

# Assignment 3A

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**Weight:** 30% of your final grade

**Due:** after completing Unit 6

## Instructions and General Requirements

- Visit <http://scis.athabasca.ca/virtual-helpdesk/dreamspark.php> to download and install the appropriate IDE for this assignment, if you don't have the right one installed. You may also download and install Microsoft's Visual Studio Community from <https://www.visualstudio.com/> on your computer.
- Plan carefully what to put on each web page and how you lay out everything you present. Pay attention also to the visual design of your web pages. [Clean, simple designs](#) should work well.
- Each web application or web page you write for each assignment project is expected to be a professional web application or web page. If you want to show course related information or links on the page, it should be placed in such a way that it will not interfere with the content, functionalities, or the overall look and feel of the web application or web page.
- Use the same external style sheet for all your pages to ensure your assignment site has a consistent look and feel.
- You must do your best to write the best web page, or develop the best web application for each and every project in the assignment. When you are asked to develop web applications, a single web page or a few inter-linked web pages may not be sufficient. You should create a web-based system. It should have a welcome page, a banner with the name or title of the application, menus and buttons for navigation, and required functional modules. You must do your best to make each of your web applications attractive, useful and user-friendly. Your web applications may not have a perfect professional look and feel, but you must show your effort to achieve that. Your time and effort in developing the best web applications for the assignment will contribute greatly to your future success as a web developer.
- For this assignment, you don't have to validate your web documents, but you must test all your web applications for the assignment on your personal web server to ensure that they work. You also must make your web server accessible for your tutor to assess your work. In most cases, you would only need to open a port on your router provided by your ISP and setup port forwarding within the router. If your ISP doesn't allow you to do port forwarding on the router, you may need to find a hosting service on the internet. To protect your privacy, do not put your student ID on an unprotected web site. When using a hosting service on the internet, you must remove all the documents related to the assignment from the server after your tutor has assessed your work.

- Please refer to Assignment 1 for files organization for the assignment and composition of main page *tma3a.htm* (15 **marks**). As for Assignment 1, the main page should include the following information as cover page of the assignment:
  - assignment number
  - course number and name
  - your name and student ID number
  - date you began working on the assignment
  - date you completed the assignment
  - estimated hours you spent on the assignment

Following the cover page will be the required documentation on your work for each part of the assignment, which should include:

- the original description and requirements of the project
- your interpretation of the assignment project and requirements
- your analysis and design of the web application
- documentation of your implementation
- a guide for users (your tutor who will mark the assignment) to set up, to run, and to use the web application
- a hyperlink to the web applications you design for the project
- anything else you want to say to your tutor

Please keep in mind that all the web applications and related files you developed for the assignment must be accessible from the *tma3a.htm* page, either directly or indirectly.

Please also keep in mind that each web application must use the same external style sheet to ensure the web application has a consistent look and feel.

Submit your assignment in a zip file named TMA3A.zip.



**Important:** All work submitted must be original, and no codes or packages from a third party should be used unless it is explicitly allowed in the assignment instructions. See [Athabasca University policy on intellectual honesty](#).

## Part 1

(10 marks)

Create a web application with ASP.NET in C# that uses a persistent cookie to track how many times a client computer has visited the page. In addition to the number of hits, the application also needs to display the IP address of the client computer and the time zone where the client computer is located.

## Part 2

(15 marks)

Develop a web application using ASP.NET in C# that runs a slideshow of a list of pictures. The requirements are as follows:

1. Information about the pictures must be stored on the server either in a database or in a text file. These details would include the name and location or URL of each picture and a description of the picture to be used as a caption, which must be stored in a plain text file or a database.
2. The caption should be shown under each picture in the show.
3. There should be a button to start/stop the show.
4. There should be a control to toggle the show between random and sequential.
5. There should be buttons to manually turn the show backward or forward, only if the show is in sequential mode.
6. You may reuse the pictures you have used for assignment 1.
7. The show should have at least 20 nice pictures.

All files for this project should be stored under directory TMA3A/part2

## Part 3

(25 Marks)

In parts 3 and 4 of this assignment, you will be developing an online computer store in which customers can select a computer from a list and customize it by replacing some components in its standard configuration with others that may be better or cheaper. Customers can then place an order with the online store.

In this part, your focus should be on the web interface design and implementation of the online store, using ASP.NET in C# as server-side language and other web technologies you have learned from Units 1–4. The requirements are as follows:

1. Visit some online stores such as Bestbuy.CA and Amazon.CA, study their designs and functionalities, and write your findings in the assignment report.
2. Based on your study above, analyze the requirements of the web application you are to develop and then work out a design of the web application, including drawings of the interface, name and functions of each modules you will need, and web pages/documents to be used.
3. The application running in a web browser should be like a real online store, with a name and logo, menus and buttons for navigation, a welcome page to greet customers, and other pages, such as contacts and a feedback form, and so on.

4. There should be a list of computers, lists of different parts or components (no less than five different components including at least RAM, hard drive, CPU, display, OS, and soundcard) of computers that can be reviewed by customers. At this stage, the information about these products can be hard-coded into the HTML or program files.
5. A customer can select a computer with default/standard configuration and pricing, and then customize it by changing its configuration, that is, by replacing one component with another from a list of compatible components.
6. Whenever a change has been made by the customer, the price total needs to be dynamically changed and displayed to the customer, in an area embedded in the online store, not in a pop-up window.
7. After the customer has hit the Buy or Add to Cart or something similar, a summary of selections, including all the details of the customized computer and its pricing, should be displayed in the browser window.
8. At this stage, you don't need to save orders placed by customers in the database. You can use Cookies to store and track customer selections.
9. All links, menus, and buttons within the online store should be active.

All files for this project should be stored under directory TMA3A/part3

## Part 4

(35 marks)

In part 4 of the assignment, you will continue your work completed in part 3, to develop a fully functioning online computer store (without payment transaction, though). Your tasks for this part are:

1. Add a customer management module to the online computer store, which should include new customer registration, customer authentication, and password recovery.
2. Add an order management module which will save orders for registered customers and allow registered customers to manage their orders, including view the list and details of each item in the list and delete or make changes to a selected order in the list.
3. Design and implement a back-end database to support your online computer store that does the following.
  - a. Store all the details of the computers and components and replace all the data hard-coded into the program files with data from the database.

- b. Use the database for all your customer management.
- c. Use the database for all your order management. When an order is submitted, the details of the order, including pricing, need to be saved in the database, and then displayed in an appropriate format to the customer.

All files for this project should be stored under directory TMA3A/part4

In your assignment report on the main page (tma3a.htm), show the design of the database tables, and explain the functionality of each program and web page you developed. You may want to research some examples in [Microsoft's ASP.NET AJAX Showcase](#). If you use any code from these examples that is not part of the standard ASP.NET or ASP.NET Ajax distribution package, **you must clearly indicate the source of the code**. However, all the significant components of your system must be developed by yourself.

Test all parts of the assignment on your own server before you submit Assignment 3A to your tutor. Make your web server accessible for your tutor to assess your work. For your personal protection you should not put your name and student ID on an unprotected web site, and after your tutor has assessed your work, you must remove all the assignment documents from the site.