While the project is a group project, each member of the group is expected to seriously contribute. It is not fair to let one member spend all his/her time at an off-campus job, while other group members work on this project.

The following grading system will be established:

1. The instructor grades the final product. The grade belongs to the project not to the producers.
2. The students discuss on a regular basis among themselves exactly what contributions they each made.
3. The students privately rate each other and themselves, assigning contributions to the whole. This is an individual judgment based on their analyses of each other’s work as well as their own. Each group member **must** email me their evaluations of the other group members (including their own). The instructor may reduce/enlarge an individual’s mark based on the feedback of other group members.

In sum, every member of the team needs to take responsibility for and complete an appropriate amount of the project work. **Be sure to consult the instructor at least 1 week prior to the due date if your team is experiencing serious problems in this regard.**

Deliverables Summary

You must implement the use cases as described below in the use case section. As well, the following nonfunctional requirements **must** be met in this milestone:

- 1) The use cases must be implemented in ASP.NET. You can use either VB.NET or C# as your implementation language.
- 2) You will be using the Adventure Works OLTP SQL Server database for this assignment. This database is installed on each machine in the lab. To install this database on your own personal machine, you can download the installation file from Microsoft or use the installation file already on the Library drive. Sample connection strings will be available on the Library drive.
- 3) Your pages must **not** use the `SqlDataSource` control. Rather you must implement some type of layered architecture (either 3 layers or 4 layers). You may decide to use the layer examples from the labs. In your web forms, you can programmatically data bind or use the `ObjectDataSource` control. There should be no ADO.NET coding in your presentation layer.
- 4) You **must** use the default ASP.NET membership system along with Forms authentication for your site.
- 5) Be sure to make use of the appropriate features of ASP.NET.

Submitting

Put your assignment in a folder named after your group (i.e., GroupA, GroupB, etc). Put any resources used by your milestone into this folder. Copy folder to the submit drive

Grading

The grade for this assignment will be broken down as follows:

Usability and visual design	20%
Program design and documentation	30%
Features	50%
Failure to submit evaluations	-5%
Group evaluation modification	-40% to +10%

Database Schema

See attached schema diagram.

USE CASE NAME:	Home Page
DESCRIPTION:	Home page for the web site
	TYPICAL COURSE OF EVENTS:
1.	<p>The system displays a navigation system (see Navigation use case), as well as few "featured" products. The page should also display the following:</p> <ul style="list-style-type: none"> • Some type of easy product search. • Display information about the current wish list • Be able to log-on.

USE CASE NAME:	Navigation
DESCRIPTION:	The web site's navigation system.
	TYPICAL COURSE OF EVENTS:
1.	<p>The system must provide a way to navigate to different sections of the site. There needs to be a way to view the following use cases anywhere in the site: Home Page, View Wish List, Log-in/Log-off/Register, Search for Products, and About Us.</p> <p>The system should have a secondary navigation system that displays categories and subcategories. The users can then click on a category or subcategory and go to the Display Product Listing use case.</p>

USE CASE NAME:	Display Single Product (Everyone)
DESCRIPTION:	System displays a single product for view by any user.
1. 2.	TYPICAL COURSE OF EVENTS:
	<p data-bbox="350 543 1406 617">This use case is initiated when a user selects a single product to display (i.e., clicks a link that takes the user to this page).</p> <p data-bbox="350 665 1442 1014">The system displays information about a single product. This page will have to display the following fields from the following tables: Production.Product (ProductNumber, Name, Color, ListPrice), Production.ProductPhoto (either ThumbnailPhoto and/or LargePhoto), Production.Model (Name), Production.SubCategory (Name), Production.Category (Name), Production.Description (Description), Production.Review (ReviewName, ReviewDate, Rating, Comments), and Purchasing.Vendor (Name). NOTE: some of these tables will require that you work with intermediary tables (e.g., ProductVendor).</p> <p data-bbox="350 1058 1398 1127">Not all products can be viewed. Only those products in the Production.Product table whose FinishedGoodsFlag field is true (=1) can be viewed.</p> <p data-bbox="350 1169 1419 1239">You will have to do some research on your own to see how to turn the SQL Server BLOB field containing the photo into a displayable image.</p> <p data-bbox="350 1281 1419 1350">This page must allow the user to add the product to a session-based wish list (i.e., go to the Add To Wish List use case).</p> <p data-bbox="350 1392 1411 1541">As mentioned above, this page must display a listing of user reviews. The page must also allow authenticated users to add their own reviews (see Review Product use case). There are only a few products in the database with existing reviews; they are product ids 709, 937, and 798.</p> <p data-bbox="350 1583 1308 1694">This page will have some additional information depending on whether the authenticated user is a manager or employee; see Display Single Product (Employee) and Display Single Product (Manager).</p>

USE CASE NAME:	Review Product	
DESCRIPTION:	System allows user to rate/review a product	
TYPICAL COURSE OF EVENTS:		
	1.	This use case is initiated when an authenticated user indicates that he or she would like to review a product.
	2.	The system allows the user to specify a rating between 1 and 5, as well as a textual comment. These reviews will be displayed by the Display Single Product use case.

USE CASE NAME:	Search for Products		
DESCRIPTION:	System allows user to search for products that match a set of criteria		
TYPICAL COURSE OF EVENTS:	Actor Action	System Response	
	1.	This use case is initiated when a user selects a search link/button.	The system allows the user to specify the following search criteria: name, product number, a category name, a subcategory name, or a price range. Category name and subcategory name should be drop-down lists filled from the appropriate tables.
	2	The user fills in one or more of the search criteria.	The system goes to the Product Listing use case.

USE CASE NAME:	Product Listing	
DESCRIPTION:	System displays a listing of products.	
TYPICAL COURSE OF EVENTS:	Actor Action	System Response
	1. This use case is initiated either from a link or as a result of the Search for Products use case.	<p>The system displays a list of products, with each row of the list containing the following fields: product number, product name, model name, and list price. The system should also display the Thumbnail photo.</p> <p>This page must allow the user to view the details of any product in the listing (i.e., go to the Display Single Product use case).</p> <p>This page must allow the user to add the product to a wish list (i.e., go to the Add To Wish List use case).</p> <p>You can earn valuable marks by adding pagination and/or sorting.</p>

USE CASE NAME:	About Us	
DESCRIPTION:	Display information about this site	
TYPICAL COURSE OF EVENTS:	TYPICAL COURSE OF EVENTS:	
	1.	The system will display information about this site. Be sure to mention that this site is hypothetical and was created as a term project for COMP 4409 at Mount Royal College taught by Randy Connolly. As well, be sure to list the group member names and roughly parts of the project each member implemented.

USE CASE NAME:	Login/Logoff/Register
DESCRIPTION:	The user can register or log-in (if already registered).
1. 2.	TYPICAL COURSE OF EVENTS:
	Initiated when user selects the log-in or register link/button.
	<p>The system will allow an existing user to login by entering his/her user name and password. The system will also allow the user to register by filling in the following information: user name, email, password, and a security question and answer. Assume that any user added through the site will not be an employee or manager.</p> <p>The system should somewhere also allow an authenticated user to change his or her password, as well as to log out.</p> <p>You must create the following test accounts (using the WAT). Failure to do so will result in large loss of marks!</p> <ul style="list-style-type: none"> • User name=fred, password=abcd\$abcd1 • User name=plato, password=abcd\$abcd1, role=employee • User name=hamlet, password=abcd\$abcd1, role=manager

USE CASE NAME:	Add To Wish List
DESCRIPTION:	Way to add an item to the user's wish list.
	TYPICAL COURSE OF EVENTS:
1.	Initiated when user clicks the Add item to wish list link/button.
2.	<p>The system will add the item to the wish list and then go to the View Wish List use case. The wish list only needs to last as long as that session.</p> <p>For additional marks, however, you can (relatively easily) save the wish list. If the user has not yet logged in, the wish list items will only last as long as that session. If the user is logged on (or later logs on), then the wish list can be persisted by using the default profile system. If you do so, each time the user logs in, his/her wish list will be filled.</p>

USE CASE NAME:	View Wish List
DESCRIPTION:	Way to view and modify the contents of user's wish list.
	TYPICAL COURSE OF EVENTS:
1.	Initiated when user adds a product to the wish list, or when user clicks the view wish list link/button.
2.	<p>The system will display a listing of the contents of the wish list (with the same behaviour as the Product Listing use case). Allow the user to modify the wish list's contents (i.e., remove product). There should be a link/button (non-functional for this milestone) to proceed to the check-out.</p>

USE CASE NAME:	Display Single Product (Employee)
DESCRIPTION:	System displays a single product for view by a user with the Employee rights.
	TYPICAL COURSE OF EVENTS:
1.	This use case is initiated when a user selects a single product to display (i.e., clicks a link that takes the user to this page).
2.	<p>The system displays all the information about a single product as detailed in the Display Single Product (Everyone) case.</p> <p>The system should also display inventory information about the product. This information includes the following fields from the following tables: Production.ProductInventory (Shelf, Bin, Quantity), and Production.Location (Name).</p>

USE CASE NAME:	Display Single Product (Manager)
DESCRIPTION:	System displays a single product for view by a user with the Manager right.
	TYPICAL COURSE OF EVENTS:
1.	This use case is initiated when a user selects a single product to display (i.e., clicks a link that takes the user to this page).
2.	<p>The system displays all the information about a single product as detailed in the Display Single Product (Employee) case.</p> <p>The system should also display price and cost history information about the product. This information includes the following fields from the following tables: Production.Product (StandardCost), Production.ProductCostHistory (StartDate, EndDate, StandardCost), and Production.ProductListPriceHistory (StartDate, EndDate, ListPrice).</p>

Suggested Plan

This assignment can **not** be completed by one or two individuals working across one or two evenings. You will need to sensibly allocate tasks to different individuals and have some of these tasks completed relatively early. Here is one possible way to plan and implement this assignment.

1. Everyone should thoroughly read the assignment and examine the database and its data.
2. Plan amongst all four members how the assignment tasks are going to be divided.
3. One or more members design the layered architecture to use in the assignment.
4. Begin implementing the architecture. You might decide to let just one member who is a strong programmer implement the architecture (which will be a largish task). Alternately, you might decide to let each member of the group implement some part of it (e.g., member 1 implements half the Product objects, member 2 implement the inventory objects, etc); the part a member does might correspond to the other use cases the student is implementing.

I would recommend that you start small. Perhaps begin by implementing the logic for retrieving information from the `ProductCategory` table. Test it to make sure it works and that you can display information from this table. **I would strongly recommend that you do this as soon as possible!** Once this is done, you can branch out to the `ProductSubcategory` table, and other tables.

5. One or two members should then implement the Search and the Product Listing use cases. Once these cases are done, you should have the confidence to complete the rest of the assignment.
6. One or two members should then implement the Display Single Product (Everyone) case. This is the heart of the assignment. It will require the most interaction with your layered infrastructure. Once this step is done, the hardest part of the assignment is finished!

These other steps can be done asynchronously after step 6.

7. Design and implement the navigation system.
8. Design and implement the visual appearance of the site, along with home page and about us.
9. Implement the wish list.
10. Implement the log-in system.

Once the log-in system is done, you can:

11. Implement the Employee and Manager versions of the Display Single Product case.
12. Add the ability to review products.