# C Sharp Enterprise Zone

# Introduction

Habanero has been developed over eight years and has adapted to various technologies and development platforms. This architecture was developed by Chillisoft Solutions Pty (Ltd), whose primary revenue stream is, custom application development. Due to the nature of this business, the applications have to be robust, easily extendable, easily deployed, secure, scalable from a single user to thousands of users and easily maintainable by any developer in the company or developers in the customer’s company. The framework must also be easily used while retaining extensibility, since our developers’ skill range from young graduates to seasoned professionals and our project s range from (2 weeks with a single developer) to 3 years with a large team of developers. Eish! I hear you say… well it was a tall order but one that we have finally mastered enough to share with you.

i.e. Habanero ( i.e. a framework that enables development of enterprise applications) is a free and open source allowing developers to review, study, use and contribute to it. In essence Habanero solves the problems that are common to developing and maintaining enterprise applications.

So what constitutes enterprise applications? Enterprise applications, in the broadest sense are applications that create, store and manage information in an organisation. The applications are used in the running of a business where the information is stored in a structured manner over a period of time. The application’s information is usually shared between multiple users and is frequently used in geographically distributed locations. Typical examples of enterprise applications are Customer Order Management, Procurement, Asset Management, Financial, Planning scheduling, logistical and supply chain management.

## Why this book

As the Habanero development community has continued to grow, it has become clear that there is a need to provide a more extensive guide on the use of Habanero. We have therefore developed a comprehensive book to provide developers with additional information on not only on how to use Habanero and Firestarter but also on the common problems and solutions that are incurred in developing enterprise applications.

## IS THIS BOOK FOR ME?

The purpose of the book is to cover all topics that are relevant to enterprise application development in sufficient detail so as to provide the reader with adequate knowledge to develop a robust scalable enterprise application. The book leverages off Chillisoft’s development experience allowing the developer to dodge common mistakes. We acknowledge that it is impossible for one book to cover all topics (in sufficient detail), and have consequently provided additional references to other books and articles for those readers who are interested in or who require more detail.

This book is intended for the use of junior and senior developers. The book assumes that you have a reasonable knowledge of object oriented programming and practices, C#, .NET and database management systems. The book also assumes that you have at least some basic knowledge of enterprise application development.

## how do i use the book?

To help you determine how to read this book we have categorised our audience into two extremes. Most likely you will fit somewhere in between these categories:

1. A developer who wants to know how to use Habanero framework to develop an application.
2. A developer who wants to understand why and how the framework was developed, how to extend it and or how to use the concepts to develop their enterprise applications.

We understand that the readers of this book and the users of Habanero are busy. We have therefore endeavored in every way to ensure that the book can be used to provide immediate benefit at each stage. Since software developers learn best by examples, we have included extensive examples and a worked example that will be developed through the various sections of the book.

## Book Section Overview

### Section 1 - Overview:

This section provides the generation of a sample application, using Habanero. It introduces all the principles that are required to develop enterprise applications. We would suggest that all readers read these chapters.

Chapter 1 covers the use of Habanero and Firestarter (an application code generator specialised for Habanero). This is very brief and used merely to give the reader a quick overview of the Framework.

Chapter 2 covers the principles and practices of enterprise application development. This chapter will touch on all the concepts that will be covered in the remaining chapters of the book.

### Section 2 – Business Logic Layer:

This section covers the development of the business logic layer of an enterprise application, also called the domain model. The domain model involves a group of objects that models the area of business area that your system is implementing. The domain model in the simplest case closely resembles the relational database model but in more complex business scenarios can be significantly different. The domain model provides the layer where you model the domain behavior, data, validation and object relationships. One of the important functions of this layer is to hide the database, so this section will not discuss any database and object persistence issues. Object persistence will be addressed in Section 4.

Each chapter in the section starts with a brief introduction to the topic. This is followed by an example of how to model this using Firestarter and Habanero and how to use this in an application. A developer who merely wants to use Habanero can stop at this point and move onto the next chapter.

The chapter will then delve into the more advanced features of Habanero and Enterprise applications including how Habanero implements these features, the design decisions behind the implementation and where relevant a discussion of why these decisions were made when compared to alternates.

Finally the chapter moves onto how these features of Habanero can be extended to deal exceptional situations and requirements.

### Section 3 - Presentation:

This section covers the development of the presentation layer. The presentation layer covers user interfaces for capturing, searching, manipulating, reporting on and viewing objects. The technologies covered here include, ASP, C# and Visual WebGui (an AJAX framework for web development). Our preferred reporting tool is Active reports.

### Section 4 - Data Access:

This section covers the development of the Data layer i.e. the mapping of business objects to a data store. This section includes persisting objects to XML, memory caches, object data stores and relational databases. Since most enterprise applications persists their data to relational databases, a large part of this section revolves around persisting objects in a relational database (using object relational mapping). The structure of these chapters is the same as section 2 and should be used in the same manner.

### Section 5 - Miscelaneous:

In addition to the presentation of domain objects in a user interface, our business objects may also need to be available to other applications e.g. via web services. In this section we will discuss various solutions for these.

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