

Web Applications with C#.ASP

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Buses, Margaret Hall

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Introduction

The purpose of this book is to provide a simple introduction to C#.ASP web application development with Microsoft Visual Studio 2010. This was designed initially for students of the Glyndŵr University Foundation Degree in Applied Computing who are undertaking the module 'Web Applications' in the second year of their course. These students will have completed a module in text-based Java programming in which a variety of console applications were developed. They should be familiar with basic programming structures such as loops, conditionals and arrays, and will have been introduced to object oriented concepts of classes, properties and methods.

Visual Studio provides a very wide range of programming and database tools for software development. It is therefore possible to solve the same software problem in a number of different ways, and each individual programmer is likely to develop their own preferred techniques and methods of working. The solutions demonstrated in this book are not necessarily claimed to be the 'correct' or 'best' programming approaches, but have been found to work reliably and to be relatively easy to understand.

For reasons of space, comment lines have not been included in the program listings, although programming techniques are explained in the accompanying text. Students are strongly encouraged to add their own comment lines to the program listings, both as a way of checking their understanding of the program and as a way of easily identifying sections of code which can be copied into other projects as standard modules.

By working through the example programs in this book, students should gain an understanding of basic web page interface construction, processing and database operations in an object oriented C#.ASP environment. Students are encouraged to develop the projects further by adding extra functionality, or to create their own similar projects which incorporate the programming techniques demonstrated here. Programming is a very practical activity, requiring extensive practice to develop a high level of skill.

Grateful thanks are due to students of Coleg Meirion-Dwyfor who have helped in the design and testing of the example programs in this book. However, the author accepts sole responsibility for any errors in the work.

Chapter outline

The initial chapters **Car journey calculation** and **Postage rates** demonstrate the construction of web page user interfaces in Microsoft Visual Studio from toolbox components. Methods of programming calculations are demonstrated, including loop and conditional structures. The TRY...CATCH error handling structure is introduced.

Customer records introduces the techniques for setting up a database table, accessing the database from a web page at run time, and displaying the table data in grid view.

Bus timetable brings together file handling techniques and a more substantial programming algorithm in C# in order to find most suitable journey departure and arrival times to meet the user's travel requirements.

The following four chapters demonstrate techniques useful in web application development:

Snowdonia illustrates the use of a master page header with menu bar for accessing multiple pages of a web site.

Mountain Bike Club demonstrates techniques for uploading photograph images for storage in a database, and the reloading and display of these images on a web page. This forms the basis of a web site content management system.

Holiday cottage bookings demonstrates the use of the **calendar** component to interactively select available dates in a booking system.

Library loan system introduces an object oriented approach to representing entities in a data model. The program defines object classes for books, library users and loans, and uses these objects as a means of linking the web page user interface with the underlying database.

The final two web site projects, **Hardware store** and **Canal boat holidays**, bring together many of the techniques developed in earlier chapters to create substantial web applications. Extensive use is made of database operations to handle orders or bookings, and there is again an emphasis on object oriented design.